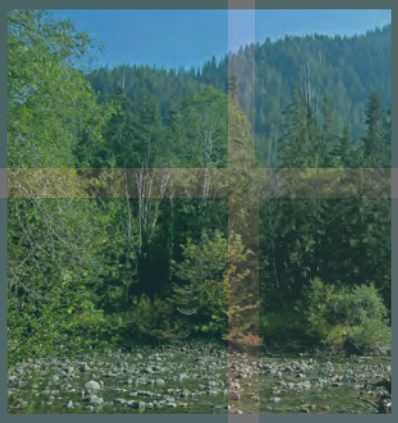
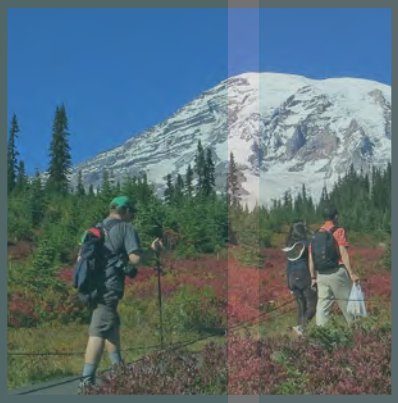
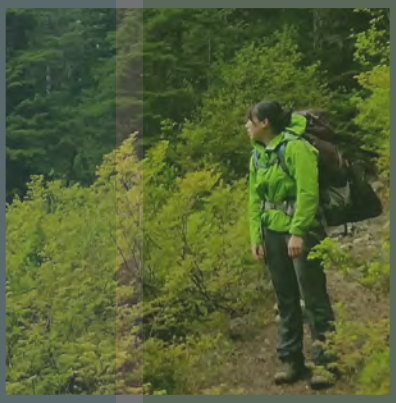
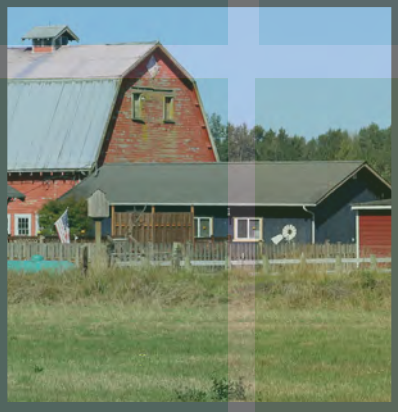
Regional Open Space Conservation Plan

– June 2018



Puget Sound Regional Council

Funding for this document is provided by the U.S. Endowment for Forestry and Communities' Healthy Watershed Consortium Program. In addition, some funding is also provided by member jurisdictions, grants from U.S. Department of Transportation, Federal Transit Administration, Federal Highway Administration and Washington State Department of Transportation. PSRC fully complies with Title VI of the Civil Rights Act of 1964 and related statutes and regulations in all programs and activities. For more information, or to obtain a Title VI Complaint Form, see **https://www.psrc.org/title-vi** or call 206-587-4819.

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Regional Open Space Conservation Plan — June 2018

Cougar Mountain Regional Wildland Park, King County

"Pretty much everything was open space at Treaty times. This open space that Tribes maintained their livelihood on for many thousands of years has become fragmented and greatly diminished. Today the remaining open space is critically important as our first defense against impacts from climate change and for the preservation of tribal culture and the habitats that fish, elk, huckleberries and herbs, our treaty trust resources, all depend upon."

— Terry Williams, The Tulalip Tribes

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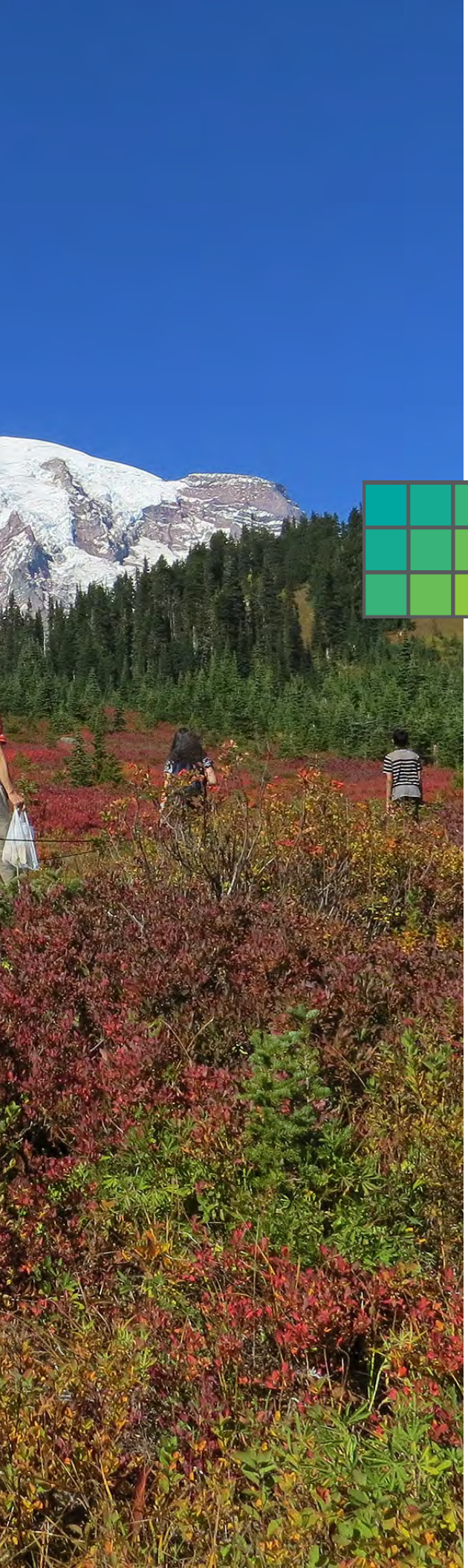


Executive Summary

An Open Space Vision

Cyclists bike through a forest of tall evergreens as they cross the Kitsap peninsula. Hikers arrive at regional trailheads where they enjoy a day of contemplation in nature. A new generation of farmers continues the region's farming legacy. They experience abundant harvests and enjoy convenient access to neighboring urban markets where people shop for farm fresh produce. Residents of all races, income levels, and ages are healthy, active, and enjoy their local parks and the region's wild open spaces. Streams are full of salmon jostling for space to spawn. Osprey and bald eagles pluck salmon from the waters to feed their young. Flocks of shorebirds rest and forage along the Snohomish and Stillaguamish estuaries. Elk meander along the White River, munching on vegetation. Working together, the region's communities enjoy the benefits of the regional open space network that they have preserved and protected for future generations.

The Regional Open Space Conservation Plan aims for such a future in the central Puget Sound region. This plan maps the **regional open space network** and identifies priority conservation actions needed to sustain the region's open spaces and the critical ecological systems on which our communities depend, for generations to come.

Open Space in the Puget Sound Region

Open space includes a wide spectrum of public and private, urban and rural, and natural and working lands. It includes lands such as trails, forests, farms, wetlands, floodplains, and shorelines. The basic geography of the ecological systems that form open spaces is the watershed. What happens in one part of a watershed impacts other parts of the watershed. Consequently, this plan considers open spaces by watershed.

Open space is critical natural infrastructure for the region that provides essential economic, recreational, cultural, aesthetic, and ecological services. As of 2015, open spaces in the region provided services worth at least $11.4 to $25.2 billion annually.[1]

These benefits include clean water, food, recreation, flood storage, carbon storage, and wood products. Open spaces contribute to both the physical and mental health of residents in the region. They filter air and water, provide recreational opportunities, improve mental health, and support a sense of well-being. Historically, open spaces were the ancestral lands of the Coast Salish tribes, who today retain rights to these natural resources.

Working lands provide jobs for farmers and timber employees. The big, wild open spaces in our region support a thriving and growing recreation and tourism industry. They also help companies attract employees, who want to live somewhere with a high quality of life.

Open spaces help address some of the major issues the region is facing. Open spaces support and improve **physical and mental health**. High quality open space in urban areas and growth centers attract residents and support **growth management** and the Regional Growth Strategy. Open spaces also support **economic development** through the recreation industry, tourism, and attracting employees to the region.

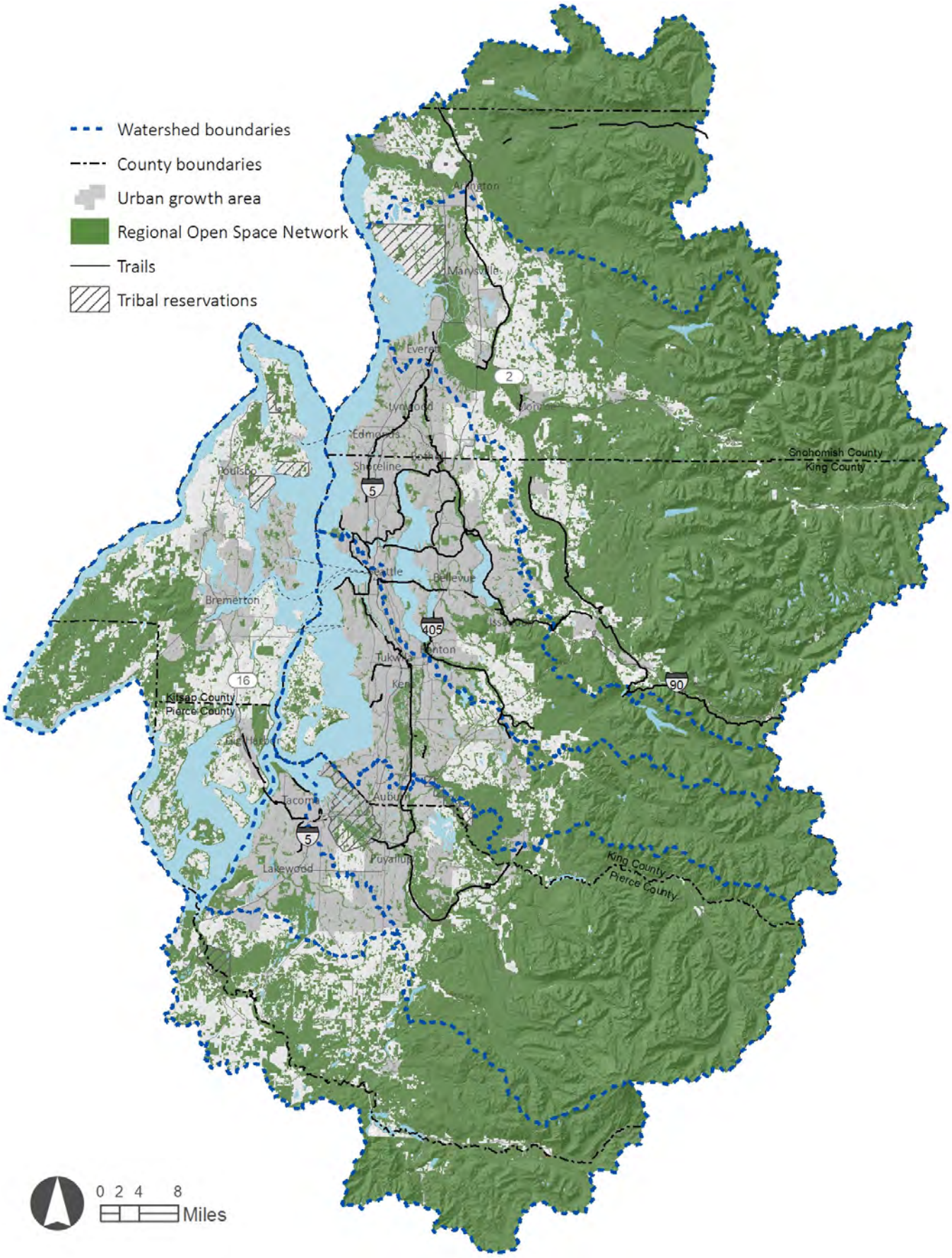
To ensure that these open spaces continue to support the region's economy and quality of life and to accelerate their protection, this plan maps out the region's open space network, identifies the parts of the network that are already protected, highlights remaining conservation needs, and presents an action plan.

The Regional Open Space Network 1.0

For the first time, this plan envisions a complete regional open space network that weaves together and enhances the region's many open space resources (Figure E.1). With the guidance of an advisory committee, the network was developed through a data-driven, collaborative process that involved a diverse set of stakeholders representing counties, cities, tribes, resource agencies, nonprofits, educational institutions, and businesses. In this way, the plan builds on the existing conservation planning efforts in the central Puget Sound region.

Figure E.1

The Regional Open Space Network



The regional open space network includes six types of open space:

- **Natural lands** are areas important for supporting wildlife, preserving ecosystems, and providing opportunities for recreation and experiencing nature.
- **Farmlands** are lands that support agriculture. These lands provide local food options for the region's residents along with wildlife habitat, stormwater management and many other ecosystem benefits.
- **Working forests** are resource lands that support jobs and our rural economies, provide timber and other materials, and support carbon sequestration, stormwater management, drinking water, and wildlife habitat.
- **Aquatic systems** include lands that support clean drinking water, mitigate flood hazards, and support healthy habitat for salmon and other aquatic life.
- **Regional trails** are active transportation corridors that provide access to the region's open spaces and connect communities and other important regional destinations. Often, trails are interconnected with rivers, floodplains, and farmlands.
- **Urban open space** is the system of parks and green spaces (both public and private) that provide recreational, aesthetic, environmental, and health benefits within an accessible distance to the region's urban residents.

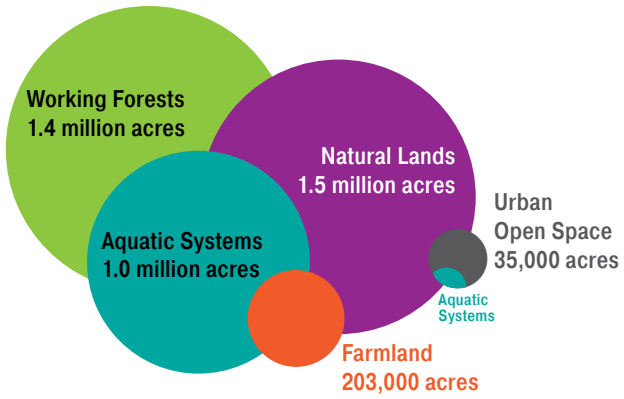
Regional Open Space Strategy (ROSS)

The ROSS was a collaborative effort to integrate and elevate activities that conserve and enhance the ecological, economic, recreational, and aesthetic vitality of the central Puget Sound region. Six years of collaborative study on the threats to the region's existing open spaces, the value and benefits of open spaces to address regional challenges, and possible pathways to open space conservation and enhancement culminated in a Regional Open Space Strategy Report.

This plan, a distinct effort from ROSS, builds off some of ROSS's key findings, including the need for a coordinated, spatial vision of open space in the region.

Figure E.2

Approximate Acreages of Each Category in the Regional Open Space Network With Overlap Taken Into Consideration



Source: PSRC, 2018.

The regional open space network provides a unified, regional context for local conservation and planning efforts and lays out a vision for open space in the central Puget Sound region. The network highlights open spaces that cross jurisdictional boundaries and lands that provide multiple open space services. It also increases attention on the value and importance of open spaces in the region and thus can help attract additional funding. In addition, conservation of the regional open space network supports tribal treaty rights, which overlap with the categories of open space identified in this plan.[2] The regional open space

network covers about 3.03 million acres of public and private land and 339 miles of trail (Figure E.2). About 70 percent of the regional open space network has long-term protection through public ownership and conservation easements. Working lands designations also help protect 1.3 million acres of privately owned farms and working forests. Other private lands may be protected through environmental regulations, but many open space areas lack sufficient protection.

The Challenge

A strong economy in the region is accelerating growth and development, which puts pressure on the open space network. Estimates indicate that the population of the region is expected to grow by an additional 1.8 million by 2050, creating demand for new housing and commercial areas, and increased public access to parks and open space.[3] Planning efforts rarely take the region's open space or watershed context into consideration, which can lead to the gradual loss of open space lands across the region.

Among the categories of open spaces in the region, farmland may be under the greatest threat. Since 1982, a quarter (55,000 acres) of the region's farmland has been lost. A range of factors is threatening the economic viability of farmland, including increased land values, farm costs exceeding revenues, lack of supporting infrastructure, a lack of new farmers to replace retiring farmers, and farming lands that lack protection through zoning or other regulatory designations. Only 64 percent of farmland in the open space network has a protective agricultural zoning designation and many of these designations provide limited protection due to small allowable lot sizes.

Growth in recent years has resulted in loss of tree cover and hardening of the region's watersheds. Within the urban growth area, 12,900 acres of tree cover were lost between 2006 and 2013.[4] In rural areas (excluding resource lands), 19,800 acres of tree cover were lost over the same period.

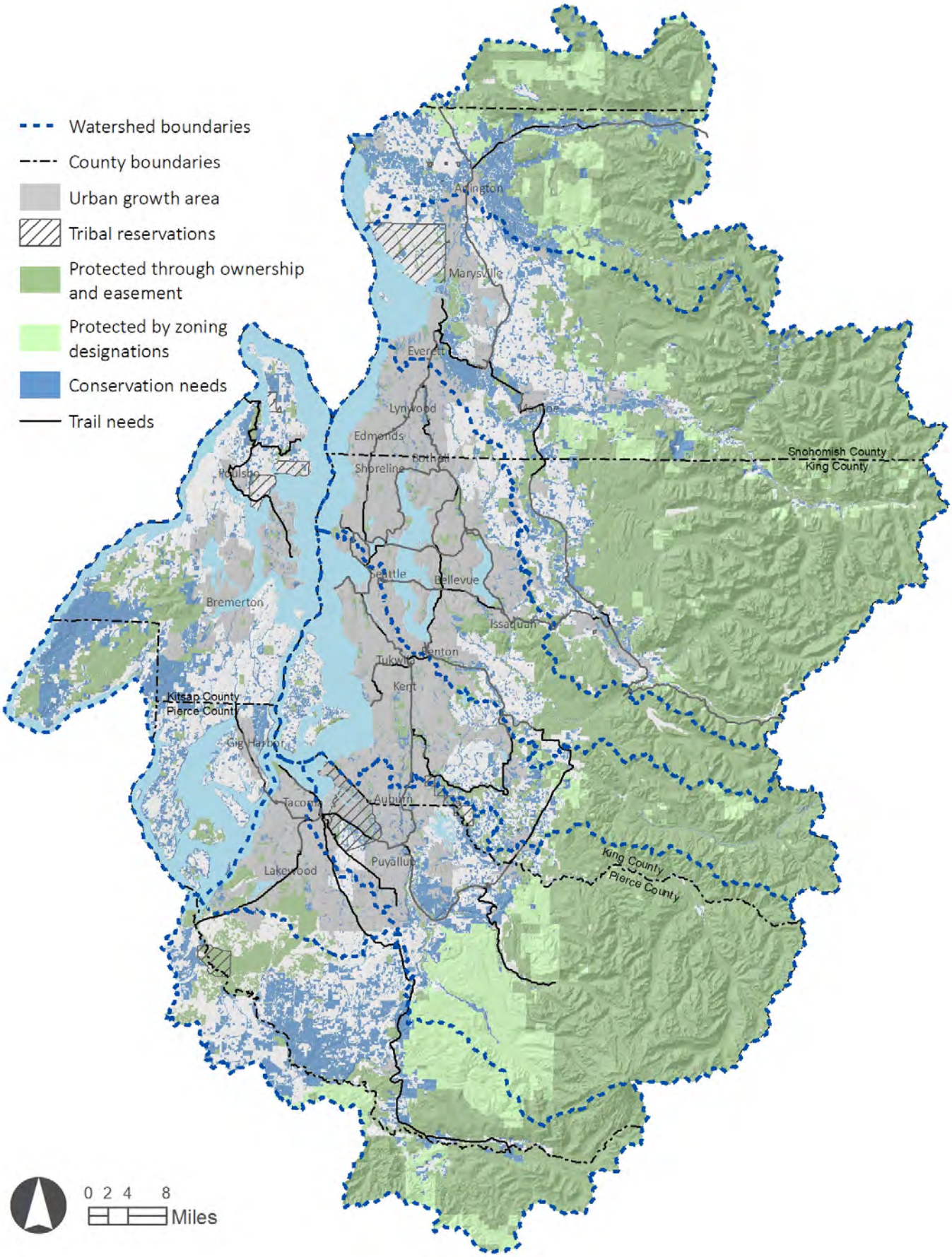
Meanwhile, outdoor recreation is more popular than ever and some jurisdictions struggle to maintain and provide access to parks and green spaces that are necessary to making the region's urban areas livable. A minimum of 47 new parks or green spaces are needed to meet the most pressing urban open space needs (see Chapter 5).

Current conservation efforts face barriers to protecting remaining high value open spaces. Insufficient funding for protection, restoration, and maintenance is a persistent constraint to open space conservation. Land prices are increasing, making purchase of land and conservation easements more challenging. New, non-traditional sources of conservation funds and innovative land protection techniques will be necessary.

Approximately 900,000 acres of the regional open space network are in private ownership without a conservation easement. Of those, there are 104,000 acres of farmland considered to be at risk, 183,000 acres of working forest considered to be at risk, and 175,000 acres of intact habitat in natural lands and aquatic systems considered to be at risk (Figure E.3). "At risk" is defined differently for each category and is discussed in Chapter 4. Combined, these total to 463,000 acres of at-risk open spaces within the regional network. To complete the regional trail network, an additional 300 miles of trail are needed.

Figure E.3

Conservation Needs in the Regional Open Space Network



Access to Open Space

Open spaces provide significant physical and mental health benefits and contribute to a high quality of life. However, not everyone in the region has easy access to open space. Access to open space refers both to the ability to go to large, wild open spaces and the ability to go to local parks and recreation areas ("urban open space"). Access to large, wild open spaces almost invariably requires a car and leisure time, adding barriers to access, especially for people with lower incomes. Expanding public transit options and targeted programming can help enhance access to these places.

This plan analyzes residents' access to urban open space. The preliminary analysis in this plan found that 76 percent of residents in the urban growth area are within walking distance of a park, open space, or trail. However, that leaves 24 percent of residents in the region's urban areas, who lack easy access to open space. This plan explores a potential methodology to target areas for open space investment to close this gap. While local urban parks are generally the responsibility of local city and county governments, a regional approach to analyzing urban open space needs supports considering how to equitably target resources to underserved communities.

Action Plan

This plan identifies approximately 463,000 acres of the regional open space network that are most at risk of conversion to developed uses with resulting degradation or elimination of open space benefits. To protect these areas from development, to preserve the open space services they provide, and to increase equitable access to urban open space, this plan charts several strategies that the region, local jurisdictions, resource agencies, conservation nonprofits, and others can act on.

The key strategies in the action plan are:

1. **Incorporate open space conservation into all levels of planning.** Regional plans, as well as city and county plans, can integrate the regional open space network and prioritize conservation.
2. **Support growth in the right places.** Maintaining a stable urban growth area and focusing growth in the appropriate locations will continue to reduce development pressure on the regional open space network.
3. **Keep working lands working.** Expand funding for purchase of developments rights programs, enhance the regional transfer of development rights program, provide support to farmers, and foster farm and forest economies. Maintain agricultural and forestry zoning designations.
4. **Protect remaining key habitat areas.** Ensure that critical areas and shoreline regulations are protecting the region's remaining habitat areas. Land acquisition and/or conservation easements are needed to provide the best habitat protection but will require significant conservation funding.

5. **Support urban open space and increase access to nearby nature for urban residents.** Ensure all population segments have access to parks and open space. Invest in parks and green spaces in the neediest areas and in designated growth centers. Build out the trail network and provide transit options to regional parks and open space.
6. **Build a regional trail network.** Use the region's Active Transportation Plan as a guide to close missing links in existing trails, add trails to underserved communities, and aim to complete three north/south trails and one to two east/west trails in each county.
7. **Enhance stewardship on open space lands.** Implement Public Benefit Ratings Systems. Work with conservation districts, agencies, and nonprofit organizations to provide support to landowners. Strengthen tree retention policies. Explore the use of ecosystem markets to preserve open space services on private lands.
8. **Restore habitat in high value areas.** Restoration will be necessary to support wildlife and recover salmon and orca populations. Watershed plans have identified needed restoration projects.
9. **Coordinate planning among and within agencies, jurisdictions, and organizations.** Many open spaces cross jurisdictional boundaries and many are important to multiple resource agencies and organizations. Maintaining these open space services will require coordination among these different groups.
10. **Build multi-benefit green infrastructure.** Green infrastructure provides typical infrastructure functions while also providing open space functions. Green infrastructure provides recreation and aesthetic opportunities, improves stormwater flows and quality, provides habitat, enhances aquatic systems, and supports mental and physical health. Public lands and rights-of-way are opportunities to build this infrastructure, and incentive programs can encourage it on private land.

Some of the most effective conservation programs use multiple strategies and tools. This plan provides a list of conservation tools (Appendix B), many of which have been used by one or more jurisdictions in the region but could be enhanced and used more widely. Seven less-used tools have been identified as highly promising tools, but barriers exist that prevent full effectiveness:

- Transfer of development rights.
- Watershed management plans.
- Return on investment analysis.
- Ecosystem service markets.
- Multi-benefit green infrastructure.
- Conservation finance.
- Hazard mitigation plans.


City of Auburn

To accelerate conservation, the region should work to remove barriers, and enhance and promote these tools.

Making the Plan Real

Many partners are needed to successfully implement this plan, including cities, counties, tribes, conservation districts, resource agencies, and conservation nonprofits. The Action Plan in Chapter 6 identifies specific actions that local jurisdictions can consider and, where appropriate, bring into their work programs. The Puget Sound Regional Council (PSRC) can support the work of counties and cities interested in incorporating the regional open space network into their planning efforts. PSRC can also bring together other partners and help facilitate coordination among jurisdictions.

However, with 463,000 acres at risk, this plan requires enhanced efforts and regional collaboration and partnerships. The conservation tools called out in this plan must be enhanced and shared so that they are used more effectively and widely across the region. PSRC can advance the use of these tools and identify opportunities to pilot new tools.

The forthcoming VISION 2050 provides an opportunity to incorporate the Regional Open Space Conservation Plan into regional planning. To track progress over time, PSRC will report on key open space performance measures. As conservation in the region progresses and lessons are learned, the plan will need to be updated accordingly.

The Time Is Now

Foothills Trail, Puyallup River. Pierce County

The regional open space network is a core component of the region's economy, quality of life, and identity. It makes the region a desirable place to live and work and resilient to climate change. However, if we do not carefully adhere to our regional vision to protect the open space network, we risk losing the very open spaces that draw people and companies to locate here. The region is at a critical point — there is still time to preserve the region's prized open spaces, but only if we act now. Most critically, our actions must be **collaborative** with all parties working in concert for maximum efficiency; **equitable**, to ensure that all enjoy the benefits that open spaces provide; and **strategic**, concentrating our efforts toward the most effective actions. It is toward these objectives that this plan is aimed.

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[1] Chadsey, M., Z. Christin, and A. Fletcher. 2015. Central Puget Sound Open Space Valuation Study. Earth Economics, Tacoma, WA. Prepared for: Regional Open Space Strategy, University of Washington.

[2] Letter from Tulalip Tribes on the Draft Regional Open Space Conservation Plan. March 23, 2018.

[3] PSRC. 2018. Draft 2050 Forecast of People and Jobs. March 1, 2018. www.psrc.org/sites/default/files/2050_macro_forecast_web.pdf.

[4] PSRC. 2018. Staff analysis using WDFW High Resolution Change Detection data.

1 A Regional Open Space Conservation Plan

Why is open space conservation a priority for the central Puget Sound region? How does the coordinated regional approach in this plan advance that goal?

Lake Dorothy,
Alpine Lakes Wilderness

1.1 Why Now?

The Puget Sound region is well known for its natural wealth including rugged mountains, evergreen forests, fertile farmlands, meandering river valleys, and teeming shorelines. These world-class open spaces support a high quality of life in the region and provide food, timber, energy, clean air and clean water. Historically they were the ancestral lands of the Coast Salish tribes. Over time, they have helped the region become one of the fastest growing in the country by attracting new residents and businesses and sustaining a diverse economy and healthy environment. Residents here enjoy being outdoors, whether at a local park, a regional trail, or expansive wilderness.

While the region has much valued open space, past and current development has impacted the region's environment, and loss of open spaces to development over time threatens the sustainability of these key regional assets. At the heart of the region, the health of Puget Sound and many of the rivers and streams that feed into it has declined significantly, which has led to a decline in salmon, orcas, and other wildlife. The purpose of the Regional Open Space Conservation Plan is to accelerate the conservation of open spaces in the region for the benefit of future generations.

The need for a coordinated open space plan has become increasingly apparent in recent years. Pressure to develop land has increased, as have land prices, adding urgency and challenges to making conservation gains. Many open spaces may eventually reach a tipping point, where there has been too much loss or fragmentation to remain self-sustaining. This is particularly true with farmland — threats to the economic viability of farms are leading to lands being taken out of production and converted to other uses. This fragments farmland, further reducing the viability of remaining farms.

Viability of ecological systems face similar challenges — if too much land supporting watershed processes or wildlife habitat is lost, those ecological assets may not be able to recover.

The conservation of these open spaces is an issue that necessitates planning at a regional level. Open spaces do not follow political boundaries and conservation efforts often demand cross-jurisdictional coordination. Even open spaces wholly located in one jurisdiction can affect areas farther away. A floodplain that is filled in with development can cause increased flooding in downstream communities. Loss of farmland in one county affects the viability of the farming economy in neighboring counties. Additionally, different types of open spaces are overseen by different agencies at different levels of government with different goals, further complicating efforts. Regional activities and growth patterns also impact open space. Decisions in one part of the region can lead to development pressure on open spaces in other parts of the region.

The region has been working to conserve open spaces including farmland, forests, and floodplains. Successful efforts have resulted in securing important open space areas and restoring many acres of degraded habitat. The central Puget Sound region adopted VISION 2040 as a shared strategy for moving towards a sustainable future. One of the goals of VISION 2040 is to direct future growth into existing urban areas, primarily within centers that are connected by a robust transportation network, while at the same time curbing sprawl into rural areas, resource lands, and open spaces. The policies and actions in VISION 2040 support open space as a regional priority. Multicounty Planning Policy (MPP)-En-8 calls for the region to "identify, preserve, and enhance significant regional open space networks and linkages across jurisdictional boundaries." MPP-En-9 calls for the region to "designate, protect, and enhance significant open spaces, natural resources, and critical areas through mechanisms, such as the review and comment of countywide planning policies and local plans and provisions." En-Action-2 states that:

> *"The Puget Sound Regional Council, its member jurisdictions, open-space agencies, and interest groups shall develop a regional green space strategy."*

The Regional Open Space Strategy (ROSS), developed by the University of Washington's Green Futures Lab and other partners, advanced implementation of the policies in VISION 2040. A key finding from the ROSS was that conserving the open spaces in the central Puget Sound region will take a regional effort and will require regional coordination that connects land use with ecological planning.[1] The ROSS found that current conservation efforts tend to focus on a specific project area or jurisdiction and are frequently opportunistic rather than guided by a set of regional priorities. The ROSS called for a coordinated, spatial vision to guide open space conservation efforts in the region.

The Regional Open Space Conservation Plan begins to address the needs identified in VISION 2040 and the ROSS, including the need for a regional, cross-jurisdictional approach. The Puget Sound Regional Council (PSRC), which leads regional planning in the central Puget Sound area, coordinated the development of this plan, while an advisory committee consisting of representatives from counties, cities, tribes, resource agencies, nonprofits, and working lands businesses, guided the process. This plan has been developed through a data-driven, collaborative process that involved a diverse set of stakeholders. PSRC staff worked closely with county staff to gather

information, develop maps, and solicit feedback. PSRC staff also conducted interviews with over 200 people from nonprofits, resource agencies, tribes, and other stakeholder groups.

This plan addresses MPP-EN-8 and -9 and builds on local and regional open space work that came before it, including the ROSS recommendations. It maps out a first-ever regional open space network, identifies strategies for conserving the open spaces in the network, and recommends tools for local planners, conservation planners, and resource agencies to use in furthering these strategies.

This plan defines open space broadly, to include a wide spectrum of public, private, urban, rural, natural and working lands. Most open spaces are undeveloped or lightly developed areas that provide value and services to the region. These include lands that provide economic value that support food production and raw materials, such as farmland, pastures, and working forests. Open spaces are also lands that support biodiversity such as wildlife habitat and river corridors that are critical for salmon recovery. Open spaces also include areas that provide recreational and aesthetic opportunities, such as parks, trails and other areas that improve quality of life and play a role in maintaining healthy lifestyles. They also include lands that support tribal hunting, fishing, gathering and other protected cultural resources and uses.

1.2 Native Americans and Open Space

Suquamish Village,
Port Madison Indian Reservation

The central Puget Sound region is the ancestral area of the Coast Salish tribes, the original inhabitants and caretakers of these lands. Tribes maintained their livelihood on the region's open spaces for thousands of years prior to European settlement in the mid-1800s. In the 1850s, tribes were compelled to sign treaties with the U.S. government wherein they ceded most of their land while reserving the rights central to maintaining tribal way of life and culture. These include the right to fish in all usual and accustomed fishing grounds, and the right to gather and hunt on all open and unclaimed lands. Virtually all open spaces within the region are subject to these reserved tribal treaty rights. Later court decisions upheld these rights and clarified in the case of fishing that vital habitat necessary to sustain tribal fisheries must not be degraded for the treaty rights to have meaning. This confirms the state and federal governments' duty to protect fish and wildlife habitat.

Because many of the open spaces of the region have been lost through conversion to other uses, the remaining open spaces are critically significant to the tribes in the region, who rely on these lands to continue their culture. When planning for open space, it is important to work closely with tribes to ensure that tribes' exercise of their treaty rights are not adversely impacted by uses of open space.

1.3 The Value of Open Space

Open space provides benefits or "services" to society, and as such is also called green or natural infrastructure. For example, natural areas within a watershed (forests, intact soils, wetlands, rivers, etc.) capture rainwater, store it, filter it, and convey it to areas where people can use it. These water supply services are crucial to human life and are provided by open spaces for free.

There are four broad categories of open space services: 1) supporting, 2) regulating, 3) cultural, and 4) provisioning services.[2] Supporting services are necessary for other ecosystem services and include soil formation, nutrient cycling, and photosynthesis. Regulating services include regulation of climate, water, and disease, as well as water purification, storm protection, and pollination. Provisioning services are those that provide materials such as food and fiber, fresh water, fuel, biochemicals, and genetic resources. Cultural services are nonmaterial benefits that people derive from ecosystems, such as spiritual enrichment, cognitive development, recreation, and aesthetic experiences.

> ***Tree Canopy***
>
> *Trees provide many invaluable benefits locally and regionally. Trees help maintain natural drainage patterns by slowing and absorbing stormwater. Trees help keep urban areas cool and filter pollutants out of the air. They remove carbon dioxide, a greenhouse gas, from the air and store it. Trees provide mental health benefits to nearby residents by reducing stress and creating a sense of well-being. They provide habitat to birds, mammals, insects, amphibians, and reptiles. A single tree can provide a stepping stone for wildlife migrating through an area.*

Recent research has shown the benefits that open spaces, particularly those located in urban areas, provide for human health, including both physical and mental health.[3] Physically, open spaces, particularly those with high levels of tree canopy coverage, reduce the urban heat island effect and improve air quality by removing air pollutants (such as particulates, nitrogen dioxide, sulphur dioxide, and carbon monoxide). Open spaces also provide opportunities for exercise and recreation, which lead to improved cardiovascular health outcomes and reduced mortality. Neighborhood greenness is also associated with improved pregnancy outcomes, such as higher birth weight, which is a predictor of reduced infant mortality and longer-term health in children.

Urban green spaces also contribute to improved mental health outcomes.[4] People who live in greener areas have lower stress levels and higher well-being compared to people living in areas with little access to green spaces. Neighborhood greenery is also associated with lower levels of depression and anxiety, improved cognitive and behavioral development in children, and lower rates of Attention Deficit

On the trail to Gothic Basin in Snohomish County

Hyperactivity Disorder (ADHD). Parks and open space promote social interaction and reduce the social isolation that can lead to depression and other mental health issues.[5] Social interaction also fosters social cohesion and a sense of community.

The importance of outdoor recreational opportunities to the region's economy is also becoming increasingly clear. A report on Washington state's recreational economy found that residents of the state spend an average of 56 days a year recreating outdoors.[6] People spend their recreation time enjoying a variety of types of open space — federal lands, state lands, public waters, local parks, and private lands (such as ski areas or horse-related areas). Local parks are the most visited type of recreational open space with an average of 27 visits per year by state residents. In 2014, the outdoor industry in Washington supported about 200,000 jobs, more than the information technology sector (191,000) or the aerospace industry (94,200).

Downtown Park, City of Bellevue

A looming threat to the region comes from climate change. Open spaces in the region are integral to helping the region mitigate and adapt to climate change. Forests, forest soils, and wetlands store large quantities of carbon, preventing it from entering the atmosphere and contributing to additional warming. Forests in the region store 629 million equivalent tons of carbon dioxide;[7] loss of these lands would result in much of this carbon entering the atmosphere.

As the global climate changes, the regional climate will experience many changes as well. Open spaces will help the region be resilient to these changes. With predicted increased frequency and intensity of flooding, undeveloped floodplains can store flood waters and reduce the risk to developed areas downstream. Forested riparian areas can help keep rivers cooler and healthier for fish. Open space in upland areas can provide water storage. As wildlife habitat ranges shift to follow cooler habitats, open spaces can provide corridors and stepping stones for wildlife movement. Forest canopy in urban areas will reduce the urban heat island effect.

There are many additional services provided by open spaces in the region. Table 1.1 shows a partial list of these services.

Collectively, the region's open spaces represent a significant economic asset for the region. The dollar value of these services is conservatively estimated to be $11.4 to $25.2 billion each year (as of 2015). The true value is likely higher, as not all services could be monetized for this estimate. Over time, the long-term value of open spaces in the region is estimated to be between $328 and $825 billion, assuming a 3.5 percent discount rate as of 2015.[8] However, unlike built capital, natural capital tends to appreciate over time and is self-sustaining. At a zero-discount rate, the capital value of open spaces over the next 100 years is between $1.1 and $2.7 trillion.

The services described in the previous section are provided by open spaces for much less than manufactured alternatives. If the ability of open spaces to provide these services is disrupted, replacing these services artificially would be difficult and in many cases cost prohibitive or technologically impossible. Their loss would have huge detrimental impacts to the regional economy.

The flip side, however, is that investing in open spaces in the region can have an outsized return on investment because many open spaces provide more than one service. Conserving forest land can help ensure timber jobs, wildlife habitat, functioning watershed processes, carbon storage, and building materials into the future. Investing in open space will help strengthen the region's economy and increase the region's resiliency.

Table 1.1

Partial List of Services Provided by Open Spaces in the Central Puget Sound Region

Category	Description
Hydrology	water supply and storage, flood protection, stormwater regulation
Biodiversity	wildlife habitat and corridors
Health	improved physical and mental health, well-being, stress reduction
Recreation	walking, playing, hiking, biking, boating, fishing, skiing, camping, hunting
Food	prime soils, pollination, irrigation, drainage, pastures, seafood, hunting, gathering
Climate Regulation	urban heat island mitigation, carbon sequestration and storage
Air Quality	pollutant removal
Water Quality	pollutant removal, filtration, cooling
Economic	tourism, recreation industry, seafood industry, timber industry, agriculture
Aesthetic	views, verdant communities, natural screening, well-being
Hazard Mitigation	protection from and mitigation of floods, wildfires, landslides, tsunamis
Cultural	identity, sense of place, tribal resources and uses

Source: PSRC, 2018.

1.4 Open Space Planning in Peer Regions

Conservation of open space is an issue that other regions in the country have addressed through coordinated efforts. To gain insight on how to develop a conservation plan for the central Puget Sound region, several peer regions that have completed a similar task of mapping high conservation value lands and developing conservation strategies were studied. Nearby, the Intertwine Alliance in the Portland-Vancouver region published the *Regional Conservation Strategy*, a regional-scale strategy to protect the biodiversity of the area. The Strategy includes a prioritization scheme for the region to follow in preserving land and recommendations for conservation actions for three types of landscapes (natural areas, working lands, and developed areas). Some recommendations that are relevant for the central Puget Sound region include:[9]

- Preserve high-priority land and protect existing natural areas.
- Improve regional habitat connectivity.
- Increase financial support for conservation activities on working lands.
- Increase farm and forestland easements and support long-term economic viability of local farm and forestland.
- Encourage strong land use zoning and right-to-farm ordinances.
- Increase the value of the urban landscape for native species.
- Encourage low-impact development.

In the San Francisco Bay Area, the Bay Area Open Space Council developed the *Conservation Lands Network*, which identifies the Bay Area's most essential lands for maintaining biodiversity and sustaining the region's diverse ecosystems.[10] The *Conservation Lands Network* is used as a guide for conservation efforts in the region. The final report provides several recommendations. These include:

- Provide support to working lands to keep them in production.
- Steward conservation lands to support biodiversity.
- Incorporate the *Conservation Lands Network* into land use policy, transportation planning, and other planning processes.
- Update the network over time with new, more accurate data.

In Chicago, the Chicago Metropolitan Agency for Planning (CMAP), a metropolitan planning organization (MPO), developed a *Green Infrastructure Vision* which maps out important wildlife habitat, wildlife corridors, and opportunities for passive recreation and nonmotorized connections in the region.[11] The Chicago region incorporated this work into their regional comprehensive plan (GO TO 2040).

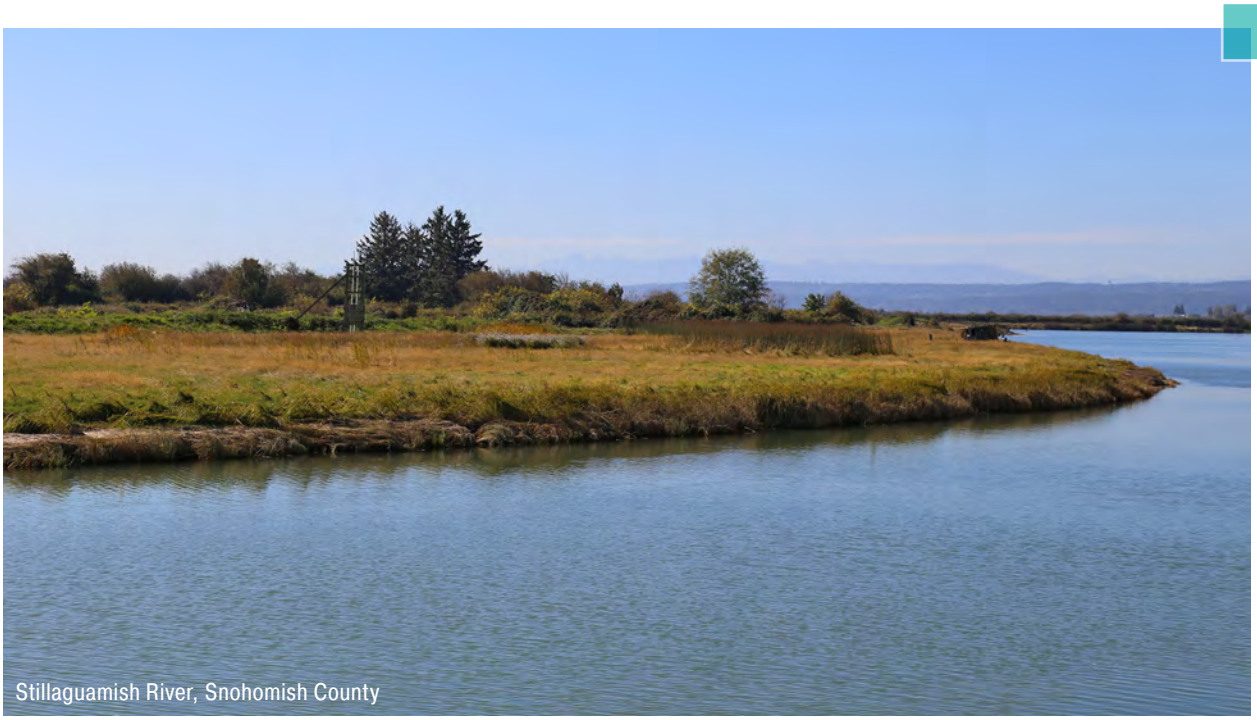
Policies related to the Green Infrastructure Vision in GO TO 2040 include:[12]

- Preserve the most important natural areas — conserve an additional 150,000 acres of lands by 2040.
- Improve park space for all residents — all residents should have access to four acres of park per 1,000 people and 70 percent should have access to 10 acres of park per 1,000 people.
- Link regional open spaces and local parks with greenways and trails. The plan sets a goal of an additional 1,348 miles of greenway by 2040.
- Increase green infrastructure at the site scale to support stormwater management.
- Encourage watershed planning and stormwater retrofits.

CMAP also researched policies for protecting green infrastructure by incorporating it into other planning efforts. For regional transportation planning, they identified the following policies:[13]

- Review impacts on the regional green infrastructure network as part of environmental documentation.
- Compensate for regional green infrastructure that is impacted by construction.
- Prioritize transportation infrastructure by considering relative effects on the green infrastructure network.

CMAP also recommends that local cities and counties incorporate the regional green infrastructure network into their comprehensive planning.



Stillaguamish River, Snohomish County

1.5 Developing the Regional Open Space Network 1.0

VISION 2040 directs the region to identify significant regional open space networks. This plan does this by mapping the regionally significant open spaces that are essential to maintaining a high quality of life in the region. This is achieved by weaving together existing plans and county datasets from across the region to create a coordinated vision for a regional open space network. Where plans reference information that is contained in resource agency datasets, such as priority habitat, those datasets are also used. Chapter 2 and Appendix C lists criteria and datasets used to develop the regional open space network. Mapping was performed on a watershed basis, which more closely aligns with natural processes. Figure 1.1 shows the eight major watersheds in the region and the study area for this plan.

Figure 1.1

Major Watersheds in the Central Puget Sound Region

The regional open space network is a map showing the most important open spaces in the region — those that ensure long-term economic and environmental sustainability of the region. It is also a database of open space information (resource, designation, ownership, etc.) that local governments, agencies, and conservation groups can use in their own planning efforts. The network presented here is version 1.0. Over time, it will need to be updated as new information and data become available. It is intended to be a starting point and a resource for regional planning and coordinated conservation activities.

This plan and the regional open space network were collaboratively developed with the assistance of many stakeholders, including counties, cities, tribes, resource agencies, nonprofits, educational institutions, and businesses. In addition to consulting the plans of these organizations and conducting interviews with key staff, an advisory committee was formed to guide the development of the plan. The advisory committee included representatives from across the region and across sectors. Chapter 2 describes in more detail how the regional open space network was developed.

1.6 How to Use This Plan

The purpose of the Regional Open Space Conservation Plan is to accelerate the protection of regionally important open space by providing a framework for coordinated conservation efforts in the central Puget Sound region. The strength of this plan and the regional open space network is that it integrates conservation and planning efforts across sectors, across agencies, and across jurisdictions. It builds on the existing planning efforts of the region's jurisdictions, resource agencies, nonprofits, and tribes. The plan presents information on the location of the region's important open spaces. It provides a regional context for local planning efforts and can help guide conservation efforts. The coordinated vision for open space in this plan serves to elevate the region's conservation needs and can help attract funders interested in social impact investments.


Gene Coulon Memorial Beach Park, City of Renton

The Regional Open Space Conservation Plan:

- Compiles data on open space services from across the region into a geodatabase for planners and conservation groups.
- Presents a regional open space network and conservation opportunities within the network that can serve as a guide for open space conservation.
- Describes the threats to open space in the region.
- Presents strategies, tools, and actions to conserve the region's key open spaces.

The Regional Open Space Conservation Plan is not a regulatory or policy document. The plan does not require PSRC, local jurisdictions, or other agencies to take specific actions. Rather, it documents important information and knowledge that can support individual and coordinated conservation efforts. It highlights work that jurisdictions and others are already doing so that different groups can learn from each other. Perhaps most important, the plan provides a platform for working together toward collaborative and regional initiatives that are targeted and scaled to meet the region's most pressing conservation priorities.

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[12] Chicago Metropolitan Agency for Planning. 2014. GO TO 2040, Comprehensive Regional Plan. Chicago, Illinois.

[13] Chicago Metropolitan Agency for Planning. 2014. Policies to Encourage the Preservation of Regional Green Infrastructure. Available online at: http://www.cmap.illinois.gov/documents/10180/11696/FY14-0039+POLICIES+PRESERVATION+GREEN+INFRASTRUCTURE.pdf/8e1428d4-5270-4d2d-b170-1427d0b785aa.

2 The Regional Open Space Network

Where are the region's open spaces and what types of land are regionally important?

Puyallup Valley, Pierce County

2.1 Identifying the Network

The regional open space network is the collective set of regionally important open space lands across the central Puget Sound region. Regionally important open spaces are those that:

- Have been identified and prioritized for conservation by counties and other public or tribal agencies.
- Have high value to the integrity of the region's ecology.
- Contribute to the vitality of the region's agricultural and forestry economies.
- Include trails and parks that provide widespread and equitable access for the region's residents.

Regionally important open spaces were identified by reviewing city, county, state, and federal planning documents; interviewing planners and resource managers at cities, counties, state, federal, and tribal agencies and conservation organizations; and collecting geospatial data from these organizations. A geographic information system (GIS) of open space data was created to compile these data.

To create a regional map, open spaces were organized into six categories: natural lands, farmland, working forests, aquatic systems, regional trails, and urban open space. Criteria for what lands to include in the regional open space network are described below and in more detail in Appendix C.

2.1.1 Natural Lands

Natural lands are lands that are important for maintaining biodiversity and ecological processes. The Puget Sound region has an exceptional diversity of habitats and ecosystems. The diverse wildlife in the region depend on this variety of habitat types. Many wildlife species require different types of habitat for different stages of life, including breeding habitat, rearing habitat, and overwintering habitat. As wildlife habitat has been reduced and fragmented, the corridors that connect key habitat cores become more important. Some of the major habitat types in the region include alpine and sub-alpine meadows, forests, shrub, wetland, riparian, prairie, streams and rivers, lakes and ponds, estuaries, and marine shorelines.

Criteria. Habitats and corridors identified by counties and resource agencies as being crucial for maintaining biodiversity in the region were included in the regional open space network (e.g., Washington Department of Fish and Wildlife's Priority Habitats and Species database and Pierce County's Biodiversity Management Areas). Wilderness and natural areas, and other areas set aside for their natural characteristics (such as state and regional parks), were also included.

What is Biodiversity?

Biodiversity is the measure of the number, variety, and variability of living organisms. It includes diversity within species, between species, and among ecosystems and describes how this diversity changes from one location to another and over time. Ecosystems that are rich in biodiversity are stronger and more resilient. In addition to the charismatic species like salmon, elk, and bears, less well-known organisms like bacteria, fungi, and insects are important to maintain as well because they provide the foundation of the ecological web.

WDFW

2.1.2 Farmland

The Puget Sound region's agriculture sector has been a part of the region's economy from the time Native Americans first inhabited the area. Currently, farmers and ranchers provide both food and environmental stewardship for the region. Farming in the region produces grains, vegetables,

King County

fruits, legumes, meat, seafood, and dairy products. Consumers in the region are placing increasing value on locally grown, fresh food. In 2016, farmers' markets in King County generated $19.8 million in sales.[1]

Farms in the region vary greatly in size. Some farms are over 100 acres, while others may only be 5 to 10 acres. As of the last agriculture census in 2012, there were 5,459 farms covering 177,138 acres of farmland in Snohomish, King, Pierce, and Kitsap counties combined.[2]

Agriculture in the region also helps support fish and wildlife habitat, and can help the region adapt to climate change. Farmers must adhere to environmental regulations designed to protect fish and wildlife habitat, and preserving farmland can help preserve such habitat. As the global climate changes, other major agricultural areas may become less productive as droughts increase in frequency and intensity. Farmland in the Puget Sound region, which will likely experience relatively less climate stress, thus represents an increasingly important source of food for the four-county area and beyond.

The region contains several important clusters of farming activities, which counties have mapped and designated for farming. This grouping helps support farming infrastructure and the farming economy. The region also contains large swaths of prime farmland. Prime farmland is the most fertile land with the best combination of physical and chemical properties to support productive farming. This includes good soil quality, growing season, and water supply. While prime soils are beneficial for cultivated lands, they are not necessary for other types of agriculture such as raising livestock and dairies.

Criteria. Lands that are designated for agriculture by counties were included in the network.[3] In addition, other farmed land within a half mile of an agricultural designation or that contains at least 5 acres of prime soils was included. Farmed land was initially identified using current use taxation enrollment data and augmented with data from the Washington Department of Agriculture.

2.1.3 Working Forests

A major draw for early European-Americans to the region was the abundant forests with giant trees that provided a seemingly endless supply of timber for the growing nation. Timber has been a backbone of the region's economy ever since and many of the region's smaller cities formed around the logging industry. The industry changed in the early 1990s when international timber economies gained in importance and the Northern Spotted Owl was listed under the Endangered Species Act.[5] Many smaller sawmills closed. This was a loss of important infrastructure, particularly for small forest landowners who do not own their own mills.

Early Forest Management

Prior to European settlement, Native Americans actively managed forests and benefited from forest products. For many tribes, a key forest management tool was fire. Fires were regularly set to manage brush, improve deer and elk habitat, and cultivate plants for food and fiber.[4] Many groups used timber products — the red cedar was particularly important for constructing housing, clothing, baskets, tools, and canoes.

Working forests may be owned by a public agency or a private entity. Public agencies that own forests include the U.S. Forest Service and the Washington Department of Natural Resources. Private entities that own forests may either be industrial or non-industrial. Industrial forest owners are large commercial timber companies that manage forest products as a commodity. Non-industrial forest owners manage their forests for local benefits and income. They include individuals, tribes, and conservation groups.

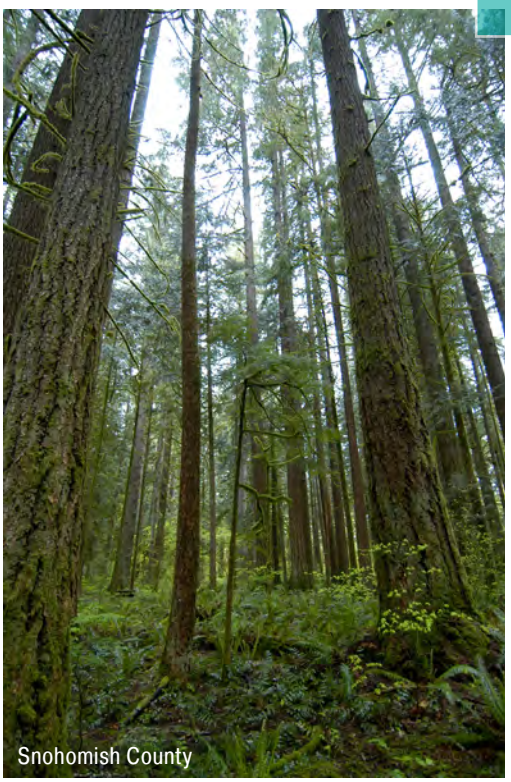
Forest managers must adhere to the Forest Practices Act and the Forest and Fish Law, which regulate activities within forests in Washington state to protect timber supply, soil, water, fish, and wildlife. As such, working forests in the region also provide important open space services in addition to timber production. They provide carbon storage, wildlife habitat, and hydrological benefits that help maintain aquatic systems.

Much of the working forestland in the region is owned by large timber companies that manage their land to maximize return to investors. This has resulted in some companies segregating and selling large tracts of their land. That land is generally converted to residential and commercial uses, permanently removing the forest from the landscape. Preserving working forests and protecting them from development is important for maintaining the local timber economy, providing raw materials, and maintaining fish and wildlife habitat.

Additionally, recent research is showing that forests can be managed to optimize carbon storage and groundwater recharge, while still generating revenue.[6] Harvesting over longer rotations, leaving a higher percentage of trees in the ground, and increasing stream buffer size are key management actions to achieve this. Where appropriate, employing these management practices can help improve the region's carbon storage capacity, drinking water supply, and wildlife habitat.

Mineral Lands

Mineral lands are natural resource lands under the Growth Management Act because of their role in economic productivity and development. They are typically identified as an overlay zone and are often found in working forests. Planning for the mining of aggregates can help avoid incompatible uses and ecological impacts while keeping this resource near construction sites, thus reducing construction costs and greenhouse gas emissions.



Snohomish County

Criteria. Working forests designated for forestry by counties and other working forests participating in a current use taxation program for forestry were included in the regional open space network. Lands owned by the US Forest Service and the state Department of Natural Resources and managed for timber harvest were also included.

2.1.4 Aquatic Systems

Sauk River, Snohomish County

Aquatic systems are lands and nearshore areas that contribute to aquatic habitat, provide clean drinking water for the region's residents, and mitigate against flood hazards. They also include areas that maintain shoreline processes, such as feeder bluffs, which contribute sediment to beaches along Puget Sound.

Aquatic systems are areas crucial for the recovery of salmon. Salmon are a keystone species in the region — they bring nutrients from the ocean when they return to spawn, which helps feed the rest of the ecosystem. From growing trees in the forests to bald eagles along shorelines to resident orcas in Puget Sound — much of the defining character of the region depends on healthy salmon stocks. Salmon also contribute to the economy, as both a source of food and a draw for tourism. For these reasons, salmon are not only an integral component to the identity and cultural heritage of the region's Native American tribes, but to the identity of most Puget Sound residents, making the conservation of aquatic systems a high priority.

Salmon require cool water temperatures and waterways that are connected to their floodplains with side channels that provide refuge for juvenile salmon as they make their way to the ocean. Riparian tree cover is also important

Estuaries

Estuaries are where rivers and streams meet Puget Sound — freshwater from the rivers mixes with salt water from the Sound. Historically the rivers fan out, forming broad areas of mudflats, wetlands, and small side-channels. These areas provide important habitat for young salmon as they migrate out to the ocean. They rest in estuaries where the mudflats and wetlands provide food to help them grow large enough to survive in the ocean. Loss of estuary habitat due to development is a large factor in the decline of salmon populations.

Nisqually River estuary
(US Fish and Wildlife Service)

for shading streams and keeping waters cool, as well as providing food for the stream invertebrates that feed juvenile salmon. Estuarine wetlands are also critical areas for juvenile salmon to further grow and develop before entering Puget Sound and the open ocean. On their way to the ocean, the juveniles swim through eelgrass beds in the Sound, which protects them from predators and provides invertebrates for them to eat.

As adults, salmon eat other fish, called forage fish (surf smelt, Pacific sand lance, and Pacific herring). To maintain strong forage fish populations for salmon, forage fish need intact beaches along the Sound for spawning. All of these habitat types are important to preserve in order to sustain salmon populations. These shorelines along Puget Sound are supported by "feeder bluffs" — bluffs that erode slowly over time and provide the sand that forms beaches. Salmon populations in turn support the southern resident killer whales (orcas), which feed on chinook salmon.

Aquatic systems also protect against flood hazards. Protecting floodplains helps to minimize damage to property from floods and provides a place for flood waters to go, relieving pressure on downstream areas where there may be development. In some cases, moving levees back away from the river can increase this floodplain storage, and at the same time enhance salmon habitat. As the region's climate changes, floods will likely become more frequent and more intense. Aquatic systems also include the lands that provide clean drinking water for the region's residents. Many water districts source water from rivers and creeks, which need healthy watersheds to supply clean water. Aquatic systems also provide important recreation opportunities for many residents in the region. Swimming, boating, and fishing are all popular activities.

Puyallup River, Pierce County

Criteria. Lands mapped by counties as part of both the 100- or 500-year floodplain were included, as well as aquatic corridors that were identified by watershed plans as crucial for salmon recovery (200-foot riparian areas along the corridors). Additionally, along marine shorelines, areas with feeder bluffs or those that support forage fish spawning were included. Lands that support drinking water supply were also included.

Due to the anticipated impacts of climate change on flood frequency, the 500-year floodplain is included as a proxy for the future 100-year floodplain.[7]

2.1.5 Regional Trails


Marymoor Connector Trail

Trails are a vital component to both the open space network and the transportation network. Regional trails are separated from automobile traffic and provide safe, comfortable, continuous nonmotorized connections across the region. A robust regional trail network will help support many of the region's goals and address many issues. Benefits of regional trails include:

The I-90 Mountains to Sound Greenway trail stretches about 100 miles from the Seattle waterfront to Central Washington. It is a regional trail network that includes hiking and biking trails used by pedestrians and bicyclists for recreation and commuting. The City of Bellevue is working on closing a 3.6-mile gap in the trail in the Factoria area of Bellevue.

- **Improved health and well-being.** Active transportation supports and improves both the physical and mental health of the region's residents. People with access to trails have more opportunities to participate in physical activity and experience stress reduction.
- **Growth management and improved accessibility.** A regional trail system connected to local walking and biking facilities supports compact development and provides alternatives to driving. As residents choose active transportation options, the region's greenhouse gas emissions will be reduced.
- **Economic development.** Regional trails support tourism and bring recreational spending into rural communities, supporting local businesses and rural economies. The quality of life that a regional trail network provides helps attract businesses and employees.

Beyond health, mobility, environmental, and economic benefits, trails provide connections between open spaces in the region. In addition to being important corridors for people, trails can serve as connectors for wildlife, helping to support regional biodiversity. The region has several regional trails traversing a variety of landscapes that are broadly used, including the Centennial Trail, Burke-Gilman Trail, Interurban Trail, and Foothills Trail. Ferries provide connections between trails across Puget Sound. However, there are many areas and destinations not currently served by a regional trail. This plan presents a vision for a future regional trail network that will connect people of all ages and abilities to regional destinations, including regional open spaces. There are also several areas within the existing network where key investments can help close gaps and make connections between trails safer and smoother.

Criteria. The core regional trail network is made up of trails or paths that serve all ages and abilities. They are also identified by the Regional Transportation Plan[8] and connect regional destinations across jurisdictions. Areas within the existing network where investments can close gaps are identified in Chapter 4.

2.1.6 Urban Open Space

Urban open space is the system of parks and green spaces across the region's cities, towns, and unincorporated urban growth area. Urban areas are where the region has directed the majority of residential, industrial, and commercial growth. Most urban land is designated for these uses but there is still an important need for open spaces as well. Urban open spaces provide health and recreation benefits and provide corridors for wildlife movement. In addition, the visual connection between urban residents and the more distant wild space (mountains, forests, water) is a defining characteristic of the region. Urban open space can provide key opportunities to enjoy such visual connections.

Open spaces in urban areas include parks, trails, critical areas, as well as areas characterized by healthy tree canopy cover. Public rights-of-way and publicly accessible private open space (e.g., plazas) also provide some open space benefits. For most residents in the region, these community amenities are their primary, most frequent interaction with open space. In fact, 43 percent of outdoor recreation time in Washington State is spent at local parks.[9] The top five activities in parks are walking, running/jogging, wildlife viewing/photography, bicycle riding, and playground use.

Sustaining the region's existing park systems and protecting remaining high value open spaces in urban areas will be crucial to maintaining the region's quality of life. Investing in urban open spaces also supports the Regional Growth Strategy by improving the livability and attractiveness of compact urban areas.

However, residents' ability to access these open spaces varies across the region. This plan presents a preliminary analysis to assess the level of access the region's urban residents have to nearby open space and to estimate urban open space needs (see Chapter 5). This analysis also explores demographic indicators, including race and income, as they relate to open space access.

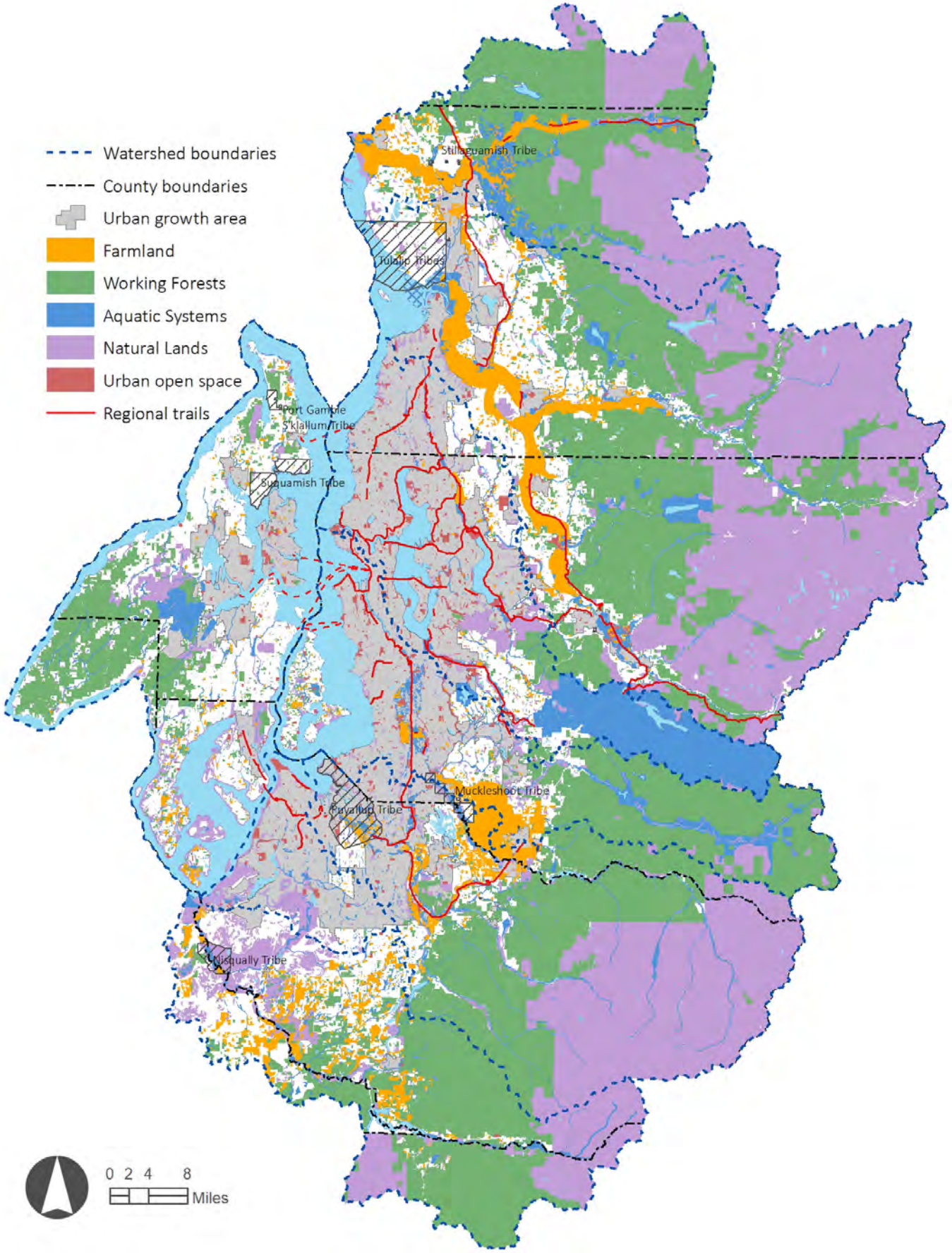
Criteria. Parks and designated open spaces identified in city, town, and county comprehensive plans that are within the urban growth area are included. Other categories of open space that overlap with the urban growth area were not counted for this category, but these areas may potentially provide recreational opportunities, as well.

2.2 The Regional Open Space Network 1.0

The regional open space network as mapped according to the above criteria contains approximately 3 million acres of land (Figure 2.1). This map shows the general areas where essential open space services are being provided and is not intended to delineate exact locations. Resolution and accuracy of each of the map layers are limited by the quality, resolution, and age of the underlying

Figure 2.1

The Regional Open Space Network



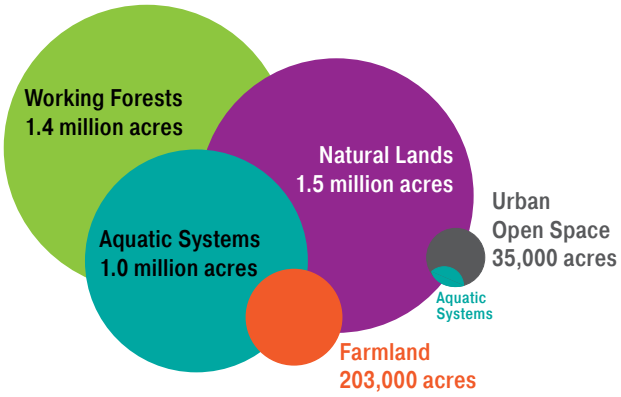
datasets. In some locations, land use and land cover may have changed. These maps do, however, provide a guide for focusing conservation efforts. Individual projects will need to evaluate conditions on the ground.

Approximately 1.42 million acres in the network are in working forests. Farmlands make up another 203,000 acres. Aquatic systems cover 1.01 million acres and natural lands cover 1.52 million acres. There is considerable overlap among these acreages, as shown in Figure 2.2. This is because many lands provide multiple services and therefore fit into multiple categories. For example, aquatic systems flow through both working forests and farmland. Wildlife make use of these areas as well.

The network was mapped within each major watershed in the region. The mapping is based on watersheds because many ecological processes occur on a watershed scale. Ensuring that each watershed has a robust and diverse network of open spaces is necessary to sustaining the health of each watershed and thus the region as a whole. Table 2.1 shows roughly how much land is in each category across the major watersheds in the region. These open spaces help the region be resilient to climate change by absorbing flood waters, sustaining watershed processes, keeping rivers and streams cool, providing migration corridors for wildlife, and supplying food to a growing number of residents. Farming will continue to be viable in the region as other regions in the country become too dry.

Figure 2.2

Approximate Acreages of Each Category in the Regional Open Space Network With Overlap Taken Into Consideration



Source: PSRC, 2018.


Point Defiance Park, City of Tacoma

Table 2.1

Total Acres of Open Space by Category Including Overlapping Areas

	Farmland	Working Forests	Aquatic Systems	Natural Lands	Urban Open Space	Trails (miles)
5 — Stillaguamish	33,300	324,500	450,800	210,800	260	24
7 — Snohomish	67,700	381,600	134,700	582,800	3,330	83
8 — Cedar/Sammamish	4,100	17,800	105,600	47,800	15,340	130
9 — Green/Duwamish	22,100	146,200	166,300	40,400	7,100	46
10 — Puyallup/White	27,000	226,200	55,500	336,600	3,100	37
11 — Nisqually	39,500	212,700	63,900	216,700	190	4
12 — Chambers/Clover	300	270	4,900	25,700	3,160	9
15 — Kitsap	9,100	111,600	28,300	63,900	3,030	6
Total[a]	**202,900**	**1,420,700**	**1,010,100**	**1,524,800**	**35,500**	**339**
Regional open space network total acreage[b]						**3,027,000**

Source: PSRC, 2018.

a. These acreages include overlaps with other categories, so sum total is more than total network acreage.

b. Total area covered by the network, accounting for any overlaps.

[1] King County. 2018. Local Food Initiative. Available online at: https://www.kingcounty.gov/elected/executive/constantine/initiatives/local-food-initiative.aspx.

[2] USDA. 2012. Census of Agriculture – County Data. USDA, National Agriculture Statistics Service. https://www.agcensus.usda.gov/.

[3] Not all land designated for agriculture is farmed and in some cases has incompatible uses. As counties update land designations, areas identified for farmland in the regional open space network will be updated.

[4] Center for the Study of the Pacific Northwest. Evergreen State: Exploring the History of Washington's Forests. Available online at: http://www.washington.edu/uwired/outreach/cspn/Website/Classroom%20Materials/Curriculum%20Packets/Evergreen%20State/Evergreen%20Main.html.

[5] Idib.

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[8] PSRC. Regional Transportation Plan. https://www.psrc.org/our-work/rtp.

[9] Briceno, T., Schundler, G. 2015. Economic Analysis of Outdoor Recreation in Washington State. Earth Economics, Tacoma, WA.

3 Protected Open Space

What open spaces are already protected and how?

Manchester State Park, Kitsap County

3.1 How is Open Space Protected and Preserved?

Protection means to keep open spaces safe from damage, harm, or destruction. It often involves legal restrictions that limit activities on the land. Acquiring land is one form of open space protection. Preservation means to maintain open spaces in their existing or original state. Conservation refers to a broad set of actions and efforts to sustain the ecological, economic, recreational, and aesthetic vitality of an area.

Many federal, tribal, state, regional, and local groups are working to protect and preserve open spaces. Federal law requires protection of water and the habitat of endangered species. State law requires protection of critical areas and shorelines and the management of stormwater that often results in open space protection. State, regional and county-wide policies have helped reduce sprawling development into rural lands by focusing growth in cities and centers. County plans have designated resource lands. Local policies and regulations support open space protection. Conservation nonprofit organizations are acquiring land and easements and developing conservation programs. Farms and working forests are being protected through the purchase and transfer of development rights. Counties and cities are acquiring important habitat and recreation areas. Conservation districts across the region are working with private landowners interested in managing their land for long term environmental sustainability. In addition to the conservation practices described in this chapter, conservation tools are listed in Chapter 6 and Appendix B, Conservation Toolbox.

3.1.1 Protection Through Policies and Regulations

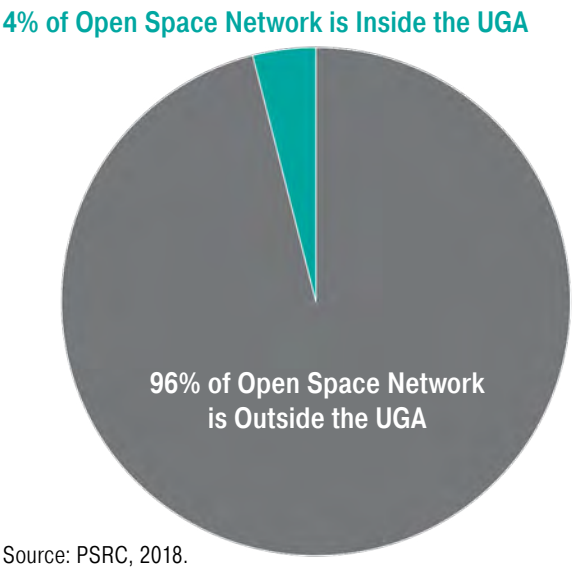
Policies and regulations preserve open space by:

1. Focusing development in desired and appropriate locations and minimizing sprawl.
2. Advancing practices that minimize impacts and even restore functions where development is allowed.
3. Promoting traditional economic activity on working lands.

Growth Management Act

The state Growth Management Act requires comprehensive planning for jurisdictions in the region.[1] Goals of the Growth Management Act include reducing sprawl by concentrating growth in urban areas and protecting natural resources and open spaces. Uninhibited outward growth is a major threat to open spaces. Under the Growth Management Act, cities and counties designate urban growth areas (UGAs), focusing growth within urban areas while limiting growth outside of these areas. The UGA boundary in the central Puget Sound region has helped to preserve open spaces that are outside of the UGA. Over the last 20 years, canopy cover loss and farmland loss outside of the UGA has slowed (Table 3.1). Of the lands identified in the regional open space network, 96 percent are outside of the UGA (Figure 3.1).

Figure 3.1
Regional Open Space Network in Relation to the Urban Growth Area (UGA)



Source: PSRC, 2018.

Under the Growth Management Act, counties must also designate natural resource lands — including farmland and working forests — and identify steps to preserve them.

Table 3.1
Tree Canopy Cover and Cultivated Land Cover Across the Region[a]

Tree Cover	Rural[b]	Urban
1996	54%	26%
2001	54%	25%
2006	53%	23%
2011	52%	22%

Cultivated Land Cover (farms)	Rural[b]	Urban
1996	11.4%	2.6%
2001	11.6%	2.6%
2006	11.5%	2.3%
2011	11.5%	2.1%

[a] Data from National Oceanic and Atmospheric Administration Land Cover Change Analysis Program.
[b] Excludes working lands, national forests, national parks, state parks, and forests.

Regional Plans

The region's long-range plan for sustainable development, VISION 2040, includes a Regional Growth Strategy that directs growth into urban areas, while also curbing sprawl that would otherwise impact rural areas, resource lands, and open space. Consistent with the Growth Management Act, the Regional Growth Strategy in VISION 2040 calls for rural lands to remain rural and working lands to remain working.[2] VISION 2040 also includes multicounty planning policies that emphasize the importance of protecting natural systems and functions, habitat, and open space networks, and ensuring that all residents in the region, regardless of socio-economic status, live in a healthy environment. VISION 2040 also calls for several open-space-related actions, including for PSRC to "develop a regional green space strategy."

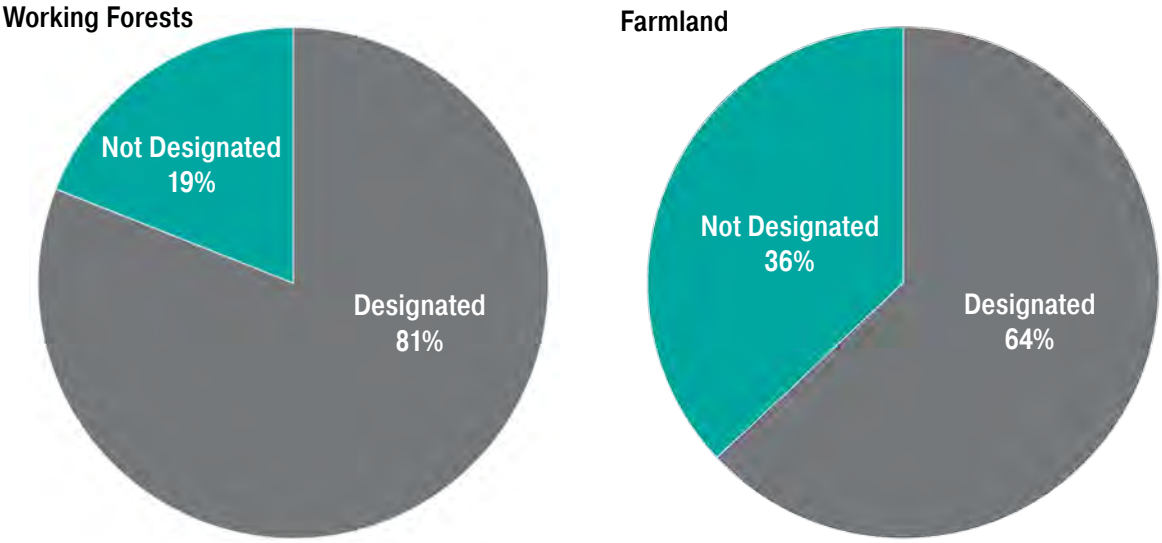
Comprehensive Plans

Under the Growth Management Act, cities and counties develop comprehensive plans that outline their goals, policies, and implementation strategies, consistent with VISION 2040 and countywide policies. County plans include a rural and working lands element. Policies established in these plans help protect open space. Cities plan for a share of urban growth, as determined through countywide growth targets, thus limiting new development from occurring in rural areas. Cities also designate open space lands, plan for parks within their jurisdiction, and plan for the protection of critical areas.

Counties set policies for rural development and working lands, including farmland and working forests. These policies can support farming and forestry economies and prevent the fragmentation of resource lands. Polices that support farmland include: 1) designating agricultural zones, 2) limiting non-agricultural uses within those zones, 3) establishing large minimum lot sizes in those zones to prevent fragmentation of resources, and 4) maintaining large blocks of contiguous farmland.[3]

Figure 3.2

Proportion of Working Lands in the Regional Open Space Network That are Designated as Such in County Comprehensive Plans



Source: PSRC, 2018.

Currently, 64 percent of farmland identified in the regional open space network is designated with agricultural zoning (Figure 3.2). Eighty-one percent of working forests in the network are designated for forestry. While future land use designations do not tend to change dramatically from year to year, they do change over time. Further, to be most protective, agriculture zoning is recommended to have minimum lot sizes of at least 40 acres, which does not exist in the region.[4] Consequently, land use designations alone are not considered long-term open space protection.

Zoning and Development Regulations

Local plans are implemented by zoning. Zoning determines the allowed uses and the intensity of development. Many cities use zoning to protect open space by designating such areas for parks or very low density uses. Development regulations affect the level of impact on the natural environment and help protect open space services by shaping how development occurs and by encouraging development with greater environmental compatibility. Regulations that require low impact development techniques, limit tree clearing, or limit impervious surfaces all protect watershed processes and help to preserve the environmental character of an area. Regulations that support urban development can play an important role by encouraging development that meets modern environmental and open space standards, uses urban land efficiently, and provides an alternative to sprawl in rural areas.

Critical Areas Regulations and Shoreline Master Programs

Jurisdictions are required to adopt critical areas regulations under the Growth Management Act. Critical areas include wetlands, critical aquifer recharge areas, fish and wildlife habitat conservation areas, frequently flooded areas, and geologically hazardous areas. Policies and development regulations to protect critical areas must be developed with the best available science. These regulations have a key role in protecting open space in the region as they generally prevent development within riparian areas, wetlands, wetland buffers and lands with geologic or flood hazards. Critical areas regulations alone do not restore damage done in the past, and even with regulations, impacts may still occur.

The Shoreline Management Act was enacted by the state to manage and protect shorelines by regulating development in the shoreline area. These shorelines include Puget Sound, rivers, streams, and lakes above a certain size, associated wetlands, and land 200 feet landward of the ordinary high water mark of these shorelines. Under the Shoreline Management Act, counties and cities manage shoreline use to protect natural resources for future generations, provide for public access to shoreline areas, and plan for water-dependent uses.[5] Under updated state guidelines, shoreline master programs are required to ensure no net loss of ecological function of the shoreline.

While both critical areas ordinances and shoreline master programs help to reduce development in open spaces, regulations vary among jurisdictions, as does the level of enforcement. Even where large vegetated buffers are enforced around streams and rivers, legacy stormwater systems often bypass these buffers, dumping stormwater directly into waterbodies.

Stormwater Regulations

Under the Clean Water Act, local governments are required to manage stormwater quality and flow through the federal National Pollutant Discharge Elimination System (NPDES) Storm Water Program, which is administered by the Department of Ecology in Washington. Ecology issues municipal stormwater permits to cities and counties that allow municipalities to release stormwater into surface waters (streams, rivers, lakes). Municipalities must have stormwater regulations for new developments and redevelopment that include requiring on-site stormwater management practices that infiltrate, disperse, and retain stormwater runoff on site. While some stormwater management techniques include traditional forms of pipes and vaults, newer regulations encourage the use of natural drainage practices, which can lead to greater vegetation protection. Stormwater regulations have become more protective of aquatic systems over time, but unfortunately, legacy stormwater systems will continue to be a source of pollutants until the time of redevelopment.

Forest Practices Rules

The Forest Practices Act was adopted by the Washington State Legislature in 1974 and regulates forest practices on private, state, and local government lands. The act is implemented through the Forest Practices Rules, which were updated in the early 2000s to include more stringent environmental standards. These rules are designed to protect open space services including water quality and fish and wildlife habitat on working forest lands. They include requirements to maintain riparian and wetland buffers and establish minimum rotation durations for harvest. The rules are under continuous review through adaptive management. These rules allow working forests to continue to be economically viable while also maintaining key open space services.

3.1.2 Protection Through Fee Ownership or Conservation Easement

Approximately 2.13 million acres of open space in the region are owned outright by public, tribal, or conservation organizations. Owners include federal agencies, state agencies, cities, counties, tribes, and conservation nonprofits. Many of these lands came into public ownership through the formation of national forests, national parks, land grants to the states and other similar historic actions. More recently, public and tribal agencies, as well as conservation nonprofits, have been protecting open space through land acquisition and conservation easements.

While the most effective form of protection, land acquisition is also the most expensive open space protection tool — land costs are a significant barrier and ongoing maintenance is an additional cost (see Table 3-2, Chapter 6, and the Conservation Toolbox, Appendix B).

Conservation easements can provide an alternative to land acquisition. A conservation easement is the purchasing of a portion of the property rights of a parcel of land from a willing landowner, while leaving most of the property rights with the landowner. These are legally binding agreements and stay with the land in perpetuity, even when the land is sold or passed on to heirs. Conservation easements typically limit the types of uses and development that can occur on a portion or all of the property. For example, a county or city may purchase the ability for the underlying property owner to clear vegetation on the property (and thus protect the canopy cover).

Table 3.2

Acquisition Tools*

Funding Sources	Acquisition Programs and Mechanisms
Conservation futures	Fee simple acquisition
Real estate excise taxes	Purchase of development rights
Parks levies	Transfer of Development Rights
State and federal grants	Coordinated agency funding
Open space bonds	Coordination with nonprofits
Impact investing (financing)	Partnerships with military bases and special districts
	Community Forests

*More information on conservation tools is provided in Chapter 6 and Appendix B.
Source: PSRC, 2018.

A common easement on farmland and working forests is the removal of the right to subdivide or construct new buildings. Selling development rights — and granting a conservation easement — allows the farmer or forester to generate immediate revenue that they can invest back into their land while also removing the development pressure on the land. The landowner can continue to own, reside on and use their land and the property is permanently protected from new development. The land can still provide the economic benefit of a farm or working forest by generating revenue and creating jobs. Further, a farmer or forester is more likely to be able to afford to buy the land in the future because removing the development rights keeps the land cost lower. All four counties have programs to purchase development rights and/or conservation easements from working lands.

An alternative to county purchase of development rights is transferring them to a developer who can use them to increase the development potential on another parcel where more intense development is encouraged. It allows private development to pay the cost of conserving farm and forestland. This is accomplished through the regional Transfer of Development Rights (TDR) program. Chapter 6 and the Conservation Toolbox (Appendix B) describes TDR in further detail.

Regional Transfer of Development Rights

For the past decade Forterra, a regional sustainability nonprofit organization, has led a campaign to establish and incentivize a transfer of development rights (TDR) marketplace at the regional scale. An example is the Landscape Conservation and Local Infrastructure Program ("LCLIP", RCW 39.108), state legislation that provides cities in King, Pierce, and Snohomish counties access to infrastructure financing in exchange for accepting TDR from regional farms and forests. Since 2013, Seattle's LCLIP program has generated closed and pending sales on 800 development rights representing over 60,000 acres of conserved forests and farms. Over the next 20 years Seattle is estimated to receive in excess of $27 million for infrastructure to support residents in the growing South Lake Union and Downtown neighborhoods.

Conservation easements can target specific types of open space services, such as water quality or wildlife corridors. For example, an easement on a working forest could require longer harvest rotations or a larger percent of trees left in the ground — management actions that allow the forest to store more carbon, better recharge the groundwater, and provide more habitat for wildlife.

3.1.3 Incentive Programs and Stewardship Programs

In many cases, leaving open space lands in private ownership is more beneficial than purchasing them. Many property owners care deeply about preserving open spaces on their land. Incentives and stewardship programs help with financial and resource challenges that landowners face. Current Use Taxation programs help reduce the financial burden on farmers, foresters, and other open space landowners, reducing the pressure to sell the land. With Current Use Taxation programs, counties can tax "open space" (natural areas), agriculture, and timber parcels on an assessment of their current use, instead of their highest and best use. Across the region, there are 20,300 acres of land enrolled in Current Use Taxation programs. Of these acres, 5,500 are in agriculture, 8,500 in timber, and 6,300 in open space. While Current Use Taxation programs support current uses that help preserve open space, they do not restrict the future development of these lands.

Puyallup Valley farmland

Pierce County, Pierce Conservation District, Forterra, PCC Farmland Trust, and other partners are working together to purchase conservation easements from farmers in the Puyallup River valley to protect their farms from development. In the past three years, they have conserved almost 600 acres of farmland. Recently the partnership received an $8 million grant from the Natural Resources Conservation Service's Regional Conservation Partnership Program to fund additional easements on farmland in the valley, which will leverage an additional $8 million in partnership funds. The goal is to place permanent conservation easements on 1,000 acres of farmland. A portion of the funds will be used for conservation practices on the farms to help improve water quality in local streams and restore habitat for fish and wildlife.

Taking this a step further is the Public Benefits Rating System (PBRS), which allows local governments to more clearly define enrollment criteria and to target specific open space services. With a PBRS program, the open space benefits provided by a property are scored using a point system. The total points earned by the property are commensurate with the reduction in assessed property value. A PBRS provides for the incentive a property owner receives to be in proportion to the open space benefits their property is providing. Currently King, Kitsap, and Pierce counties have PBRS programs in place. Because participation by land owners is voluntary, both Current Use Taxation and PBRS provide temporary preservation of open spaces.

Shoreline Stewardship

Kitsap County works with willing shoreline property owners to remove bulkheads, which restores sediment supplies to priority nearshore areas. The county does this by building relationships and discussing property and structure safety, habitat conditions, and potential restoration and enhancement actions.

Conservation districts, counties, resource agencies, and conservation nonprofit organizations in the region also help protect open spaces by working with private land owners on land management, resource needs, and restoration. These organizations provide assistance in farm and forest planning, habitat improvement, environmental education, and obtaining resources to implement land management practices.

3.2 Long Term Protected Open Space in the Region

Long term protection is defined here as lands that are in public, tribal, or nonprofit ownership. To estimate the acreage of lands in long term protection, assessor's data from each of the counties was used along with data from individual agencies on their administrative boundaries.[6]

At the same time, it is also recognized that public ownership does not necessarily guarantee the protection of open spaces. In some limited cases, management or planning goals may result in losses of open spaces in the future. This may include land owned by school districts that will eventually be developed into schools or land owned by public agencies that are not focused on open space (such as departments of transportation, housing, or corrections). Overall, these lands are a small fraction of public lands.

Federal Lands

The federal government is the largest open space owner in the region. Approximately 1.16 million acres of regional open space are held by several different U.S. departments and agencies. The majority of this federal land is part of the Mount Baker — Snoqualmie National Forest, managed by the US Forest Service. The US Forest Service manages this and the Gifford — Pinchot National Forest in the southern part of the region according to the Northwest Forest Plan, which has goals to protect and restore critical habitat and watershed processes. The forest also contains seven Wilderness Areas stewarded by the US Forest Service — the Glacier Peak Wilderness, Boulder River

Wild Sky Wilderness Area, Snohomish County

Wilderness, Wild Sky Wilderness, Henry M. Jackson Wilderness, Alpine Lakes Wilderness, Norse Peak Wilderness, and the Clearwater Wilderness. The U.S. Forest Service, under the guidance of the Wilderness Act, manages these areas to have minimal human influence, which includes a ban on motorized use, timber harvest, and new mining claims. As such, designated Wilderness Areas receive the highest level of wildland protection at the federal level.[7] These lands are congressionally designated, and are likely not subject to de-designation by the executive branch.

Mount Rainier National Park in the southeastern portion of the region covers 240,000 acres and is managed by the National Park Service. The park protects Mount Rainier and surrounding old growth forests and alpine meadows. Mount Rainier glaciers feed six different river systems including the Puyallup-White and the Nisqually Rivers.

The U.S. Fish and Wildlife Service manages one wildlife refuge in the region — the Billy Frank Jr. Nisqually National Wildlife Refuge located at the Nisqually River estuary in Pierce and Thurston counties. The goal of the National Wildlife Refuge system is to conserve fish, wildlife, and plants. The estuary, previously impacted by diking, fill, dredging, and development, underwent restoration in 2009 that reconnected 762 acres of wetlands and habitat to tidal influence.

Habitat and natural areas are also protected by military installations that occur throughout the region. These include Joint Base Lewis-McChord, Naval Base Kitsap, and Naval Radio Station Jim Creek. Joint Base Lewis-McChord contains much of the remaining intact prairie habitat in the region, which supports three species listed under the Endangered Species Act — the streaked horn

Endangered prairie habitat on Joint Base Lewis-McChord (US Army)

lark, Mazama pocket gopher, and Taylor's checkerspot. Joint Base Lewis-McChord, concerned that the listing of any of these species could impact its training operations, has enacted an Army Compatible Use Buffer program in partnership with The Nature Conservancy, the Washington Department of Natural Resources, and the Washington Department of Fish and Wildlife. The program works to restore and maintain habitat onsite and restore and acquire intact habitat offsite. In 2013, Joint Base Lewis-McChord became the first Sentinel Landscape through the Sentinel Landscape Partnership, a collaboration among the U.S. departments of Agriculture, Defense, and Interior. Sentinel Landscapes are working and natural lands that are important for defense. The partnership works to promote conservation of agriculture and natural habitat surrounding military installations. The program works with surrounding landowners to implement conservation practices to restore Endangered Species Act-listed species populations.

Naval Base Kitsap has installations in Kitsap and Jefferson counties. Naval Base Kitsap has preserved open space through the Readiness and Environmental Protection Initiative, which works to preserve compatible land uses and high-quality habitat near military installations.[8,9] These conservation actions include the purchase of easements from working forests and undeveloped shorelines. The base itself contains 6,090 acres of forest, primarily at Bangor, and the Navy actively manages these lands according to a forest management plan.

Naval Radio Station Jim Creek in Snohomish County provides radio transmissions to the Navy's Pacific submarine fleet. Between 1991 and 1993, the Legacy Resource Management Program provided funds for the Navy to purchase 225 acres of additional low elevation old growth Sitka Spruce forest (the only such forest remaining in the Puget Sound lowlands).[10] It established the Jim Creek Wilderness Area, which provides recreational opportunities for military personnel and their families while preserving the natural area.

State Lands

Washington state owns and manages approximately 356,000 acres of open space in the region, including 24 state parks in the region. State parks cover a variety of open spaces including mountains, forests, rivers, lakes, and marine shorelines. The Department of Natural Resources manages state forest and trust lands, state-owned aquatic lands, and state natural areas. State trust lands are harvested for timber and biomass and in some cases leased for other activities. Revenues generated on these lands support K-12 schools, county services, prisons, and universities. The state forests in the region also support recreation, including hiking, mountain biking, camping, and horseback riding. The Department of Natural Resources also manages Natural Area Preserves and Natural Resource Conservation Areas that protect important ecosystems and habitat in the state and are generally not harvested for timber. The region contains 11 of these state natural areas.

The Washington Department of Fish and Wildlife manages wildlife areas throughout the region that protect fish and wildlife. The Snoqualmie Wildlife Area contains six units in Snohomish and King counties that are located along the Snohomish and Snoqualmie rivers. The South Puget Sound Wildlife Area contains two units in Kitsap County and two units in Pierce County. The Skagit Wildlife Area contains one unit in Snohomish County at the mouth of the Stillaguamish River.

Faye-Bainbridge State Park,
City of Bainbridge Island

Other state agencies whose primary functions are not related to open space do still protect some open space in the region. The Washington State Department of Transportation has developed advanced wetland mitigation sites, including one in the region near Renton.

The campuses of several universities and colleges in the region also contain open space, many of which are located in urban areas. Additionally, the University of Washington owns and operates working forests such as Charles Lathrop Pack Experimental and Demonstration Forest in Pierce County.

County Lands

County-owned open space in the region covers approximately 69,700 acres. A large portion of this open space is county and regional parks and trails, which include a large variety of open space services. Many parks include passive recreation opportunities, such as trails and wildlife viewing. Others have sports fields and playgrounds for active recreation. Many county parks play an important role as regional parks that include large areas of land and can serve more residents and from greater distances than local parks. County programs have also protected other open spaces including fish and wildlife habitat, flood hazard areas, and working lands.

Kayak Point County Park,
Snohomish County

Municipal Lands

Cities manage many of the park systems in the region, which provide nearby access to open space for the region's residents and include both passive and active recreational opportunities. There are approximately 35,000 acres of parkland and recreation green spaces owned by cities, towns, and park districts. In addition to owning and maintaining these lands, many municipalities provide programming that enhances residents' experiences.

Cities in the region have also protected other open space. A major driver of municipal open space protection has been the need to protect drinking water sources. The cities of Everett, Seattle, Bremerton and Tacoma have protected 136,000 acres of lands important for supplying water to their residents. The Spada and Champlain Reservoirs along the Sultan River provide drinking water for 75 percent of Snohomish County residents.[11] The City of Everett and the Snohomish Public Utility District own the lands directly around the reservoirs and manage these lands to maintain water quality and wildlife habitat. The City of Seattle owns the upper Cedar River watershed and the South Fork Tolt River Watershed which supply drinking water to 1.4 million people in the Seattle area. Seattle Public Utilities manages these watersheds to protect water quality and quantity and to protect and restore fish and wildlife habitat.[12] The City of Bremerton sources much of its drinking water from the headwaters of the Union River, which the city owns and manages to preserve a clean drinking water supply.[13] The City of Tacoma owns 10 percent of the Green River watershed, the main source of drinking water for 300,000 people in Pierce and King counties.[14] Tacoma Water has established agreements with the remaining landowners in the watershed to ensure protection of the drinking water supply.

Marina Park Pavilion, City of Kirkland

Tribal Lands

Tribes have stewarded the lands in the region for thousands of years and their identities and cultures are deeply interwoven with the region's natural resources. Today, as co-managers of natural resources in the area, tribes provide leadership in protecting and restoring open spaces. Approximately 126,000 acres of open space are protected by tribes. Many of these resources are held in trust by the federal government through the Department of Interior (those lands are counted here and not as federal land). By placing lands into trust, tribes strengthen their ability to protect and conserve their lands. The Stillaguamish Tribe of Indians has developed an acquisition plan to protect important aquatic habitat along the Stillaguamish River and has protected 531 acres to date through land and easement purchases.[15] The Tulalip Tribes also work to preserve and restore fish and wildlife habitat, as well as habitat for culturally important plants. They recently completed the restoration of the Qwuloolt Estuary, near the mouth of the Snohomish River, returning tidal flows to the wetland complex that will support juvenile salmon as they migrate out to sea. The Muckleshoot Indian Tribe has recently preserved 96,307 acres of working forest land along the White River. The Tribe will manage the Tomanamus Forest for long-term sustainable timber harvest and the preservation of fish and wildlife habitat and other culturally important resources.[16] The Suquamish Tribe, located on the Kitsap Peninsula, completed a restoration of the Chico Creek estuary in 2014. This project removed a culvert and reconnected stream and marsh habitats. Many other conservation projects have been completed by tribes throughout the region.

Qwuloolt Estuary (The Tulalip Tribes)

Conservation Nonprofits

Many nonprofit conservation organizations are working to conserve land and implement conservation programs in the region. Land trusts work with private funding from donors and foundations to acquire land and conservation easements. Combined, these organizations own approximately

22,000 acres of open space. However, hundreds of thousands of additional acres of open space have been secured by these organizations and passed on to cities and counties for holding conservation easements or long-term ownership and maintenance. Land trusts in the central Puget Sound region include:

- Bainbridge Island Land Trust
- Center for Natural Lands Management
- The Conservation Fund
- Forterra
- Great Peninsula Conservancy
- Nisqually Land Trust
- PCC Farmland Trust
- South of the Sound Community Farmland Trust
- The Nature Conservancy of Washington
- The Trust for Public Land
- Vashon-Maury Island Land Trust

Washington Association of Land Trusts

The Washington Association of Land Trusts is a collective of 28 nonprofit land conservation organizations across the state of Washington. Its programs help to conserve forests, farmland, shorelines and other open spaces. The Association works to strengthen the land trust community in Washington through networking, training, and collaborative initiatives.

Conservation Easements

Conservation easements protect a large amount of land in the region. Over 17,750 acres of farmland and 138,200 acres of working forests are currently protected through conservation easements.[17] The majority of farmland easements were purchased through King County's Farmland Preservation Program and funded by bonds in the 1980s.[18] Approximately 11,000 acres of other types of open space are protected through conservation easements. These easements are primarily held by counties, Washington state, and land trusts.

Nisqually Community Forest
(Nisqually Land Trust)

3.3 Regional Open Space Network

About 70 percent of the regional open space network is in some form of long-term protection (Figure 3.3). Long-term protection refers to land that has a conservation easement or that is owned outright by a public agency, tribe, or conservation nonprofit. Many of the open space network lands are owned outright by the federal or state government, while counties and cities also hold a considerable share of open space lands and conservation easements (Figure 3.4). Natural lands in the region are primarily protected through ownership, largely due to National Forests, National Parks, and State Parks and Conservation Areas.

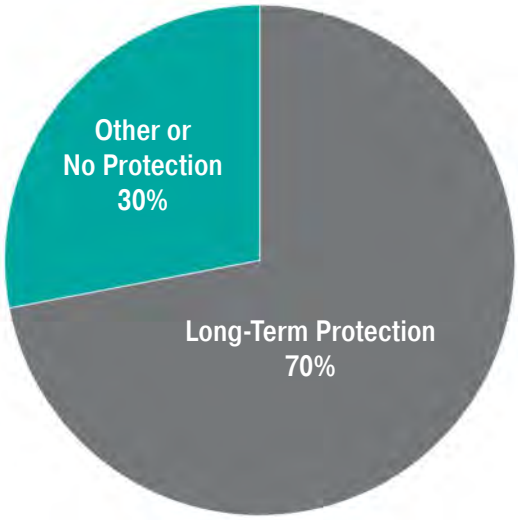
Long-term protection of farmland and working forests is primarily through easements (such as a purchase or transfer of development rights), which allow the lands to remain in the hands of farmers and foresters who can continue to derive economic benefit from the land. Exceptions are working forests that are not privately owned, including state trust lands, which are owned and managed by the state Department of Natural Resources, National Forest lands, which are owned and managed by the U.S. Forest Service, forests owned and managed by tribes, and community forests (such as the Nisqually Community Forest).

Long-term protection for aquatic systems in the network takes the form of both outright ownership and conservation easements. In cases where aquatic systems overlap with farmlands or working forests, protection tends to be through easements. In other locations both tools are used, depending on site-specific needs.

Figure 3.5 shows where these protected open spaces are located in the region. The remaining 30 percent of the network that is not in long-term protection has either some protection through policy and zoning that is less permanent, or it has no protection.

Figure 3.3

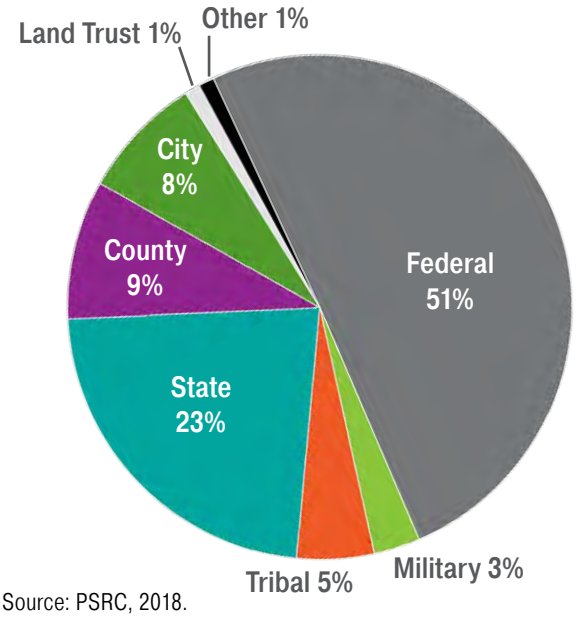
Proportion of the Regional Open Space Network in Long-Term Protection



Source: PSRC, 2018.

Figure 3.4

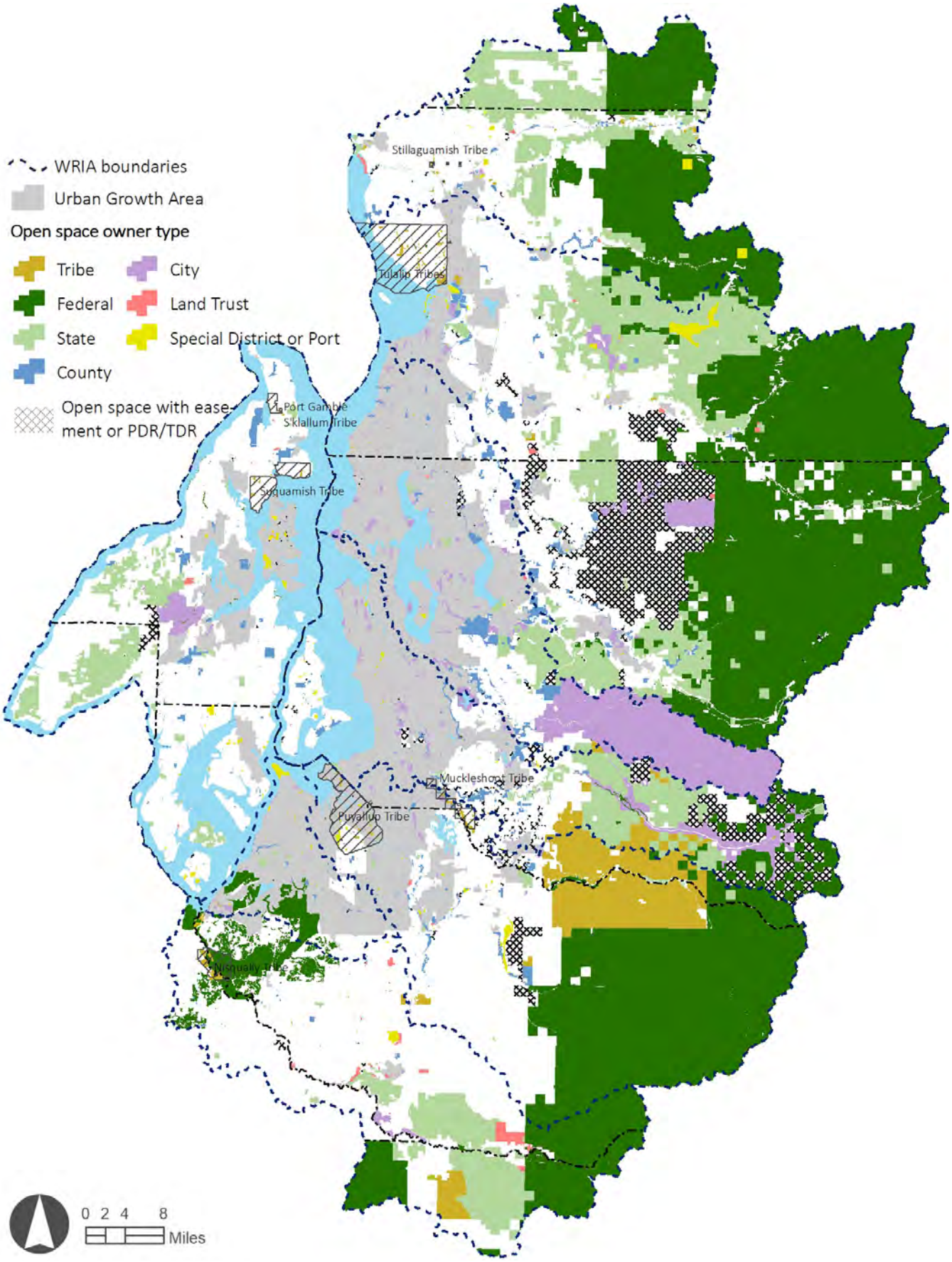
Categories of Open Space Ownership



Source: PSRC, 2018.

Figure 3.5

Regional Open Space Network Lands in Long-Term Protection



[1] MSRC. 2017. Growth Management Act. Available online at: http://mrsc.org.

[2] Puget Sound Regional Council. 2008. VISION 2040. Adopted April 24, 2008. https://www.psrc.org/vision-2040-documents.

[3] American Farmland Trust, 2012. Losing Ground: Farmland Protection in the Puget Sound Region. Seattle, Washington.

[4] Ibid.

[5] Washington Department of Ecology (WDOE). 2017. Shoreline Master Programs. Available online at: http://www.ecy.wa.gov/programs/sea/shorelines/smp/index.html.

[6] Public ownership does not necessarily guarantee protection of open space. Parcel data provides information on the land owner, but not the land management purpose.

[7] Snohomish County Surface Water Management, King County Snoqualmie Watershed Forum Staff, and Tulalip Tribes Natural Resources Department, 2015. Snohomish Basin Protection Plan. Snohomish Basin Salmon Recovery Forum. Everett, WA. https://snohomishcountywa.gov/Archive/ViewFile/Item/4402.

[8] Kitsap County. 2016. Comprehensive Plan. http://compplan.kitsapgov.com/Documents/KIIJLUS_Full.pdf.

[9] NatureServe. Conserving Biodiversity on Military Lands. http://www.dodbiodiversity.org/case_studies/ch_10_2.html.

[10] Jim Creek Old Growth Trail. https://jimcreek.navylifepnw.com/modules/media/?do=download&id=89e5c5e8-a4fc-4bb9-80bc-60c2c752b-6cf.

[11] City of Everett Public Works. Where does your water come from? https://everettwa.gov/DocumentCenter/Home/View/824.

[12] City of Seattle. “Our Watersheds.” Seattle Public Utilities. https://www.seattle.gov/util/EnvironmentConservation/OurWatersheds/index.htm.

[13] City of Bremerton. “Factsheet: Watershed Protection.” http://www.ci.bremerton.wa.us/DocumentCenter/View/4206/Watershed-Protection-PDF

[14] Tacoma Public Utilities. “Green River Watershed.” https://www.mytpu.org/tacomawater/water-source/green-river-watershed/.

[15] Stillaguamish Tribe of Indians. Restoration Projects. http://www.stillaguamish.com/restoration.asp.

[16] Seattle Times. Muckleshoots buy huge forestland in 3 counties. http://www.seattletimes.com/business/muckleshoots-buy-huge-forestland-in-3-counties/.

[17] Forterra, 2015, Public Lands Database; National Conservation Easement Database, 2016; County assessor rolls, 2017.

[18] King County, 2018. Farmland Preservation Program. Available online at: https://www.kingcounty.gov/depts/dnrp/wlr/sections-programs/rural-regional-services-section/agriculture-program/farmland-preservation-program.aspx.

4 Conservation Needs

What open spaces are threatened?

4.1 Threats and Challenges Facing Open Space

As important as open space is to the region, there are many threats to the services it provides. These threats vary by type of open space and location within the network. Understanding these threats and challenges is important for determining the best strategies for conserving open space and sustaining the regional open space network for future generations. Below, challenges for each type of open space are described.

4.1.1 Farmland

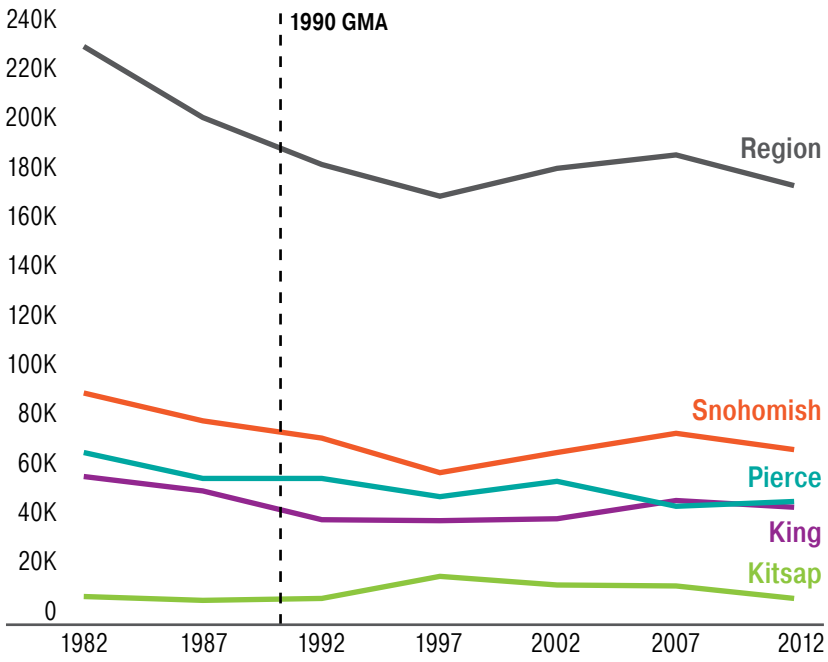
Since 1950, the region has lost 60 percent of its farmland.[1] The Growth Management Act steered growth away from rural and resource lands and efforts to designate and protect farmland have slowed this loss considerably in the last 20 years (Figure 4.1). However, economic challenges faced by farmers and financial pressure to sell to developers continues to threaten farmland. As a result, the most recent data show that between 2007 and 2012, the region lost almost 12,000 acres of farmland.

Farms that are not within agricultural zones are under somewhat greater threat of conversion due to broader allowed uses and smaller

allowed lot sizes (5 and 10 acres).[2] Thirty-six percent of farmland in the regional open space network is not located within an agricultural zone. However, many agricultural zones in the region also allow for small lot sizes and no agriculture zones in the region have the recommended minimum lot size of 40 acres.[3] As such, farmland that is zoned for agriculture is also considered at risk of conversion. Another risk factor is proximity to population centers; farmland closer to population centers is at greater risk for conversion than more remote lands.

Figure 4.1

Acres of Agricultural Land in the Four Counties

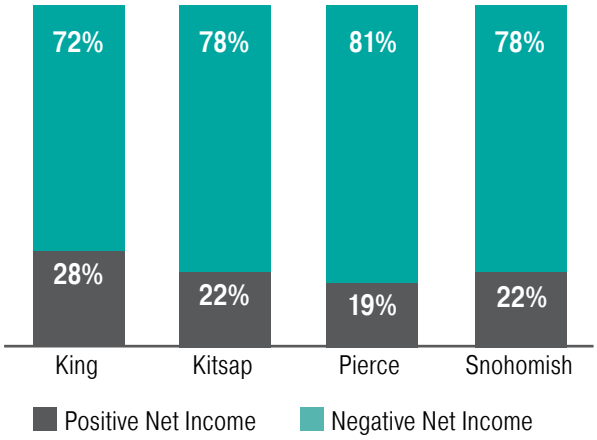


Source: U.S. Census of Agriculture.

A key challenge in maintaining farmland is economic viability. During the last agricultural census in 2012, about 75 percent of farmers in the region reported that their revenues were less than their costs, meaning they lost money (Figure 4.2). Small minimum lot sizes also allow farms to be split up into smaller farms, which can reduce their commercial viability.

Figure 4.2

Percent of Farms Reporting Positive Net Income in 2012



Source: U.S. Census of Agriculture.

This is complicated by additional challenges including the aging of farm owners and increasing costs of land.[4,5] High barriers to starting new farms dissuade younger generations from entering agriculture. Additional factors that reduce the economic viability of farms include regulations and limited local and regional agricultural infrastructure and services. Ultimately, many older farmers sell their land to developers to help fund their retirement. As farmland becomes fragmented, providing infrastructure becomes costlier and markets shrink. Conflicts between farmers and adjacent non-farming residents, particularly in areas where urban development has encroached on farming areas, can arise over issues such as farm odors and noise.

Eventually, if too much farmland is lost, the farming economy may no longer be able to sustain itself.

4.1.2 Aquatic Systems and Natural Lands

Aquatic systems and natural lands are most threatened by fragmentation, loss of key habitat, and poor water quality that has resulted from development and paving over of watersheds. As habitat has been lost, the remaining habitat supports fewer wildlife and salmon. As patches of habitat become separated from each other, wildlife can no longer move between them and their ability to migrate is hampered.


Stillaguamish River, Snohomish County

Increasing area of land covered with impervious surfaces has resulted in altering natural watershed processes. Rainwater no longer infiltrates the ground in these places, where it would have replenished groundwater supplies and reached streams slowly. Instead, rainwater runs over these hard surfaces, picks up pollution from cars, building materials, and lawns and often flows quickly into streams and rivers unfiltered, where water flows spike dangerously and water quality drops from the incoming pollutants.

Those pollutants are harmful to aquatic life. For example, they are killing up to 90 percent of returning coho salmon in urban streams before they can spawn.[6] Contaminants have been found in fish tissue across the region.[7] When development expands outward, more impervious surfaces are laid, altering natural aquatic processes. However, new development in urban centers can replace old drainage systems, thereby improving water quality, and may result in less impervious surface per capita than less dense areas.[8]

4.1.3 Working Forests

Working forests face some pressure from development, although less so than the other categories (see below for analysis). Working forests that are within forestry designations are generally unlikely to be converted to development. The exceptions are lands that are subdivided and on the periphery of forestry zones. Forest lands outside of these protective zones are also under more threat of conversion because minimum lot sizes are smaller and properties are closer to urban utilities and services. These lands also tend to be owned by individual landowners instead of commercial timber companies. These smaller working forests, which contribute to the regional economy and the protection of natural resources, face many similar pressures as farms in the region. These include the aging of land owners, increasing land costs, regulations, and limited access to necessary infrastructure. Unlike farms, revenue cycles on forestland are very long due to the slow growth of trees. A landowner may only take a few management actions in their ownership tenure. Forest plans can help landowners manage their forest for long-term sustainability, but many owners do not have the resources to develop them.

4.1.4 Urban Open Space and Regional Trails

Cities, counties, and park districts maintain systems of parks and designated open spaces in the region's urban areas. These jurisdictions also maintain regional trails. Trails and urban open space face different types of threats than other categories of open space. Many jurisdictions struggle with funding and resources for maintaining their existing parks and trails. This includes keeping the grounds clean, caring for vegetation, and keeping playgrounds and other structures in safe, working order.


Burke-Gilman Trail, City of Seattle

As the demographics of communities change, preferences for types of parks and green spaces can also change. In some communities, the nearby parks may not offer the types of recreation that community members are looking for. Increasing populations are also straining existing parks and recreation facilities as more residents are using the same amount of park space.

Increasing parkland and urban open spaces to meet a high level of service is particularly challenging due to the high cost of land in urban areas and low land availability. At the same time, if the livability of urban areas is not maintained and enhanced, growth pressure on outlying areas could increase.

A different type of challenge associated with urban open space is gentrification. Property values around parks and green spaces tend to be higher than areas with less access to open space. Cities that have invested in open space improvements have struggled with displacement of existing residents as housing costs increase. The City of Atlanta is experiencing this with the Atlanta Beltline, a large-scale urban open space project that includes 22 miles of trail with associated parks. Between 2011 and 2015, home values around the Beltline increased up to 27 percent more than elsewhere.[9] While the city planners included requirements that new developments in the Beltline district include certain percentages of affordable housing, provisions to keep housing affordable for existing residents were not included. As municipalities in the central Puget Sound region invest in urban open space, considering displacement risks and other negative impacts to existing communities, particularly low income and minority communities, will be essential to ensuring all residents have access to open space.

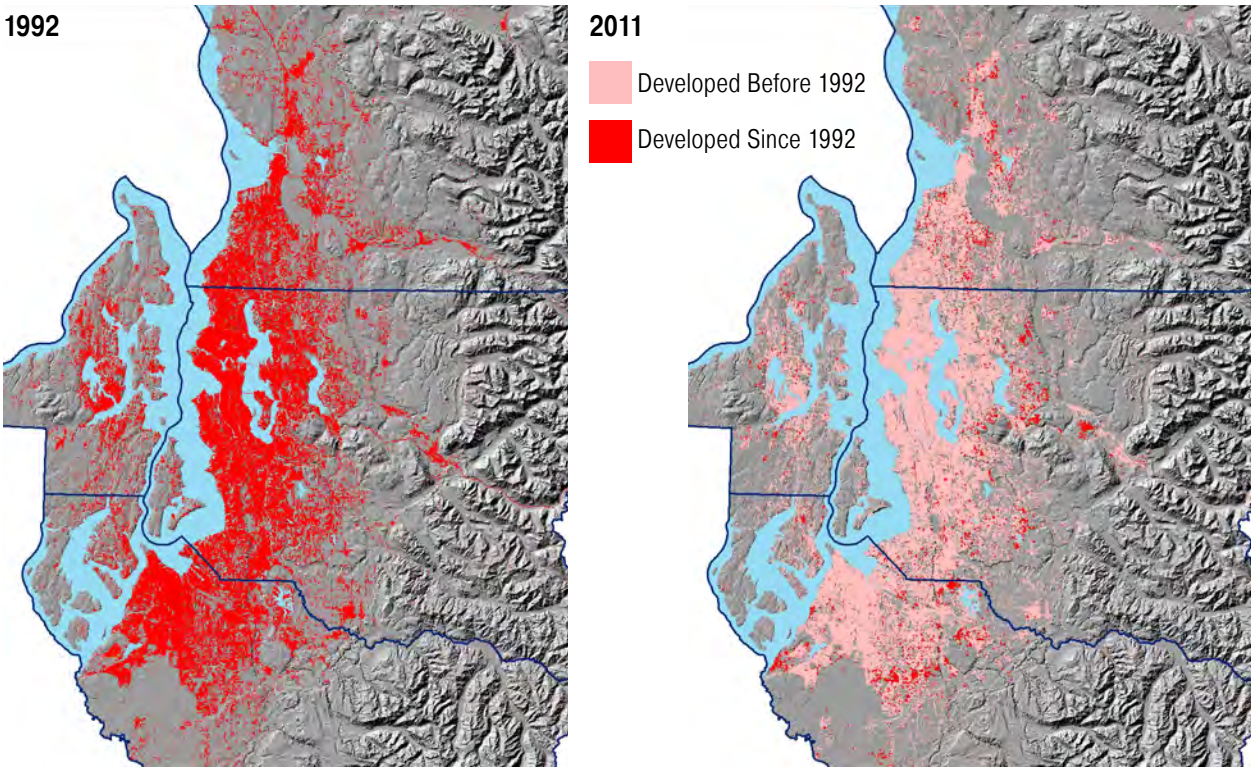
4.2 Development Pressures in the Region

The most urgent threat to open space currently is development. Trends show that the region has lost open space to development over time (Figure 4.3). Land cover data show that between 1992 and 2011, forest cover in urban and rural (non-forestry) areas has decreased by 4 and 2 percentage points, respectively. About 41,800 acres of open space land were converted to development.

Recently, the region has experienced rapid growth. In the last five years (2012-2017), the region has added about 324,000 people, pushing the region's population over 4 million.[10] This has translated into a building boom to house these new residents. Between 2010 and 2015, 108,506 new dwelling units were permitted across the region. Most of this development occurred within the urban growth area, but there has still been development in rural areas as well (Table 4.1). Development can harm open space by removing and reducing the ability of the land to provide open space services. Development also fragments open spaces, which can lead to further decline on nearby lands.

Figure 4.3

Developed Land (in red), 1992 and 2011



Source: PSRC, 2018. NOAA land cover change analysis.

Table 4.1

Permitted Units, 2010-2015

	UGA	Rural Lands	Designated Farmland	Designated Timberland	Aquatic Systems	Natural Lands
King	69,350	531	17	1	625	932
Kitsap	2,387	726	n/a	0	329	42
Pierce	14,084	1,783	23	0	267	1143
Snohomish	17,734	1,752	42	7	368	1237

Source: PSRC, 2018.

Between 2010 and 2015, 4,792 housing units were permitted in rural areas and there is zoned capacity for an estimated additional 120,000 housing units under current zoning in rural areas (Table 4.2).

Lands designated for agriculture and forestry have experienced less development. Between 2010 and 2015, housing units permitted regionwide on these lands were 82 and 8, respectively. These designations tend to require larger lot sizes (up to 80 acres in forestry zones, and up to 35 acres in agriculture zones, although some areas allow as small as 5-acre lots) and limit the allowed uses, which helps protect open spaces. Further, most forestry zones are located far from population centers, helping to reduce development pressure. Most of the permits on designated forestry land are on parcels that have been previously subdivided below the minimum lot size. About 64 percent of farmland in the open space network is designated for agriculture and 81 percent of working forests are designated for forestry. However, agriculture zones that allow 5 and 10 acre lot sizes can lead to larger farms being broken up into smaller sizes, threatening their commercial viability.

While working lands designations have helped protect farms and forestland from development, these designations are not permanent. Between 2000 and 2008, 6.5 percent (6,690 acres) of designated agricultural land was redesignated as rural residential or some other use that allows additional development, including 1,480 acres redesignated as urban.[11] Pressure to accommodate a growing population could lead some jurisdictions to redesignate more lands or expand their urban growth area boundary, leading to urban development in previously rural areas. The expansion of transportation facilities to serve these areas also has an impact on open space, both directly from construction impacts and indirectly from increasing access and consequently development pressure on these and nearby open space lands.

Development also threatens open space benefits by removing tree canopy. Strong tree retention policies can help allow development while retaining open space services on the land (See Appendix B for examples).

Table 4.2

Approximate New Housing Unit Capacity Outside of the Urban Growth Area

King	29,300
Kitsap	19,000
Pierce	38,000
Snohomish	34,000
Total	**120,300**

Source: PSRC, 2018.[12]

King County

4.3 Barriers to Protection

Even when public agencies and private nonprofits are dedicated to conserving open spaces and have the necessary information to identify open spaces to protect, there are many barriers they face in trying to implement these plans.

The largest barrier to long-term protection is a lack of funding. The conservation need in the central Puget Sound region exceeds the funding currently available for conservation. Conservation futures funding in 2016 was about $26.5 million across the region (fluctuates according to property value).[13] The Real Estate Excise Tax (REET) provides around $1.75 million a year for open space in King and Pierce counties.[14,15] The King County parks levy provides about $7 million a year for acquisition.[16] While this plan does not provide a total cost for the conservation needs identified, input from conservation leaders in the region indicates that the need is greater than that available from the traditional funding resources.

This problem is exacerbated by growth in the region, which is quickly increasing land values. As this trend continues, conservation dollars are able to achieve less and less. At the same time, if intact open spaces are developed, the cost of restoring them is even greater than protecting them from the beginning. Jurisdictions save money in the long run by investing in open space protection, but they need the funding to do so.

Additionally, cities do not have strong incentives to support regional conservation beyond their boundaries. Watershed planning, flood districts, and the Landscape Conservation and Local Infrastructure Program are all efforts to address this challenge (See Appendix B for more descriptions of these).

City of Tacoma

Another barrier to conservation is the availability of open spaces to be protected. Even with an identified network of regional open spaces, not all land within that network will be available for conservation. Private landowners simply may not be interested in selling their land or selling conservation easements. Some of this can be addressed through improved landowner engagement and programs that provide incentives to landowners.

Existing policies and regulations can inhibit conservation efforts. Many regulations and permit requirements were designed with residential, commercial, or industrial development in mind. When landowners want to implement stewardship practices or restoration projects, the cost of adhering to these permitting requirements can be prohibitive. Farmers and foresters must also comply with environmental regulations at all levels of government, which can also impact the viability of some working lands.[17]

Finally, public agency capacity is also a potential barrier. Brokering land and easement acquisition takes staff time to accomplish. Counties and cities may have staff with this expertise, but staff have limited time to accomplish the tasks involved in negotiating such transactions. Land trusts and other conservation nonprofits tend to have staff that specialize in this area and help add some capacity to local government efforts.

4.4 Conservation Needs

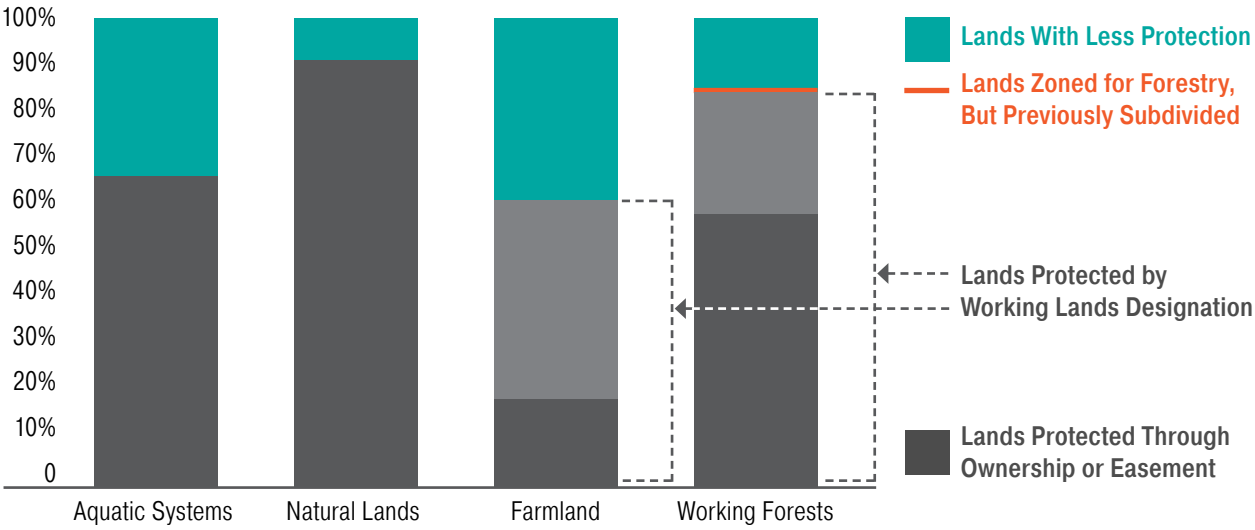
In Chapter 3, the parts of the regional open space network that are in long-term protection were identified. This includes areas that are protected through ownership, and also areas that are protected through conservation easements, which are more appropriate for conserving working lands.

The threats and barriers described in the previous sections do not equally affect all types of open space. Each category of open space has unique challenges for conservation. More differentiated conservation needs were identified by mapping levels of protection and threat for each category. Conservation needs for urban open space are discussed in Chapter 5. Figure 4.4 shows the proportion of the regional open space network that is protected by category and, conversely, the proportion that has little or no protection. A substantial portion of the existing protection in aquatic systems is owing to cities that have protected their municipal watersheds. Much of the remaining unprotected lands are in river valleys and floodplains. These remaining areas are crucial for protecting aquatic habitat, reducing flood risks, and maintaining key corridors. National forestland and state lands protect a majority of the natural lands in the network. The remaining lands are key habitat areas and wildlife corridors that provide linkages through developed areas.

Nineteen percent of farmland in the open space network is in long-term protection and 64 percent is designated for agriculture. Thirty-six percent (73,000 acres) has little or no protection. A larger portion of working forests are in long term protection, and in total, 81 percent are within forestry designations. Nineteen percent (177,000 acres) has little or no protection. An additional 7,000 acres that are within forestry zones have previously been subdivided below the minimum lot sizes and are more likely to be developed.

Figure 4.4

Proportion of the Regional Open Space Network That is Protected by Category



Source: PSRC, 2018.

This analysis led to the definitions below for conservation needs for each category. These conservation needs are mapped in Figure 4.5.

Farmland. Parts of the network that are privately owned, do not have a conservation easement, and still have development capacity (i.e., current zoning would allow additional units to be built on the parcel based on parcel size and allowed density). Farmland that is designated for agriculture is included as conservation needs because these lands are still experiencing challenges associated with economic viability.


Puyallup Valley, Pierce County

Working Forests. Parts of the network that are not designated for forestry and are privately owned without a conservation easement. Also included are working forests in the network that are designated for forestry, but that are subdivided (smaller than 20 acres).

Aquatic Systems and Natural Lands. Lands within the network that are privately owned, do not have a conservation easement, do not overlap with farms or working forests, and are undeveloped and provide ecological services. The total acreage of these areas within the network was estimated using the National Land Cover Dataset (to identify undeveloped areas), although the exact locations of such areas would need to be verified through site visits.

The geographical distribution of protection and conservation need varies across the region — some watersheds have high levels of protection and some watersheds have lower levels of protection (Table 4.3). Some areas have protected more farmland while other areas have protected more natural lands or working forests. To support watershed function, protection of each type of open space should occur within each watershed. Table 4.4 shows the acres of conservation need by watershed.

Urban Open Space and Regional Trails. The need for additional urban open space is discussed in Chapter 5, which identifies the need for 47 additional parks to address the highest priority needs. Gaps in the regional trail network are shown in Figure 4.5. They include gaps in existing regional trails that have been identified in local plans as trails or paths serving all ages and abilities.

Table 4.3

Percent of Open Space Network in Long-Term Protection for Each Category Across the Region's Watersheds

Watershed	Farmland	Working Forests	Aquatic Systems	Natural Lands
Stillaguamish	10%	72%	74%	87%
Snohomish	26%	78%	56%	94%
Cedar — Sammamish	33%	66%	89%	70%
Green — Duwamish	34%	83%	86%	66%
Puyallup — White	21%	44%	51%	86%
Nisqually	10%	43%	30%	74%
Chambers — Clover	0%	0%	42%	67%
Kitsap	5%	32%	41%	41%

Source: PSRC, 2018.

Figure 4.5

Regional Conservation Needs

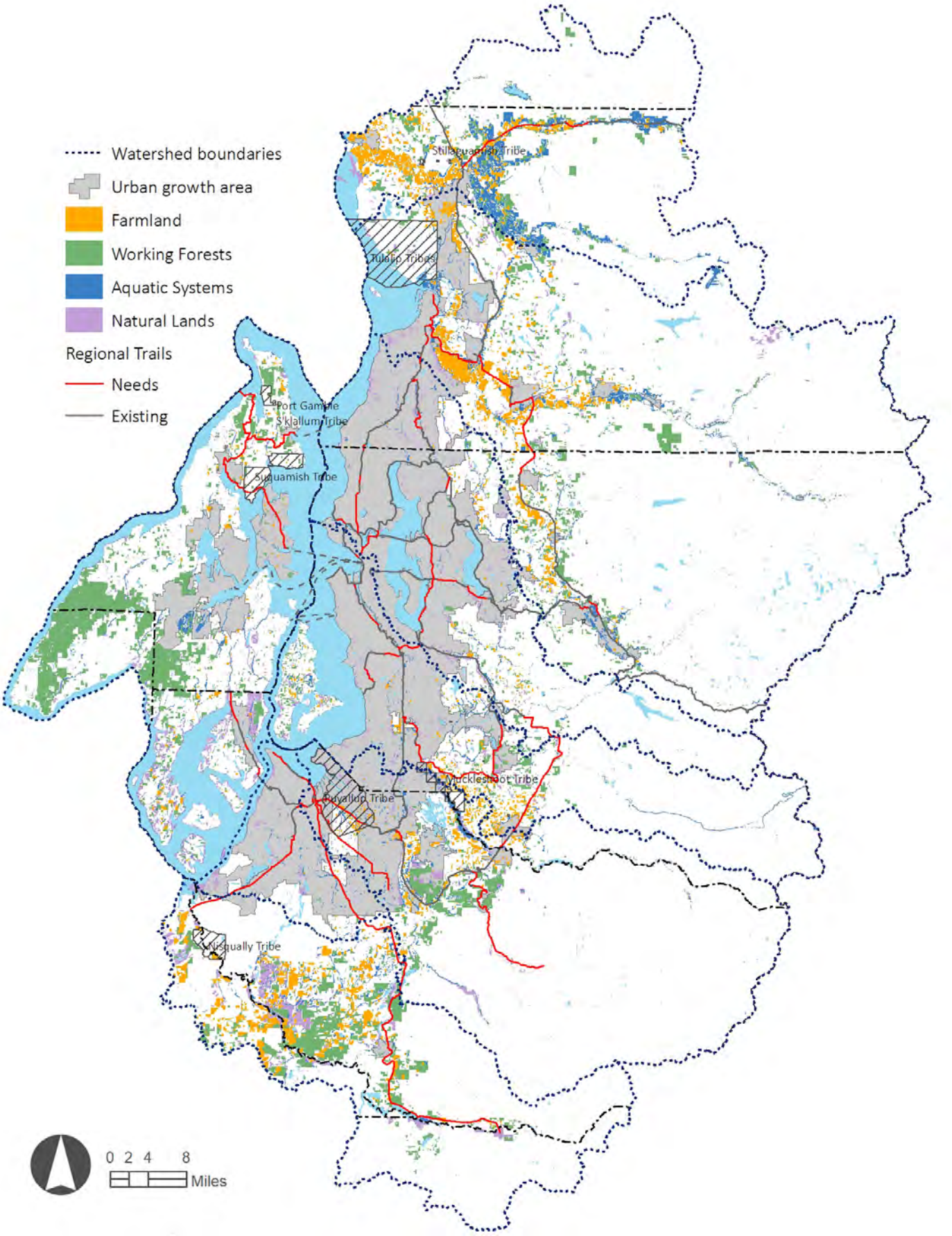


Table 4.4

Conservation Needs in the Regional Open Space Network[a]

Watershed	Farmland (acres)	Working Forests (acres)	Aquatic Systems (acres)	Natural Lands (acres)	Regional Trails (miles)
5 — Stillaguamish	24,000	17,300	28,000	3,000	12
7 — Snohomish	30,100	26,600	21,700	12,700	46
8 — Cedar/Sammamish	2,300	2,500	5,600	9,100	40
9 — Green/Duwamish	6,900	5,500	6,600	7,700	43
10 — Puyallup/White	9,500	16,300	9,900	9,200	53
11 — Nisqually	26,600	38,100	8,900	16,300	35
12 — Chambers/Clover	240	260	1,800	3,200	13
15 — Kitsap	4,400	76,600	11,300	20,600	58
Total	**104,000**	**183,200**	**93,700**	**81,700**	**300**

[a] Conservation needs for urban open space are described in Chapter 5.
Source: PSRC, 2018.

Estimated conservation needs across the regional open space network sum to **104,000 acres** for farmland, **183,200 acres** for working forests, **93,700 acres** for aquatic systems, **81,700 acres** for natural lands, and **300 miles** for regional trails. Past conservation efforts have helped protect a substantial portion of the region's open space network. However, this masks geographical differences and differences among types of open space. Some categories of open space, such as farmland, have experienced a much lower level of long-term protection and face greater challenges, such as economic viability. Differentiating these conservation needs by type and watershed

Othello Park, City of Seattle

is necessary to better match conservation strategies and tools to these open spaces. Chapter 6 presents an action plan with a suite of strategies to address the conservation needs identified here. It should be noted that the acres identified here represent the regional-scale conservation needs. Individual jurisdictions may have identified open spaces of local importance and local conservation needs in addition to those identified here.

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[1] American Farmland Trust (AFT). 2017. Losing Ground: Farmland Protection in the Puget Sound. Seattle, Washington.

[2] Ibid.

[3] Ibid.

[4] King County. 2015. Local Food Initiative. Available at: http://your.kingcounty.gov/dnrp/local-food/documents/2015-KC-Local-Food-Report.pdf.

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[6] Scholz NL, Myers MS, McCarthy SG, Labenia JS, McIntyre JK, Ylitalo GM, et al. (2011) Recurrent Die-Offs of Adult Coho Salmon Returning to Spawn in Puget Sound Lowland Urban Streams. PLoS ONE 6(12): e28013.

[7] Puget Sound Partnership. 2017. 2017 State of the Sound. Olympia, Washington. November 2017. 84 pp. www.psp.wa.gov/sos.

[8] EPA Using Smart Growth Techniques as Stormwater Best Management Practices. https://www.epa.gov/sites/production/files/2014-04/documents/stormwater-best-management-practices.pdf.

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[10] PSRC. 2017. Regional Population Trends. Available online at: https://www.psrc.org/sites/default/files/trend-population-201707.pdf.

[11] PSRC. 2011. Puget Sound Trends: Natural Resource Land Trends in Central Puget Sound. Seattle, WA.

[12] PSRC staff determined the allowed number of housing units per parcel in the rural area according to county zoning codes and subtracted existing units on each parcel (according to county assessor data) and summed the units for the whole region.

[13] Office of Farmland Preservation. 2016 County Conservation Futures Report. Washington State Conservation Commission. Available at http://ofp.scc.wa.gov/wp-content/uploads/2016/03/2016-OFP-Conservation-Futures-Report.pdf.

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[15] King County. 2016. Existing County Funding Sources and Gap. Handout at Land Conservation Initiative Advisory Committee meeting on December 1, 2016. Available at: https://your.kingcounty.gov/dnrp/library/water-and-land/land-conservation/meeting-12-01-16/handout-revenue-pie-chart.pdf.

[16] Ibid.

[17] Globalwise, Inc. 2016. A Fresh Look at Pierce Agriculture: Technical Memorandum #1 – Analysis of Pierce County's Agriculture Sector. http://www.freshlookatpierceag.org/wordpress/wp-content/uploads/2016/09/Globalwise-Tech-Memo-1-051316.pdf.

5 Access to Open Space

Who has access to the region's open spaces? What gaps exist in providing access to all the regions residents?

Marymoor Park, King County

Open spaces provide significant physical and mental health benefits and contribute to a high quality of life. Neighborhood and community parks, passive recreational areas, and neighborhood tree canopy help provide these benefits, especially to people living in cities and urban areas. Access to open spaces is particularly important for children because child development can be impacted by limited access to nature and green spaces.[1] Increasing connections between people and open spaces helps ensure that benefits of open space are available to everyone in the region.

The goal of this chapter is to provide a first ever regional-level assessment of residents' access to urban open space and a preliminary identification of urban open space needs. Parks and open space planning mostly occurs at the local level and each community has distinct open space needs that are hard to capture at the regional scale. This chapter presents a base level analysis of access across the region but does not account for the complex needs of individual communities.

This analysis focused on assessing open space access within the urban growth area. Consistent with the Growth Management Act, this analysis looked at ensuring parks and open space are within walking distance for urban area residents. Rural residents are assumed to have greater open space access since rural areas tend to have open spaces, greater canopy cover, and more undeveloped areas within the rural residential land use pattern.

Planning and parks staff from several cities in the region provided input on urban open space issues. They confirmed the importance of access to open space and are planning for increasing access in their communities in a variety of ways, from adding pocket parks to extending trails. Parks and open space surveys across the region have identified access to trails and natural areas as a top priority for survey respondents. Staff interviewed said that lack of funding, especially for operations and maintenance, is a concern. They thought that an analysis of gaps in access to parks and open space that is consistent with the Washington State Recreation and Conservation Office's criteria would help their city prioritize projects. Some are partnering with their surface water management departments to look at the potential to increase open space access by combining green stormwater infrastructure with park space.

5.1 Measuring Access to Urban Open Space

As a first step in measuring access to urban open space, trails and outdoor recreational areas were mapped across the region. County and city comprehensive plans and parks, recreation, and open space plans were used to identify the location of parks and open space. School grounds that are available for public use through an interlocal agreement were included where known. Using the Recreation and Conservation Office's guidance, parks and open space smaller than 10 acres were classified as "neighborhood parks" with the ability to serve residents up to a half-mile walk away. Parks and open space between 10 acres and 100 acres were classified as "community parks" with the ability to serve residents up to a one-mile bike or drive away. Parks greater than 100 acres were classified as regional parks with the ability to serve residents up to a 10-mile drive away. Existing regional trails were included in the analysis as regional parks. Access to parks via trails was also included as part of the analysis.

A GIS analysis was conducted to map these distances from each park along roads and bike paths to simulate a half-mile walkshed or one-mile driveshed/bikeshed. A "service area" was drawn around each park representing the half-mile, mile, or 10-mile distance the park could serve residents. These service areas were then overlaid with demographic data from the 2015 American Community Survey produced by the U.S. Census to calculate the number of people living within a service area and the number of people not living in such an area. Only urban residents were counted; rural areas were excluded from this analysis as explained above. Non-residential urban areas, such as industrial areas, were not included in the analysis.

Parks Rx

Park Prescription programs are designed in collaboration with public land agencies, health care providers, and community partners to improve individual and community health. They typically include some type of referral or "push" from a healthcare or social service provider and "pull" from a park system that connects participating individuals with local outdoor activities. Metro Parks Tacoma hosted a Parks Rx Day at Point Defiance Park.

Approximately 76 percent of residents in the urban growth area (UGA) live within a half-mile walk of urban open space (Table 5.1). All residents in the UGA are within a 10-mile drive of a regional park according to this analysis. Within cities, 85 percent of residents live within a half mile of a park, and 79 percent live within a mile of a community park. Residents that live within the unincorporated UGA, however, are much less likely to have easy access to urban open space. Only 35 percent live within a half mile of a park and 46 percent live within a mile of a community park. Figure 5.1 shows areas in the UGA that are within a half-mile walk of a park or green space.

Table 5.1

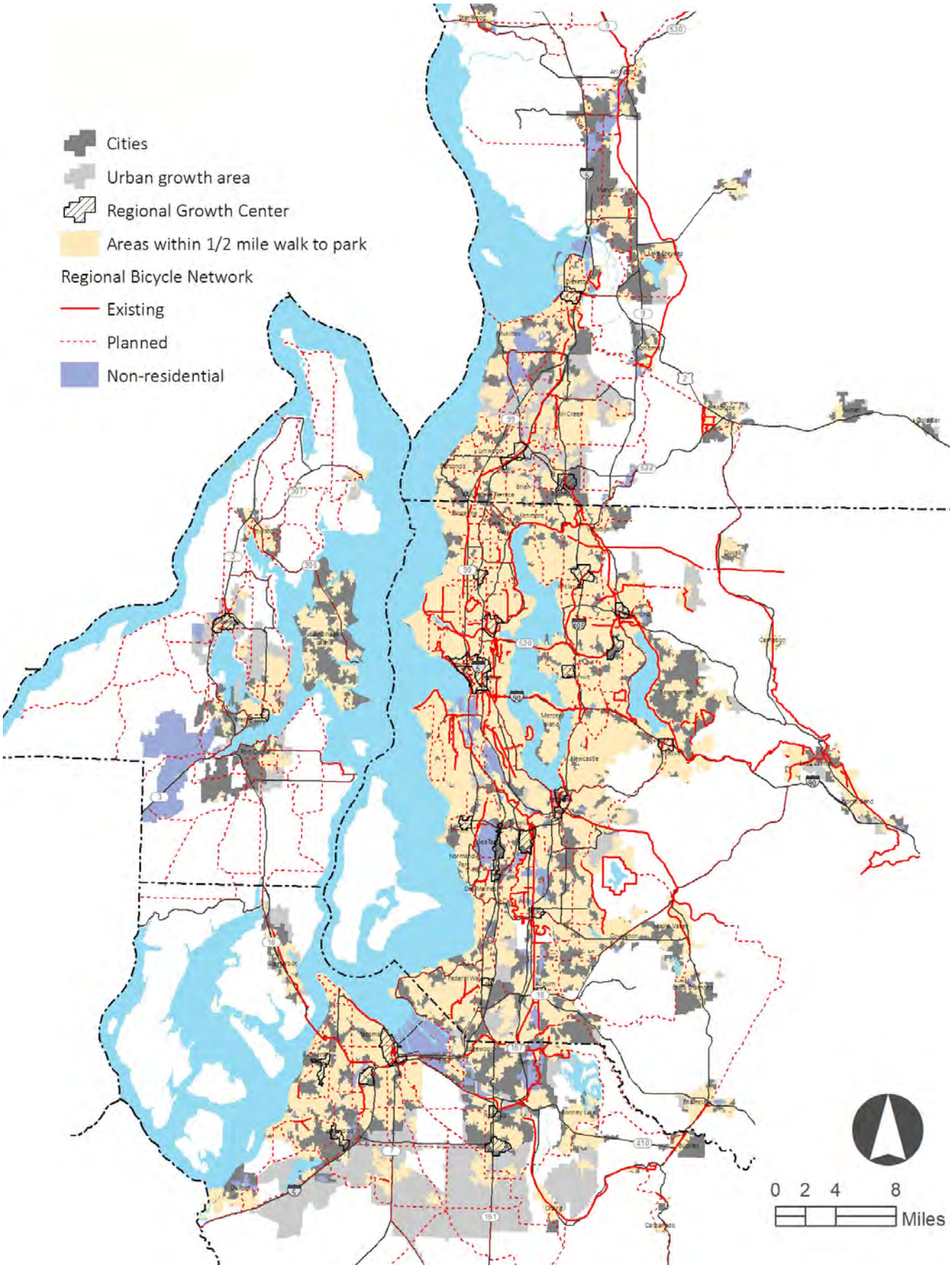
Number of Urban Puget Sound Residents With Access to Urban Open Space in 2015

	Population With Access [a]		Population Without Access [a]		Total Population [a]
Within UGA					
Half mile of any park	2,454,554	76%	783,418	24%	3,237,972
One mile of community or regional park	2,372,545	73%	865,427	27%	3,237,972
City					
Half mile of any park	2,256,654	85%	413,929	15%	2,670,583
One mile of community or regional park	2,108,782	79%	561,801	21%	2,670,583
Unincorporated UGA					
Half mile of any park	197,900	35%	369,489	65%	567,389
One mile of community or regional park	263,763	46%	303,626	54%	567,389

[a] Demographic data from American Community Survey, 2015.
Source: PSRC, 2018.

Figure 5.1

Access to Urban Open Space



5.2 Identifying Urban Open Space Access Gap Areas

Access gap areas are residential areas in the UGA that do not have easy access to urban open space. "Easy" access is defined for urban areas as living within a half-mile walk to a park of any size and within one mile of a community or regional park or trail. Gap areas are areas that do not have easy access to either a neighborhood park or a community park. Some gap areas have open space services provided by homeowners' associations (such as native growth protection areas, critical area tracts, playgrounds, and other open areas). These areas were included where mapping information was available, and a future analysis with more complete mapping of these areas may reduce gap areas.

Lake Burien School Memorial Park, City of Burien

To better understand the nature of these gap areas and to inform further work to prioritize gap areas for access improvements, two additional sets of variables were mapped. One was tree canopy cover, which tends to be higher in single-family residential neighborhoods with larger lots. The other was the socio-economic character of the community. Three indicators for this were included: median income, percent people of color, and percent people with low English language ability. An index of these indicators was used for analysis (described in Appendix C). Gap areas with higher canopy cover are considered less urgent to address because these areas have some open space benefits even if they are not in the form of parks or protected areas. Gap areas with very little canopy cover are considered to be in high need of open space investment. Similarly, gap areas where there are higher numbers of people from minority and low-income communities are considered to be in high need of open space investment to address historical inequities.

In total, there are 300 census block groups with a park gap (Table 5.2; a corresponding map is in Appendix E). Ninety-three census block groups have low tree canopy cover (defined as less than 20 percent) and 53 census block groups have high tree canopy cover (greater than 40 percent). Sixty-five census block groups had higher numbers of people from minority and low-income groups, while 69 block groups had a lower number of people from these groups. "High" numbers of people from minority and low-income groups means in the top third of all urban census blocks, and "low" means in the lower third. About 70 percent of gap areas have medium or high canopy cover, indicating that although these areas may not have easy access to parks, residents are still benefiting from some open space services. The remaining 30 percent of gap areas have little canopy cover, indicating that the people who live there have few open space services. Among people who live in gap areas, minority and low-income residents are more likely to live in these open space "deserts." Generally, areas with higher concentrations of low-income and minority groups and gap areas with low canopy cover should be priorities for investment in parks, access improvements, and efforts to restore tree cover.

Table 5.2.

Number of Urban Census Block Groups With an Open Space Access Gap[a]

Number of People From Minority and Low-Income Groups	Canopy Cover in Access Gap			Total No. of Census Blocks
	Low Canopy Cover	Medium Canopy Cover	High Canopy Cover	
Fewer people	12	38	19	69
Medium	41	94	31	166
More people	40	22	3	65
Total number of census blocks	93	154	53	300

Target Gap Areas

[a] Access gaps are areas that do not have access to either a neighborhood or a community park.
Source: PSRC, 2018.

Most gap areas are located in unincorporated UGAs, with some in cities. A few of the urban open space gaps are in regional growth centers. Given the importance of parks and other green infrastructure in attracting people, employers, and development, a city may want to prioritize filling an open space gap as a strategy to achieve the vision for its regional growth center. Planners and policy makers should engage communities directly to learn what types of open spaces the community wants, as interests and needs can vary greatly from one community to the next.

The analysis described here is one way to measure the adequacy of open space access. Key concepts that were not addressed here are:

- Parks are not all equal. Some parks are developed while others are undeveloped. Some parks provide active recreation opportunities while others provide passive recreation. Some parks provide what nearby residents would like out of a park, while others do not. Similarly, some parks are in need of maintenance and upgrading.
- Level of service can be measured in other ways. One example is number of acres of park per 1,000 residents. Using that and other metrics instead of distance may lead to different results than those presented in this chapter.
- There are likely open space and park access needs in areas that were not identified as a gap. Many areas are served by only one or two small parks that may not be sufficient for the density of the surrounding population.
- This analysis does not fully consider future access needs that will be created as the region grows by adding additional residents within existing urban areas, particularly planned centers.

The analysis here provides a starting point for understanding the level of access to urban open space in the region, but other complementary work is also needed.

Chapter 6 discusses strategies for increasing connections between people and open space and Appendix B provides tools to help local jurisdictions interested in closing these gaps.

5.3 Urban Open Space Needs

As discussed above, 76 percent of the region's urban residents have access to a neighborhood park and 73 percent have access to a community park. Fifteen percent do not have access to either. Reasons for this lack of access include:

- There are no nearby parks.
- There are nearby parks, but the road or trail network does not provide easy access.

This section provides rough estimates for the **minimum** amount of urban open space needed across the region to fill current gaps. Quantifying such needs on a regional scale provides a coarse estimate — local planning is still needed to determine the specific urban open space needs of different communities. To make these estimates, assumptions about future growth patterns were made. Two categories of open space needs were used — existing needs and future needs. Existing needs are those open spaces needed to fill in existing gaps in park access. Future needs are those open spaces needed to provide additional open space services to areas with planned growth.

To identify existing needs, the analysis in section 5.2 was used as a starting point. There are 40 census block groups in the region that do not have access to a park and that also have low canopy coverage and high proportion of people from low-income and minority populations (Table 5.2). These are the highest priority gap areas and they represent 24 distinct areas needing an urban open space investment (some block groups are clustered and could potentially be served by the same park). This addresses only the neediest park gap areas. To close the other existing gap areas, at least 40 more parks or green spaces could be needed.

In addition to filling existing park gaps, jurisdictions will need to consider future growth patterns to ensure that residents continue to have access to sufficient nearby open space. Regional growth centers are where the region is directing a significant portion of future growth. Maintaining and expanding open space in these centers will help keep them livable and attract residents and businesses to locate there. Of the 29 centers, two centers overlap with the priority areas described in the previous paragraph (and so are not counted here). Another four of the regional growth centers also have gaps in easy access to parks. Although their demographics or relatively higher level of canopy cover do not put these gaps in the highest priority tier, their designation as a regional growth center suggests they are also priorities. Land space is more limited within centers, so level of service may need to be assessed relative to factors other than acreage. Centers also vary in land use, size, and population and have unique needs for open space investments. Local planning efforts will need to determine the best ways to provide access to urban open space within centers. New parks, green spaces, or trails are all possibilities that local jurisdictions might explore. In many cases, parks and green spaces may be just outside of a center instead of inside the center. In some cases, existing parks may meet community needs for open space, but ensuring they are maintained and easily accessible as the center develops will be necessary.

Future growth is also going to areas near high capacity transit located outside of centers. As with regional growth centers, a necessary component of successful transit-oriented development is urban open space that will support livability and attract new residents and businesses. Five high capacity transit station areas overlap with the highest priority gap areas. Another 19 high capacity transit station areas overlap with other gap areas. As with centers, these additional 19 areas should also be considered high priority for urban open space investment.

Table 5.3 summarizes these current urban open space needs. At least 24 places in the region need open space investments to meet the most pressing existing needs. Another 23 places need investments to support the Regional Growth Strategy.

Table 5.3
Minimum Quantity of Urban Open Space Investments Needed in the Region

	Number of Places With Park Access Gaps
Highest priority	24
Regional Growth Centers	4
Transit communities	19
Total	**47**

Source: PSRC, 2018.


South Lake Union Park, City of Seattle

To meet future open space needs, the remaining centers and stations areas that do not currently have gaps may also need open space investments to ensure that they can continue to provide access to future residents. Local jurisdictions can incorporate the need for urban open space when planning for centers and station areas.

5.4 Access to Wild Open Space

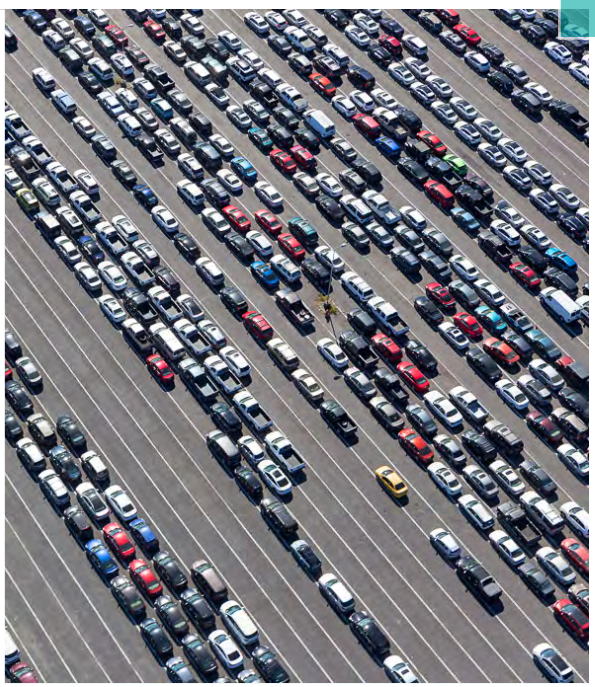
The Puget Sound region offers stunning wilderness within easy drives for most people in the region. These places, which include Mount Rainier National Park in addition to several National Wilderness Areas and state parks, offer unparalleled opportunities to experience nature. Visiting these places allows people to temporarily escape the busy hubbub of cities and other developed areas and to relax and refresh. Increasing access to these open spaces can also increase support for conservation.

However, a car is most often required to access these areas, which contributes to carbon emissions, leads to congestion at trailheads, and limits who can access wildlands. The capacity of parking areas at trailheads is far exceeded by the number of visitors. At many trailheads, visitors park illegally along busy roads. This leads to safety concerns and heavy impacts to the natural areas at and around access points. The necessity of having a car to access these areas creates a barrier for people of lower income, as the lower a household's income, the less likely the household is to own a car (Table 5.3). Other barriers to enjoying these open spaces include the cost of an access pass, lack of leisure time, equipment, and familiarity with hiking and camping.

Table 5.4

Car Ownership by Income Across the Region

	Percent of Households Owning at Least One Vehicle
Less than $10,000	63%
$10,000 to $14,999	72%
$15,000 to $24,999	78%
$25,000 to $34,999	88%
$35,000 to $49,999	94%
$50,000 to $74,999	95%
$75,000 to $99,999	97%
$100,000 to $149,999	98%
$150,000 to $199,999	98%
$200,000 or more	98%



Source: American Community Survey, 2015.

In 2015, a survey of visitors to the Mount Baker Snoqualmie National Forest found that only 11 percent of respondents identified as people of color,[2] while people of color represent 35 percent of the region, and 20 percent of the state.[3]

Identifying alternative modes for people to access these areas is important both for protecting wilderness and for helping people from historically marginalized groups experience wilderness. Other programs in concert with transportation may also be needed to engage marginalized groups. For example, Latinos Outdoors works within Latino communities in the region to develop outdoor leadership and empower members to explore nature and outdoor opportunities. Agencies managing open spaces can provide materials in multiple languages and include programming to introduce new users to the outdoors. King County operates "Trailhead Direct," which picks up from Capitol Hill, Mount Baker Transit Center, Eastgate Park and Ride, Issaquah Transit Center, and North Bend Park and Ride and takes passengers to Mount Si and the Issaquah Alps.[4] Information learned from this pilot project can help King County expand the program and help other groups in the region develop similar programs. The idea of taking public transit to the outdoors is new, but a necessary idea to explore and build upon.

As the region works to increase access to wild open spaces, it will be necessary to plan for potential impacts to these open spaces from increased use. More people visiting these natural areas can lead to more litter, erosion of trails and roads, and trampling of vegetation without management strategies for sustainable recreation.

[1] Strife, S. and L. Downey. 2009. Childhood development and access to nature. Organization and Environment 22: p99-122.

[2] US Forest Service. 2018. Visitor Use Report, Mt. Baker-Snoqualmie NF. USDA Forest Service. Region 6. National Visitor Use Monitoring. Data Collected FY 2015. Available online at: https://apps.fs.usda.gov/nvum/results/ReportCache/2015_A06005_Master_Report.pdf.

[3] United States Census Bureau / American FactFinder. "DP05: ACS DEMOGRAPHIC AND HOUSING ESTIMATES." 2016 American Community Survey. U.S. Census Bureau's American Community Survey Office, 2016. <http://factfinder2.census.gov>.

[4] King County. 2018. Trailhead Direct. https://trailheaddirect.wordpress.com.

6 Conservation Action Plan

What key strategies are needed to accelerate open space conservation for the benefit of all the region's residents?

Sauk River, Snohomish County

This plan has described the regional open space network, highlighted current efforts to conserve open space, identified conservation needs, discussed threats to open space, and identified opportunities to increase access to open space. The network covers approximately 3 million acres of land. About 2.13 million of those acres are already protected through public or nonprofit ownership or a conservation easement. Of the remaining lands, 463,000 acres are estimated to be at risk. These open space lands support a high quality of life in the region and make the region more resilient to climate change. Development pressure, threats to economic viability, and climate change pose serious risks of losing critical open space services that support a vibrant regional economy and quality of life. To protect these remaining high value open spaces, the region will need to accelerate conservation efforts. Once lost, these open spaces will be nearly impossible to replace. This chapter presents an action plan with 10 strategies for open space conservation in the region.

6.1 Key Strategies

6.1.1 Incorporate Open Space Conservation Into All Levels of Planning

The purpose of this plan is to accelerate conservation of open space in the central Puget Sound region for the benefit of all residents. Due to the many benefits that open space provides, these objectives are complementary to other goals and policies related to health, food access, active transportation, clean air and water, climate change, land use, hazard mitigation, and many other topics. For the first time, the region has mapped a regionwide open space network and identified conservation needs within that network. To support open space conservation, jurisdictions across the region should incorporate aspects of the regional open space network into their local plans and policies. This plan has generated new information and data regarding important open spaces in the region that will help local governments in their planning efforts and decision-making.

Eagle Harbor, Bainbridge Island

Policies that elevate the importance of open space and support its conservation will help guide actions and regulations that preserve open space. Examples of how open space conservation can be incorporated into different levels of planning are shown below.

Regional. The planning for VISION 2050 is an opportunity to integrate regional open space conservation. The regional open space network can be recognized in the plan and inform updates to the Regional Growth Strategy. Review of development patterns will help the region focus new development in urban areas and work to prevent the loss of farms, forests and rural areas. There may be ways that multicounty planning policies and actions in VISION 2050 can support the regional open space network. PSRC can also consider impacts to the

Open Space Assessment Tool

The Open Space Assessment Tool is a mapping tool that identifies critical open space services and benefits to inform conservation, enhancement and protection priorities in the region. More information on the tool is provided in Appendix E.

regional open space network when evaluating transportation projects for funding. This may include reduction in tree canopy cover, fragmentation of working lands or wildlife corridors, or reduction in flood storage capacity (which may be addressed by including green stormwater infrastructure).

County. Counties oversee much of the open space in the region, which mostly exists in rural, unincorporated areas. In addition to maintaining critical areas regulations that preserve many open spaces, counties can update policies to encourage, require or incentivize low impact development, natural drainage practices, tree canopy retention, minimization of impervious surfaces, and larger lot sizes to help retain open spaces and ecological functions. Counties also play a role in promoting growth in urban areas, parks planning and acquisition, and support for tools such as transfer of development rights. Conducting watershed planning and use of watershed characterization as part of comprehensive plan updates can help counties plan for growth that minimizes impacts on open spaces.

City. Cities are tasked with accommodating most of the region's population growth. High quality open spaces make cities more attractive for residents, and preserving and restoring these places should go hand-in-hand with decisions on land use, housing, and other development to support growth. Cities can overlay the regional open space network with their planning layers and integrate open space planning with plans for parks, land uses, critical areas, shorelines, and stormwater. Planning for preserving open spaces and expanding connections will ensure that their residents have access to open space benefits. The Growth Management Act provision for designating open space corridors is one way cities and counties can identify and protect urban open space.[1] Cities can also participate in regional conservation programs (such as transfer of development rights), which benefit all the region's residents by contributing to the preservation of regional assets.

Cities and counties have an opportunity to bolster site development standards to support open space. Policies that strengthen tree retention requirements and/or incentives can help maintain natural stormwater management, provide contiguous habitat for wildlife, and support the health of nearby residents. One approach is to work towards no net loss of tree canopy. Section B-4 of Appendix B (the Conservation Toolbox) provides examples of policies and standards that support tree retention and canopy cover.

City of Redmond

Open Space Corridors

RCW 36.70A.160 states: "Each county and city that is required or chooses to prepare a comprehensive land use plan under RCW 36.70A.040 shall identify open space corridors within and between urban growth areas. They shall include lands useful for recreation, wildlife habitat, trails, and connection of critical areas."

6.1.2 Support Growth in the Right Places

Goal

Minimize the impacts of a growing population on open space.

Tools

By supporting and encouraging growth and development in certain areas, the region can relieve development pressure on the open space network. The Growth Management Act provides the region with a set of planning tools to focus growth in urban areas, preserve rural and resource lands, and protect the environment. At a broad scale, the UGA boundary is a powerful tool for preserving rural open spaces as many of the remaining intact open spaces in the region are outside of the UGA. This rural designation helps maintain existing open spaces by reducing development pressure on rural land and thus conversion of these lands.

> ***VISION 2040 MPP-DP-4***
>
> *Accommodate the region's growth first and foremost in the urban growth area. Ensure that development in rural areas is consistent with the regional vision.*

VISION 2040's Regional Growth Strategy and complementary multicounty planning policies provide further support in managing growth and preserving open space services throughout the region. In particular, goals and policies on the efficient use of urban land that focus growth in the urban growth area, and regional growth centers in particular, will help the region accommodate future growth and limit development pressure on rural lands. Maintaining the current UGA boundary is critical to maintaining the regional open space network and limiting the development pressure on much of the network. Consistent with the Regional Growth Strategy, the region has seen a declining share of residential development occurring in the rural areas outside the UGA since the adoption of VISION 2040.

Actions

- Further focus growth within urban areas, while conserving critical open space services where they may still exist in the UGA.
- Retain a stable long-term UGA boundary.
- Promote rural land uses and management practices that limit impact on open space services.

Opportunities to do so are in VISION 2050, and county and city plan updates.

Potential Measures of Success

Stable UGA boundary, increasing share of new development occurring within UGA, meeting Puget Sound Partnership land cover targets.

6.1.3 Keep Working Lands Working


Snohomish County

Approximately 104,000 acres of farmland and 183,000 acres of working forests in the regional open space network have been identified as having conservation needs. Farms in particular are threatened by conversion to residential and commercial land uses. The land is typically flat and many farms are located closer to the UGA boundary. As such, farms have the highest conservation need in the open space network. Keeping these lands in production protects these lands against development and is essential to sustaining key open space services in the region including economic benefits, carbon sequestration, and fish and wildlife habitat. A large threat facing farms is increasing land prices and the associated development pressure. Maintaining agricultural viability will be necessary to conserve these lands.

Goal

Sustain agriculture and forestry lands and economies in the region.

Tools

Tools that are part of this strategy include:

- **Purchase of Development Rights (PDR).** Counties, cities, and nonprofits can continue to purchase the development rights from property owners and explore ways to expand existing programs. Ways to increase funding for PDR include resetting conservation futures levies to their original rates, expanding the Real Estate Excise Tax, and tapping into additional sources of funds such as the Natural Resources Conservation Service's Agricultural Conservation Easement Program and the US Forest Service's Forest Legacy Program. Increasing bonding capacity against conservation futures can allow counties to accelerate easement purchase.

- **Transfer of Development Rights (TDR).** TDR takes advantage of the high demand for development in urban areas to protect open spaces. To date, TDR has protected over 184,000 acres of forestland and some farmland in the central Puget Sound region. However, use of this tool has been concentrated in a few areas. Achieving an even larger scale of protection through TDR will require cities to expand their programs, and more cities to participate. Greater incentives for cities to participate are needed; the Landscape Conservation and Local Infrastructure Program can provide this incentive.

- **Agricultural and Forestry Designations.** Farmlands and working forests with zoning designations have experienced less development in recent years than undesignated working lands. About 36 percent of farms and 19 percent of forests do not have agricultural or forestry designations.

- **Technical Assistance.** Counties, conservation districts, and other agencies can help farmers and foresters implement conservation practices and develop management plans for their land and comply with regulations.
- **Economic Development.** Counties, cities, and other entities can help build up markets for local food through a variety of actions. This can include producing marketing materials and supporting farmers markets and farm-to-table efforts.

Actions

- Expand funding and sources for purchase of development rights.
- Improve regional TDR by expanding the number of cities participating as receiving areas. Areas where increased density is desired should be encouraged to use TDR.
- Maintain working land designations and expand designations to include additional farms and working forests wherever appropriate.
- Provide support for the agricultural sector. This includes supporting and building infrastructure and programs such as farmers markets, agritourism, food hubs, storage and distribution centers, commercial kitchens, and branding initiatives for local food.
- Improve support for beginning farmers and foresters, including operators of smaller farms and timber lands. As current farmers and foresters retire, this will help ensure that farms and forests aren't lost or removed from production.

Puget Sound – Regional Conservation Partnership Program

The Regional Conservation Partnership Program (RCPP) was created in the 2014 Farm Bill and funds several programs throughout the country. The Puget Sound RCPP is a partnership with the USDA Natural Resources Conservation Service and the Washington Conservation Commission with a goal of making coordinated investments that fund conservation practices within specific watersheds. Landowners within the watershed can request cost-share assistance to complete best management practices for improving water quality and salmon habitat. The program has $9 million in funding over 5 years. The Stillaguamish and Snohomish River basins and the Newaukum Creek basin are included in this program.

Potential Measures of Success

Acres of farmland and high threat working forests in the network conserved. Steady or expanded acreage of designated farmland and forestland. Steady acreage in active production (i.e., there is no net loss in these working lands). Acres of prime farmland protected from development.

6.1.4 Protect Remaining Key Habitat Areas

While maintaining the UGA boundary will help reduce development pressure and slow conversion of parts of the open space network, that alone will not be enough to safeguard these open spaces indefinitely. There are estimated to be approximately 175,000 acres of intact, key habitat in the

regional open space network (within the aquatic systems and natural lands categories) without long-term protection. These lands support species such as salmon, elk, migratory birds, and other mammals, amphibians, and fish.

Goal

Provide long term protection to the most essential habitat.

Tools


Mercer Slough, City of Bellevue

Tools to protect land for the long term include purchasing the land outright (fee acquisition) or a conservation easement. Counties, cities, and conservation nonprofits are the most likely candidates for acquiring open space lands. The primary challenge with these tools is that the conservation need exceeds currently available funding, so acquisition must be targeted. Lands that support multiple services may be desirable to prioritize. A second challenge with fee or easement acquisition is that they require willing landowners. A third challenge is the cost of maintaining land over the long term once acquired. Conservation easements are cheaper than fee acquisition and are generally preferable. Many land holders would find an easement more acceptable in that it allows them to continue owning and using their property. Conservation easements also avoid the need for a public agency or nonprofit to maintain the property over time. The decision to use one tool over the other is frequently determined by case-specific issues (preference of the landowner being a primary determinant). However, fee acquisition does make more sense in certain situations. These include:

- Inholdings and other areas of the network that would complete a larger set of fee-owned protected open spaces.
- Areas where public access is also desired.
- Areas with a high risk of property damage from flooding or other hazards.

Conservation easements are used to protect many habitat features on both undeveloped or partially developed private land. They can also be used to protect habitat on farmland and working forest and the money generated from selling the easement can help farmers and foresters financially.

A partial list of tools for funding fee and easement acquisitions includes:

- Open space bond issue.
- Resetting conservation futures to allowed limit.
- Real estate excise tax (REET).
- Parks levies.

Actions

- Use the regional open space network to identify potential lands for acquisition (fee or easement).
- Leverage multiple funding sources to focus on highest priority acquisitions with multiple benefits.
- Ensure conservation futures and impact fees keep pace with the need for preserving open space.
- Seek new and innovative funding sources such as countywide bond issues, ecosystem service markets and public private partnerships (See Conservation Toolbox, Appendix B).

Potential Measure of Success

Intact habitat under high threat of development is protected for the long term.

6.1.5 Support Urban Open Space and Increase Access to Nearby Open Space for Urban Residents

Urban open spaces improve the health and well-being of residents of the region, especially those with easy access to those open spaces. The region's park systems and urban green spaces are the key provider of open space services to urban residents on a regular basis. Maintaining and expanding urban open space will be necessary to ensuring the livability of urban areas and supporting the health of the region's residents. Currently there are places in the region where people do not have easy access to parks and open space. To address the highest priority gap areas, at least 47 new parks or green spaces are needed. Addressing these gaps will allow more residents to enjoy the benefits of open space.

While planning for urban open space investments, cities should work to minimize displacement risk, especially for low income and minority communities.

Goal

All urban residents in the region have access within their local communities to the mental and physical health benefits of urban open space.

Tools

Regional data on access gap areas (discussed in Chapter 5) can help local jurisdictions identify and prioritize programs and investments. Ensuring that all residents have access to open space will

Washington Park Arboretum, University of Washington, City of Seattle

require adding connections by expanding the regional trail network, local trails, and public transit options. It will also require adding new parks and open space. Adding parkland in already developed or rapidly developing areas is the biggest challenge to increasing park access and must be balanced with work to increase housing options and accommodate growth within the urban area. Tools to increase access include:

- Renovating existing open space and parks to maximize the utility of these properties.
- Cost-sharing among neighboring jurisdictions.
- Stacking benefits or uses: Develop new parks in conjunction with stormwater improvements, include public access in habitat restoration projects where appropriate.
- Partnering with school districts to make school grounds available to the public after hours.
- Providing publicly accessible open space with new development.
- Promoting public recreational access on privately owned lands. RCW 4.24.210 provides statutory recreational immunity so that landowners may open their lands for recreational use and be immunized from liability for unintentional injuries that occur on their land.[2]
- Planning for areas to serve as open space and limiting development in those areas.
- Grant programs from state agencies. For park grants, RCO reduces match requirements for communities in need and underserved populations. The Washington Wildlife and Recreation Coalition can provide information on grant programs and connect communities in need to assistance in developing grant proposals.[3]

In addition to improving access to local parks and open space, the region should also increase access to the many big, wild open spaces that the Puget Sound area is known for. This can be accomplished by expanding the regional trail network, and developing trailhead connection shuttles and buses that allow people to reach state and national parks via public transit. Demand and options for these types of services should be explored. Working with tribes and other stakeholders will help to minimize impacts to habitat and support tribal treaty rights.

Actions

- Add or enhance public transit routes that can connect people to open spaces.
- Identify areas where jurisdictions can share costs on new open space investments.
- Identify locations where access to school grounds can help close park service gaps.
- Create incentives to provide publicly accessible open space with new development.
- Increase urban tree canopy cover on private and public lands and rights-of-way through regulations, policies, and programs.
- Encourage the Legislature to:
  - Fund local government planning efforts with regards to park systems.
  - Remove restrictions on the Real Estate Excise Tax and grant programs for funding maintenance and operations.
- Expand park access analysis to consider health disparities.
- Consider displacement risk associated with open space investments and identify ways to mitigate it.

When prioritizing investments, it will be important to equitably target resources to address service gaps in underserved communities and ensure that improved access does not lead to displacement of existing residents. Maximizing safety through separation from roadways, controlled street crossings, and other efforts will also be important.

Potential Measures of Success

Increased percentage of residents within the urban growth area with easy access to urban open space. More miles of regional trails. Expanded trailhead shuttle options.

6.1.6 Build a Regional Trail Network

Pedestrian and bicycle trails provide important opportunities for transportation, recreation, and access to green spaces. Trails provide alternatives to commuting by car and are important for public health by providing opportunities for exercise and connecting people to open space. A regional trail network is necessary to maintain the Puget Sound region as an attractive and enjoyable place to live. Currently, the region contains 339 miles of trails/shared use paths.

The envisioned regional trail network contains 639 miles. Trail planning and development should strive to avoid environmental impacts, and even provide restoration where possible.

Goal

The region contains a robust network of trails that connects people of all ages and abilities to urban centers and recreation opportunities.

Tools

The region has developed an Active Transportation Plan that outlines actions to implement bicycle and pedestrian planning, projects, and programs.[4] The plan includes information on local implementation and funding.

Actions

The region has mapped an ambitious future network of trails. To develop this network, several actions can be taken:

Burke-Gilman Trail,
City of Lake Forest Park

- Close "missing links" along mostly completed trails to ensure continuous trails for users.
- Where underserved communities lack access to the regional trail network, close these gaps.
- Connect key existing regional trails to each other to extend their reach.
- Support local trails and nonmotorized facilities that provide access to the regional trail network.
- Complete two to three north-south trails across the region and one to two east-west trails in each county.

Potential Measures of Success

Miles of trail network built. Percent of residents with nonmotorized access to the regional trail network. Completion of a regional trail network that extends from north to south, and east to west, across the region.

6.1.7 Enhance Stewardship on Open Space Lands

Whether it is on farmland, forestland, or other types of land, many private landowners are preserving the open space services on their land through stewardship.[5] Stewardship is both a complementary strategy to preserving working lands and a strategy to delay the need to purchase key habitat lands. In many cases, successfully stewarded land in the open space network can remain in private ownership. Many landowners care deeply about their land and the responsibility to manage it sustainably for future generations. What they may need are resources and incentives to help balance the upfront costs of sustainable stewardship.

Within urban areas, enhanced stewardship on private land can help increase canopy cover, support healthier watershed processes, and provide benefits of open space for nearby residents.

Enhancing stewardship on public lands is also a component of this strategy. Public ownership helps preserve open spaces, but legacy management practices (intensive forestry, road density, paved areas, invasive vegetation) still impact these lands' ability to support watershed processes, wildlife habitat, and recreational and aesthetic enjoyment. With about 70 percent of the regional open space network in public ownership, improving stewardship on these lands can have a large effect on the quality of open space services being provided.

Goal

Preserve, enhance, and restore open space services on public and private lands through stewardship practices.

Tools

Tools to enhance stewardship on privately owned lands include:

- Stewardship support through conservation districts, local government, resource agencies, and nonprofit organizations.
- Stewardship programs administered by the Natural Resource Conservation Service, including the Wetlands Reserve and Enhancement Program, Conservation Reserve and Enhancement Program, Environmental Quality Incentive Program, Conservation Innovation Grants, and Wildlife Habitat Incentive Program.
- Financial support for organizations that assist landowners with stewardship actions.
- Public Benefit Ratings Systems.
- Forest and farm management plans.

*Snohomish Conservation District's certified farm planners visit farms (for free) and offer suggestions based on farmers' goals. The program can help cover the cost of farm improvements. The conservation district is developing an **Agriculture Resilience Plan** to help farmers in the district prepare for risks and potential impacts from climate change that could affect their ability to farm economically. Many farmers in the district have noticed changes to flooding patterns. The plan will help farmers better understand where and how often flooding is likely to occur, where groundwater levels may rise, and where saltwater inundation from sea-level rise may occur. The plan will also help farmers take advantage of longer growing seasons.*

- Alliances of small landowners engaged in resource conservation who support each other, work together to promote financial support for stewardship, and celebrate accomplishments.
- Ecosystem service markets.

The biggest challenges for enhancing stewardship on private property are landowner awareness of environmental issues, knowledge of tools and resources to better manage their land, and capacity to enact stewardship practices.

Washington State University Extension,[6] the Washington Department of Natural Resources,[7] and the four conservation districts in the region play an important role in working with private landowners to conserve, enhance, and restore open space services on private lands. They work with farmers and foresters to help them manage their lands for long term financial and environmental sustainability. They provide education, technical assistance, and grants to achieve conservation goals. However, they do not always have the funding to target outreach and provide broader education programs. Coordination with counties and cities with similar conservation goals may allow for some cost and resource sharing to expand outreach opportunities.

Public Benefit Ratings Systems creates an incentive for stewardship on private land by reducing property taxes in proportion to the open space services provided by the land. Landowners are given an incentive of lower property taxes in return for maintaining these open space services. Public Benefit Ratings Systems can encourage landowners to develop forest and farm plans. Developing management plans helps landowners to manage their land in an environmentally beneficial manner.

Ecosystem service markets are an emerging opportunity to conserve open spaces. Open space landowners enhance stewardship of their land to increase the services it provides and then sell these added services to other entities. In the region, the Nisqually Land Trust has purchased working forestland and implemented harvest practices that increase the amount of carbon stored on the land. They sold these carbon "credits" to Microsoft, which was interested in offsetting its carbon emissions. Many such opportunities likely exist across the region. The challenge is in identifying these opportunities,

Green Cities Partnership

Forterra is working with cities in the region to form partnerships around stewarding their green infrastructure, including forested parks and natural areas. The mission of the partnership is to advance healthy natural open space in urban areas. Cities develop strategic plans and the Green Cities Network provides a venue for cities to share resources, ideas, and ensure consistency in regional efforts.

Through the partnership, the City of Everett developed a 20-year Forest Management Plan that provides a framework for improving the health of the city's 354 acres of forest.

***Washington State University Extension** offers Forest Stewardship programs for family forest owners in Washington state. Coached Planning is a seven to nine week course that provides comprehensive forestry education to landowners. Landowners learn conservation practices that they can apply to their forests to improve habitat, forest health, wildfire risk and other ecosystem services. The program also offers online courses and seminars on various land management topics.*

finding interested partners, and developing markets or other means for selling and purchasing ecosystem services. The regulatory framework can both help and hinder this effort. Regulations that limit water quality and quantity impacts or carbon emission can create a market of groups interested in purchasing credits. However, regulations may also inadvertently limit the ability to create and sell credits.

Tools to enhance stewardship on public lands include:

- Green Cities Partnership, led by Forterra.
- National Association of City Transportation Officials' Urban Street Stormwater Guide.
- Ecosystem service markets.

Actions

- Coordinate and expand resources for landowner outreach, education, and assistance programs.
- Implement Public Benefit Ratings Systems that include watershed function-based standards.
- Explore opportunities for ecosystem markets and identify potential partners that may sell or purchase open space services. Research regulatory opportunities and barriers.
- Support collaboration between landowners, and with public agencies, to achieve shared conservation goals.

The region should monitor land cover on these lands to ensure that open space services are being preserved. If tree cover is decreasing in certain areas, a different approach may be needed to preserve open spaces in those areas. A methodology to monitor this will need to be developed.

Kitsap Conservation District runs the Rain Garden and LID Program. The district provides technical assistance and financial incentives to help landowners install and maintain rain gardens and other low impact development techniques.

Kitsap Conservation District

Potential Measures of Success

An increasing number of rural landowners in each county are enrolled in or participating in an educational or stewardship program. Counties have implemented robust Public Benefit Ratings Systems. Carbon, water, or other ecological credits from open spaces in the region are sold.

6.1.8 Restore Habitat in High Value Areas

While preserving remaining intact habitat is essential, that alone will not be enough to provide all of the open space services the region needs. Aquatic systems in particular have been degraded beyond their ability to sustain fundamental ecological functions in many places around the region. Flood storage capacity and salmon habitat have both been greatly reduced. At the same time, climate change will cause the region to need even more flood storage and cold water refugia for salmon in the future. Restoration of open spaces will be necessary.

The challenge with implementing these projects is funding — restoring degraded open spaces costs much more than protecting them in the first place. Further, the funding for restoration can compete with funding for other conservation and preservation actions. Regional coordination will be necessary to ensure spending on restoration and preservation is balanced appropriately and used in the most strategic locations. Marine shoreline restoration provides an opportunity for cost-sharing among watershed groups.

Goal

The ability of aquatic systems to support water quality and sustainable salmon populations is restored. Flood risks to property are reduced.


Sockeye Salmon

Tools

Each of the major watersheds in the region has undergone extensive planning both to help recover salmon populations and to address flooding. These efforts have identified many key locations where restoration can recover flood storage or salmon habitat, and in many cases both. Setting back levees, reconnecting floodplain habitat, increasing estuary habitat, softening marine shoreline armoring, and increasing riparian shading are crucial restoration activities that apply to most of the watersheds in the region.

Shoreline restoration in key areas can benefit salmon populations in multiple watersheds as anadromous salmon and trout use shoreline habitat regardless of their watershed origin. Local Integrating Organizations, which are caucuses of local governments, tribes, agencies, nonprofits and others supported by the Puget Sound Partnership, are one potential forum for cross-watershed coordination.

Mitigation banking provides another tool for restoring key habitats. Counties, nonprofit organizations, and some for-profit organizations have restored large areas of habitat across the region, particularly salmon habitat, which forms a mitigation bank. When new development or other activities have unavoidable impacts to habitat onsite, developers can purchase credits from a nearby mitigation bank (thus funding the original restoration) to compensate for their impacts. Importantly, mitigation banks do not represent a net gain in habitat function, but if well-planned and well-designed, can allow for large restoration projects in key locations for salmon habitat while impacts from development can be focused in areas less important for salmon.

Actions

Identify and implement marine shoreline restoration opportunities that will benefit salmon populations and other aquatic species in multiple watersheds. Restore floodplain connections and riparian habitat throughout the region. Appendix A lists such opportunities.

Counties, nonprofits, and other organizations can study the feasibility of using mitigation banking to restore wetlands, riparian areas, and other important habitat. These groups should ensure that mitigation banks are developed in every major watershed, as developers can purchase credits only within the same watershed as their project.

Potential Measures of Success[8]

More marine shoreline armoring is removed than installed. 2,500 new acres of estuarine habitat across the region. 10,000 acres of floodplain and side-channel habitat is reconnected. 7,000 new acres of riparian area have native vegetation cover.

6.1.9 Coordinate Planning Among and Within Agencies, Jurisdictions, Tribes, and Organizations

Green-Duwamish Watershed Interlocal Agreement

The 16 cities within the Green-Duwamish Watershed have come together with King County under an interlocal agreement to contribute funds to salmon recovery in the basin. Collectively, these jurisdictions share expenses for staff time, capital projects, scientific assessments, and planning efforts. The interlocal agreement has been extended twice and currently lasts until 2025.

Open space conservation has at times focused on a single interest. This can have unintended consequences when an area provides multiple open space services, such as river valleys that support salmon habitat and farming, and has flood hazards. Efforts to conserve one of these open space services can negatively impact the other services if all of the overlapping services and roles that the lands play are not considered during planning.

Land use and infrastructure planning in many parts of the region has generally not considered watershed context. Certain areas in each watershed are more appropriate for growth and commerce than others based on the locations of watershed processes such as infiltration, groundwater recharge, and storage, as well as locations of critical habitat. Decisions about where to locate these activities that do not align with watershed context can create issues with water quality in rivers and Puget Sound.

Goal

Planning efforts integrate ecological science and watershed context and incorporate the goals of diverse groups, resources, and departments.

Tools

Farm-Flood-Fish planning is being implemented in some counties where planning for fish habitat, farm conservation, and flood hazards are integrated to avoid unintentional impacts to a particular resource or open space.


Port Washington Narrows, City of Bremerton

Watershed planning is a tool that leads jurisdictions to consider watershed context during planning efforts. More coordination between land use planners, surface water and stormwater managers, and habitat specialists may be necessary to achieve effective watershed planning. This can be accomplished through developing basin-scale watershed plans that include land use, stormwater, habitat recovery and other considerations. *Floodplains By Design* is a program that funds integrated floodplain planning and projects identified from such planning. *Puget Sound Watershed Characterization* is a tool developed by the Department of Ecology that local planners can use in watershed planning.

Coordinated funding is an additional tool that could further watershed-based planning. With this tool, cities and counties within a watershed pool funding for preservation, restoration, infrastructure, or other such goals, and allocate that funding to projects across the watershed based on shared priorities. Coordinated funding can also be used across departments within a jurisdiction.

Interlocal agreements are a tool that jurisdictions within the same watershed can use to establish cost-sharing agreements to implement watershed planning.

Countywide hazard mitigation plans are a tool to access FEMA hazard mitigation grants which will fund open space projects, including green stormwater infrastructure. Jurisdictions should include in these plans open space projects that reduce risks from hazards such as flooding, wildfire, and sea-level rise (see Appendix F for maps of hazard mitigation data).

To implement this strategy, departments and organizations will need to closely coordinate with each other. This can take time and require that planners approach their missions differently

*The City of Duvall became interested in incorporating environmental and watershed issues into their city planning. They worked with the Department of Ecology to use watershed characterization to develop a **watershed plan** specific to the city. The plan was used in their comprehensive plan update to focus growth into appropriate areas, strengthen critical areas regulations, and improve forest cover and open space.*

*The Snohomish County **Sustainable Lands Strategy** brings together tribes, agencies and farmers to develop a vision for sustainable land management in floodplains. The strategy addresses the needs of farmers and fish, while minimizing flood risks. This work is stimulated by Floodplains by Design, a state funding source, that supports the kinds of multi-benefit projects that the Sustainable Lands Strategy aims to develop.*

from how they have in the past. Institutional inertia may be the biggest challenge to more coordinated planning. Watershed planning also requires jurisdictions to coordinate with other jurisdictions in their watershed to come to agreement on common goals and policies.

Actions

- Integrate planning across departments, tribes, and organizations to minimize conflicts among resource areas and to work towards multiple benefits.
- Consider the watershed context when planning, use watershed characterization, and develop interlocal agreements with neighboring jurisdictions where appropriate.
- Conduct a pilot project to test the use of coordinated funding.
- Update county hazard mitigation plans to include open space projects that reduce hazards. Upon plan approval by FEMA, cities and counties can then apply for grants for these projects.

Potential Measures of Success

Increased number of plans that incorporate multiple types of open space and plan for multiple benefits. Implementation of a coordinated funding pilot program.

6.1.10 Build Multi-Benefit Green Infrastructure

Green infrastructure is a designed system of elements that uses native vegetation, natural drainage patterns, and local ecology to provide essential services. It addresses stormwater runoff and drainage issues, provides access to open space for nearby residents, supports wildlife habitat and movement corridors, purifies air, and sequesters carbon from the atmosphere. At the community and site scale, green infrastructure consists of a variety of elements including street trees, bioretention swales, stormwater parks, trails, and urban forests.

Manchester Stormwater Park, Kitsap County

Green infrastructure is particularly important for improving water quality in the region's urban streams. From 70 to 90 percent of coho salmon die in urban streams before they can spawn because of polluted stormwater and degradation of stream structure due to excessively high stream flows. Pollutants have been found in the tissues of all species of salmon and in orca whales.

Goal

Improved quality of life and connections to nature. Urban streams and rivers provide a healthy environment for returning salmon.

Tools

Regional Coordination. Watersheds often include multiple jurisdictions, and water flows in one jurisdiction can affect another. The optimal location for green infrastructure is best identified by taking the whole watershed and the whole system of stormwater infrastructure into account. This provides an opportunity for jurisdictions to share costs on green stormwater infrastructure and reduce potentially redundant facilities in each jurisdiction.

> ***City Habitats***
>
> *City Habitats is a multi-sector coalition with the goal of addressing many of the region's challenges such as pollution, growth, health, habitat, and climate change through increasing nature within cities. City Habitats, with Stewardship Partners, convenes the annual Green Infrastructure Summit with representatives from the nonprofit, government, academic, and business sectors. Summit attendees work collaboratively to chart the development of green infrastructure in the region's urban areas.*

Tie-In With Parks. Green stormwater infrastructure can also help increase connections between people and open space. When well designed, these areas can act as parks and minimally developed recreation sites. Where stormwater departments can coordinate with park departments, they can address multiple conservation needs and further share costs.

Public Rights-of-Way. These areas provide a huge opportunity to increase green infrastructure in the region by adding and enhancing street trees and other vegetation. Biofiltration swales can be added in key locations to capture stormwater.

Additional tools for implementing green infrastructure are in the Conservation Toolbox (Appendix B).

Actions

- Identify the highest priority areas for protection and restoration/retrofit, especially within watersheds.
- Plan for green infrastructure through comprehensive plans, stormwater plans, and capital facilities plans.
- Identify funding and incentives for green infrastructure planning and construction.
- Create incentives and encourage the development of green infrastructure with new development.

Potential Measures of Success

Site planning and infrastructure planning incorporate more green and recreational elements and other potential benefits. Water quality and runoff flow in urban streams improves. Salmon pre-spawn mortality in urban streams decreases.

6.2 Conservation Opportunities

This section highlights several conservation opportunities across the region. This is not a full list of conservation needs in the region. Rather, this list demonstrates the range of conservation opportunities that exist in the region and how some of the above strategies can be used. Appendix A contains a more complete list of conservation opportunities throughout the region.

Whitehorse Mountain, Snohomish County

Stillaguamish Basin — Whitehorse Trail and Streambank Restoration

Snohomish County is planning the extension of the Whitehorse Trail between Arlington and Darrington. Portions of the trail are on the Stillaguamish River. In addition to providing opportunities for active transportation and open space access, mitigation from the development of the trail could be used to restore parts of the streambank to improve salmon habitat. Shading from additional trees will cool the water, providing improved resilience to climate impacts.

Snohomish River Basin — Sustainable Lands Strategy in Snohomish County

The Snohomish County Sustainable Lands Strategy brings together tribes, agencies and farmers to develop a vision for sustainable land management in floodplains. This work is stimulated by Floodplains by Design, a state funding source, that supports the kinds of multi-benefit projects that the Sustainable Lands Strategy aims to develop. The process will help determine where Transfer of Development Rights and Purchase of Development Rights programs can be expanded to protect additional farmland. It will also identify areas where land should be acquired for restoration. Some areas with willing landowners will be targeted for stewardship projects.

Cedar - Sammamish River Basin — Forest and Stream Stewardship in King County

The WRIA 8 Chinook Salmon Conservation Plan recommends protecting and restoring riparian vegetation and forest cover in headwater areas. The plan identifies the need to work with landowners to achieve these goals. Riparian forests help shade streams and provide plant material for the foodweb. Headwater forests help regulate water quality and water quantity and will allow the watershed to be more resilient to climate change impacts. Focus areas for enhancing stewardship practices in riparian areas have been identified throughout the watershed. Focus areas for enhancing stewardship of headwater forests to retain and increase canopy cover are the Bear Creek basin (particularly the upper Bear Creek basin, and Cottage Lake Creek and Cold Creek sub-basins) and Issaquah Creek basin (particularly Carey and Holder Creeks, Middle Issaquah Creek, Fifteenmile Creek, and East Fork Issaquah Creek sub-basins). The King Conservation District has programs to help landowners restore riparian buffers and manage their forests to increase ecological health and can directly help achieve the goals of protecting and restoring this forest and vegetation cover.

Green - Duwamish River Basin — Downtown SeaTac Stormwater Park

The community in the northern part of the SeaTac regional growth center is home to many people of color and people with low incomes. Health outcomes could be improved by adding a neighborhood park in this area, which is currently lacking. The area also has stormwater management needs. This provides an opportunity to develop a facility that provides both recreational/open space opportunities for the residents and stormwater management for the area. Green and gray stormwater infrastructure can be incorporated into a new park to provide community, economic, and environmental benefits. Coordination between the parks and recreation department and the public works (stormwater) department will allow the groups to pool resources and save on land acquisition costs, development costs, and management costs. This regional stormwater facility could also facilitate redevelopment of the area if developers were able to pay a fee to support the regional facility in lieu of providing stormwater management onsite.

Puyallup River Basin — Levee Setback Projects in Pierce County

Pierce County has identified several locations along the Puyallup, Carbon, and White rivers where levee setbacks can increase flood storage area and relieve flooding on developed areas. These sites also provide an opportunity to enhance and increase salmon habitat by recreating side channels and adding habitat features such as log jams. To implement these projects, Pierce County must acquire the land by the levee — this can be up to half the cost of the project.

Nisqually River Basin — Nisqually Community Forest Expansion

The Nisqually Land Trust has been working with the Nisqually Indian Tribe, the Nisqually River Foundation and the Northwest Natural Resources Group to develop a community forest in the Nisqually River watershed.[9] In 2015, the Nisqually Land Trust obtained a grant from the Community Forest Program, which helped the group purchase 640 acres of forestland. They are managing this forest to support the recovery of salmon populations in the Nisqually basin and plan to acquire

additional forestland to augment the community forest. Funding to support the expansion of the community forest could come from a variety of sources including grants, ecosystem service credits, or partnerships with other interested parties.

Port Gamble, Kitsap County

Kitsap Basin — Projects to Protect Remaining Intact Shorelines in North Kitsap County

The Kitsap Forest & Bay Project is a landscape-level effort to conserve up to 6,700 acres of forest, wetlands and shoreline surrounding Port Gamble Bay in north Kitsap County. Kitsap County, Port Gamble S'Klallam Tribe, Suquamish Tribe, Forterra, Great Peninsula Conservancy and a coalition of 30 local and state agencies, businesses and community groups are working in partnership to implement this comprehensive conservation strategy.

6.3 Property Tax Implications of Open Space Conservation

Public ownership, easements, and current use taxation can potentially result in a side effect of reducing sources of tax revenue. As property is removed from tax rolls or its development potential reduced, the tax revenue related to that specific property could be lost or reduced. Conservation of lands in the regional open space network is not expected to have a significant impact on tax rolls.

Almost all farmland and working forests identified for conservation are already enrolled in current use taxation programs and, as such, pay property taxes on the current use of the land and not the highest and best use. Acquiring conservation easements on these lands would not change the property taxes paid by these lands.

Many of the remaining open space areas identified for conservation include floodplains, wetlands, steep slopes, and areas without access. Due to these factors, the current assessed land value and tax revenue from these lands is less than with more urban lands.

As acquisition of open spaces occurs, agencies often look to preserve the most vital open space areas. A result can be retaining a wetland and habitat area in perpetuity, for example, while segregating the remainder portion of the land for future development. This technique can shift the development potential to the more suitable portion of a site and maintain the tax revenue from future development.

At a regional level, the impact on tax revenue is likely to be limited so long as there are adequate opportunities for development to occur. Tax revenue is based on assessed value, which is directly related to the value of buildings, or "improvements," on a site. Overall tax revenues in the region will be maintained, provided that there is space for new development and buildings to occur. Past examples have demonstrated that redevelopment of urban areas can result in a greater increase of improvement value than lower density development of green field locations. If the regional plan continues to support development within urban locations, it will maintain the opportunity for tax revenue growth at a regional level.

When open space is acquired in urban locations, where development potential and property values are higher, it may have a more direct impact on property tax revenue. However, preserving open space often tends to increase property values for nearby and adjacent lands. Cities regularly experience this with park development. While new park land would remove that land from tax rolls, the increased value of properties surrounding a new park can offset the loss of tax revenue from the park land.

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[1] RCW 36.70A.160. Identification of open space corridors. http://app.leg.wa.gov/RCW/default.aspx?cite=36.70A.160.

[2] RCW 4.24.210. Liability of owners or others in possession of land and water areas for injuries to recreation users. http://apps.leg.wa.gov/rcw/default.aspx?cite=4.24.210.

[3] Washington Wildlife and Recreation Coalition. Our Work. https://wildliferecreation.org/.

[4] PSRC. 2018. Active Transportation Plan. https://www.psrc.org/sites/default/files/rtp-appendixl-activetransportationplan.pdf.

[5] Puget Sound Conservation Districts. http://www.pugetsoundcd.org/pdf/PCSD-Caucus-Who-We-Are-and-What-We-Do.pdf.

[6] WSU Extension. Forestry. http://forestry.wsu.edu/nps/.

[7] DNR. Forest. Forest Stewardship Program. https://www.dnr.wa.gov/programs-and-services/forest-practices/small-forest-landowners/forest-stewardship-program.

[8] These acres come from WRIA salmon recovery plans across the region that have identified goals for restoration. Not all WRIAs have calculated specific restoration needs and these numbers should be revised when additional numbers are available.

[9] Nisqually Land Trust. 2017. Nisqually Community Forest. http://nisquallylandtrust.org/our-lands-and-projects/nisqually-community-forest/.

7 From Plan to Action: First Steps

What are next steps to implement this plan?

Bloedel Reserve, City of Bainbridge Island

To help accelerate conservation in the region, this plan must be used by conservation organizations, including counties, cities, other public agencies, and nonprofits. Crucially, collaboration among these groups will be necessary to use resources efficiently and effectively. The strategies, actions, and tools described in Chapter 6 are the toolbox that these partners will need to draw from to increase conservation. PSRC will promote the use of this plan as the region's conservation action plan. PSRC has already engaged with regional partners throughout the process of developing this plan, particularly with cities and counties who make up the majority of PSRC's membership.

Engaging other partners beyond PSRC membership will be critical. The ROSS project identified convening a collaborative alliance as a key strategy in its final strategy report. One organization that is particularly well suited to enhance collaboration is the *Emerald Alliance for People, Nature and Community*. The Emerald Alliance is a new multi-sector effort that aims to enhance collaboration to support the conservation of open space in the region. The Emerald Alliance can serve as a forum to engage partners across the region, helping to broaden collaboration to other sectors, as well as work with PSRC and government organizations.

PSRC will work with the Emerald Alliance and other partners, including counties, cities, conservation nonprofits, state and federal agencies, tribes, and resource lands groups on implementing strategies and actions listed in this plan, such as increasing awareness of the importance of open space access and conservation, and coordinating on conservation opportunities. Some illustrative conservation opportunities are highlighted in Chapter 6, and a more complete list of opportunities is in Appendix A.

An important role for PSRC will be to assist member jurisdictions interested in incorporating aspects of this plan into their own planning and work programs.

7.1 Put the Plan into Action

Chapter 6 describes key open space conservation strategies and Appendix B describes tools to help implement these strategies. Key actions that PSRC and partners can take to begin implementing this plan are described below.

7.1.1 Estimate Costs and Funding Needs

This plan identifies 463,000 acres of open space land at risk, 300 miles of trail needs, and 47 locations that need urban open space investments. The cost to acquire open space lands (either out-right or through conservation easement) and maintain these lands (including parks and recreation areas) should be estimated. An additional task could be to estimate the current level of funding for conservation across the region to determine the shortfall in funding to address the needs identified in this plan.

7.1.2 Advance the Use of Key Conservation Tools

Some tools could be enhanced and shared so that they are more effective and widely used across the region. Several promising tools to advance conservation, along with ideas to make them more effective, are described below. These tools were identified in consultation with the plan's advisory committee as priorities to advance this plan over the short to medium term.

Transfer of Development Rights (TDR)/Land Conservation and Local Infrastructure Program (LCLIP). More land in the regional open space network can be conserved through greater use of the regional TDR program. PSRC boards and committees could be a path for communicating this opportunity, including improvements to the program. As described in Chapter 6, achieving an even larger scale of protection through TDR will require cities to expand their programs and for additional cities to participate.

Nisqually Carbon Credits

As part of a voluntary $20 million-a-year initiative to offset 100 percent of its carbon emissions worldwide, Microsoft paid the Nisqually Land Trust for carbon stored on a 520-acre property. The carbon credits were certified under the rigorous California carbon offset protocols. The Nisqually Land Trust is managing their forest to increase the quantity of carbon stored, which has side benefits of increasing groundwater recharge and wildlife habitat.

Ecosystem Services Markets. Funding conservation through ecosystem service markets is not common in the region. Given the high-value services that open spaces provide, this is a promising tool that could be more widely used. The most common ecosystem service markets are carbon markets and water quality markets. To further ecosystem service markets, entities such as the state, utilities, corporations, and others for whom there is a vested interest should work together to explore the development of a program. One early step would be an analysis of potential ecosystem service market credits and the market potential for selling them. It will be necessary to work closely with regulatory agencies as many markets are hinged on helping purchasers of credits comply with environmental regulations.

Return on Investment Analysis. Until recently, the benefits provided by natural systems have not been included in accounting or economic analysis; effectively, they have been valued at zero.

This often led to minimizing investment in natural systems to reduce project costs. Now, with better economic tools and information on natural systems, reliable dollar values can be assigned to the benefits that flow from open space in the region. With fully valued benefits, the value of projects that conserve and integrate natural systems become more apparent. To understand the value of conserving land in the regional open space network, a return on investment analysis could be performed by county and open space category, and for the region as a whole. This would help elected officials and others to consider policy or expenditure trade-offs and make the case for why open space conservation is a good investment and worth paying for.

Watershed Management Plans. Few watershed management plans have been completed in the region. These integrated plans make recommendations based on current and future land use, watershed characteristics, water quality, and other factors across a watershed. They can identify stormwater and other infrastructure needs, recommendations for changes in land use, habitat restoration projects, public engagement strategies, and other strategies and improvements. The integrated approach can also help to identify multi-benefit green infrastructure opportunities. These plans should involve all jurisdictions in the watershed. Encouraging the development of a few pilot watershed plans in basins that are ready to take that step could provide examples and lessons learned for other basins in the region. Funding for jurisdictions to be able to participate in this process may be needed. A possible source is National Estuary Program funds distributed by the Puget Sound Partnership through its Action Agenda. Other possible funding sources are listed in Appendix B, Conservation Toolbox, under Planning and Regulatory Tools.

Pierce County Needam Road Project

The Needham Road project is located in the Puyallup River floodplain about four miles south of Orting. Repeated flooding has caused erosion, leaving only remnants of the costly historic levees. Led by Pierce County, the project involved the removal of levee fragments, purchase and deconstruction of multiple homes, habitat restoration, and construction of a new setback levee. The investment provides substantial financial and environmental returns, including avoided flood damages to residents and businesses, improved salmon habitat, reduced soil erosion, and enhanced recreation opportunities, among other benefits. If this project had not been completed, the county would continue to pour millions of dollars into the failing infrastructure and would miss the opportunity to rebuild critical habitat that will contribute to the economy for generations. With a total cost of $8.1 million and a calculated benefit of $165 million, the return on investment of the project was 2,000 percent.[1]

Bear Creek Watershed Management Study

King County, Snohomish County, Redmond, Woodinville, and Washington State Department of Transportation have recently completed a watershed management plan for the Bear Creek basin. This plan assesses current conditions in the basin, predicts future changes, and identifies recommended actions to improve stormwater quality and improve instream habitat, wetlands, and riparian areas.

Multi-Benefit Green Infrastructure. Multi-benefit green infrastructure projects can be difficult to plan, design and finance due to institutional and funding barriers. PSRC could facilitate the sharing of lessons learned from such projects that have already been completed. PSRC could also identify barriers and opportunities to overcome the barriers. A next step could be to help secure funding for multi-benefit green infrastructure, such as stormwater parks that manage stormwater and provide green recreational space in regional growth centers currently lacking that infrastructure. Cities that are interested in participating in a pilot project would need to identify land for the park and be willing to dedicate public works, parks, and planning staff time to plan the project.

Prince George's County in Maryland and Corvias Solutions are solving stormwater regulatory challenges through the Clean Water Partnership. The Clean Water Partnership designs, constructs, operates, and maintains green stormwater infrastructure for the county. The Clean Water Act fee, a fee collected from property owners by Prince George's County, is being used for the Clean Water Partnership. Private investment is being used to leverage this funding stream.

Conservation Finance. Conservation finance tools can harness private financing mechanisms to provide capital for public projects that have an environmental purpose. Futurewise recently convened regional conservation leaders and experts to identify conservation finance opportunities for the region. To build on this convening, Futurewise is researching innovative financing techniques such as Pay for Success, Environmental Impact Bonds, Credit Trading, and Community-based Public Private Partnerships, to better understand the barriers and opportunities of these different tools and broaden the audience for their use, along with partner organizations. Futurewise is also exploring opportunities to build capacity for larger scale green stormwater infrastructure maintenance that would provide job training opportunities. PSRC will continue to monitor findings and consider appropriate ways to contribute to the project.

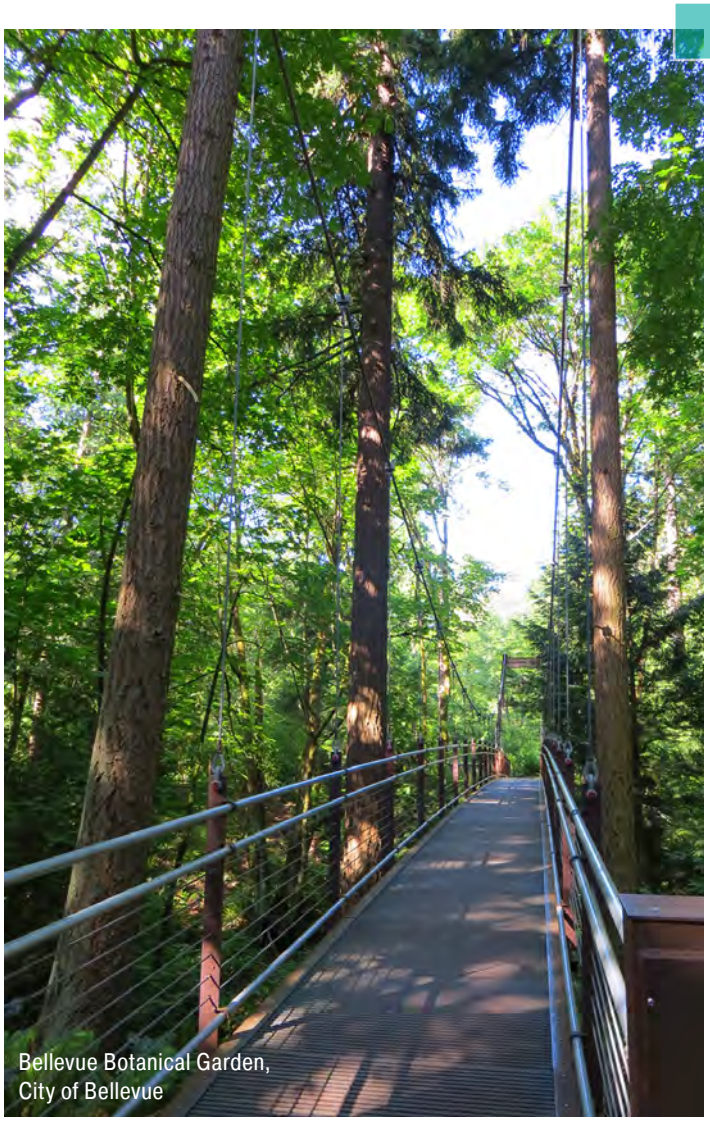

Juanita Bay Park, City of Kirkland

Hazard Mitigation Plans. The Federal Emergency Management Agency (FEMA) provides grants to local jurisdictions through their Pre-Disaster Mitigation Program and Flood Mitigation Assistance Program than can be used for open space projects. Jurisdictions that identify open space projects that mitigate against natural disasters must incorporate these projects into their FEMA-approved hazard mitigation plans to be eligible for these funds.

7.1.3 Incorporate the Regional Open Space Conservation Plan into VISION 2050

The development of VISION 2050 provides an opportunity to update open space information, policies, and actions to continue to reduce development threats to open space and increase conservation. Open space topic areas to consider in the VISION 2050 planning process include:

1. Focusing growth within a stable urban growth area.
2. Protecting and restoring lands in the regional open space network.
3. Avoiding impacts of development on the regional open space network.
4. Promoting open space access for all people.
5. Protecting and improving the health of Puget Sound and aquatic systems in the region.
6. Treating water as a resource.
7. Advancing multi-benefit green infrastructure.
8. Expanding tree canopy protection.
9. Encouraging stewardship of open space lands.
10. Identifying planned regional trails in both the regional transportation network and the regional open space network.



Bellevue Botanical Garden, City of Bellevue

11. Planning for parks and other urban open spaces to support mixed-use centers and compact growth.
12. Protecting tribal treaty rights.

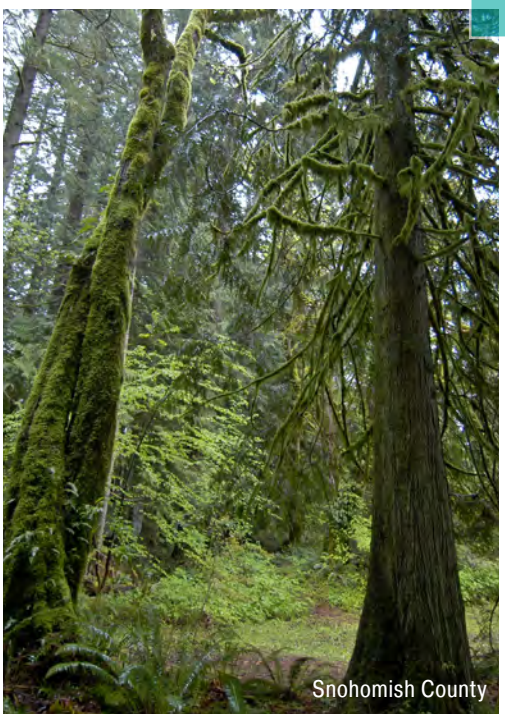
Information on open space services, the regional open space network, access to open space, and other information from the plan can be used to update the environmental baseline chapter and environment and development patterns sections in VISION 2050.

The steps outlined in this chapter will help assess actions in VISION 2050 and may result in new environmental actions, such as:

- Participate in regional environmental planning efforts that help jurisdictions protect open space, the environment, and human health.
- Provide technical assistance on open space issues and connect jurisdictions with collaborative partners and resources.
- Participate in planning to prioritize and implement transportation stormwater retrofits to improve water quality.

7.2 Track Performance

The performance measures listed here are proposed aspirational goals and benchmarks to measure the progress and success of the plan. PSRC manages many types of data for its programs, and will look for opportunities to track the performance measures listed below.


Snohomish County

7.2.1 Long-term Land Protection

The preservation of open space can be tracked using regulatory, ownership, and canopy cover data. By 2050:

- Working lands designations will be maintained, and enlarged where feasible.
- 104,000 acres of farmland are protected through conservation easements to increase the viability of local farming and improve food security in the region.
- 183,000 acres of working forests are protected through conservation easements to increase the viability of forestry and provide forest products.
- 93,000 acres of aquatic system lands are protected through land purchase or conservation easement to secure habitat and protect communities from flooding.
- 82,000 acres of natural lands are protected through land purchase or conservation easement to secure habitat and increase recreational opportunities.

7.2.2 Short-Term Land Protection

Ongoing and emerging efforts will help protect areas of the regional open space network by land purchase or conservation easement in the near term. One example of a current effort is King

County's land conservation initiative which, if successful, will conserve more than 65,000 acres of high conservation value lands within a generation.

- Short-term protection goal: An additional 80,000 acres of open space has long-term protection by 2025.

7.2.3 Tree Canopy Cover

As described in Chapter 3, tree canopy covers 54 percent of the region. Within the regional open space network, it covers 60 percent.

- By 2050, tree canopy cover for the region is 54 percent, or no net loss over time.
- By 2050, tree canopy cover in the regional open space network has increased.

7.2.4 Urban Parks, Trails, and Open Space Access

Chapter 5 describes access to parks, open space and trails and identifies gaps in access to these resources.

- By 2050, every urban resident will live within a half mile of a park, open space or trail.
- By 2050 the regional trail network will be expanded to include 300 additional miles of trail.

7.2.5 Puget Sound Partnership Indicators and Targets

PSRC, the Emerald Alliance, and other partners will continue to coordinate with the Puget Sound Partnership as implementing this plan will greatly contribute to the recovery of Puget Sound. To track progress toward recovery goals for Puget Sound, the Puget Sound Partnership chose a set of measures called the Puget Sound Vital Signs.[2] The tracking and reporting of Vital Signs is the foundation of the shared measurement system the Partnership relies on to show collective impact. PSRC can track how it is contributing to progress using data from the State of the Sound reports. The Vital Signs that are the most closely tied to the work of PSRC are in the Land Cover & Development category. A description of the indicators in that category are below.

Puget Sound Partnership

The Puget Sound Partnership is the state agency leading the region's collective effort to restore and protect Puget Sound. It brings together hundreds of partners to mobilize action around a common agenda, advance sound investments, and advance priority actions by supporting partners. The biennial State of the Sound report helps partners and decision makers better understand progress on the recovery effort.

Growth in Urban Growth Areas (UGAs). This indicator tracks the proportion of population growth occurring within UGAs. The 2020 recovery target for this indicator is that 86.5 percent of population growth occurs within UGAs. Puget Sound basin-wide population growth occurring within UGAs was 83 percent between 2000 and 2010. For the central Puget Sound region, PSRC data from recent years show this advancing to over 95 percent.

Rate of Forest Loss Cover to Development. This indicator is measured by the number of acres of non-federal forest land cover converted to development. The 2020 target is a rate of forest loss of 1,000 acres per year. The status of this indicator is improving relative to the baseline reference, and is making progress toward the 2020 target.

Conversion of Ecologically Important Lands. This indicator tracks ecologically important lands under development pressure in Puget Sound watersheds. The 2020 target is for a 0.15 percent rate of conversion of ecologically important lands. Estimates of conversion of ecologically important lands to development show that this indicator is losing ground. The five-year baseline rate of land cover change on the indicator land base across all 12 counties in Puget Sound for the period 2001-2006 was 0.28 percent and increased to 0.36 percent over the period 2006-2011.

Riparian Restoration. The riparian vegetation restoration indicator measures the amount of vegetated cover restored along riparian corridors. Cumulatively, from 2009 to 2014, restoration of riparian vegetation has occurred along an estimated 135 linear miles of streams and rivers, about half of the 2020 target of 268 miles of riparian restoration.

Implementing the regional open space conservation plan will help move these and other indicators in the right direction.

7.3 Update the Regional Open Space Conservation Plan

This plan is a snapshot in time. It will need to be updated and improved over time as conservation in the region progresses and lessons are learned. The plan should be updated every 5 to 8 years. The focus of regular updates could include:

- Updating the regional open space network map to include updated or new and better sources of data. If data sources are available, additional analysis on park quality, restoration needs, and urban open space corridors could be included.
- Updating the priority tools and strategies as progress is made over the short/medium term and new innovative approaches become available.
- Updating the conservation opportunities listed in Appendix A as current opportunities are addressed and better understood and new needs are identified.
- Updating protection status to track performance (ideally ongoing or yearly).

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[1] Earth Economics. Return on Natural Capital Investments. ROSS Final Strategy Report Appendix F3. http://openspacepugetsound.org/sites/default/files/final-report/appendices/F_ECOSYSTEM-SERVICE-FACT-SHEETS/Earth-Economics-Return-on-Investment-Brief.pdf.

[2] Puget Sound Partnership. 2017. Puget Sound Vital Signs. http://www.psp.wa.gov/vitalsigns/index.php.

Point Defiance Park, City of Tacoma

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