ECONOMIC ANALYSIS OF OUTDOOR RECREATION IN WASHINGTON STATE

2020 UPDATE

EARTH ECONOMICS

REPORT CORRECTION

EARTH ECONOMICS

OCTOBER 2025

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Since 2015, Earth Economics has completed three analyses of outdoor recreation for the Recreation and Conservation Office. Over this time, research methods, data, and industry best practices have changed, resulting in substantive differences between the 2020 and 2025 reports. This document highlights key differences to help readers understand the 2015, 2020, and 2025 *Washington State Economic Analysis of Outdoor Recreation* reports. It also details important corrections to the 2020 report based on updated approaches to estimating participation and the economic value of ecosystem services. This document revises some 2020 numbers using newer 2025 methods. It also highlights an overcount in the 2015 report that was not clearly addressed in 2020.

Table 1 applies the most up-to-date methods from 2025 to adjust the 2020 visitation estimates. **The 2020 report estimated $26.5 billion in spending and 581 million recreation days. However, when applying updated methods, those totals become $21.9 billion and 468 million days.** The differences between these totals are due to improved approaches for estimating visitation, not real-world changes in participation. Thus, estimates from the 2025 report should be compared to the 2020 revisions provided below. Finally, detailed results for specific activities or counties should not be directly compared across reports without accounting for these updates.

TABLE 1. COMPARING PARTICIPATION AND SPENDING IN 2019, USING THE ORIGINAL METHODS FROM THE 2020 REPORT AND METHODS FROM 2025 STUDY (2019 U.S. DOLLARS).

METHOD	PUBLIC WATERS PARTICIPANT-DAYS (2019)	PUBLIC WATERS TOTAL SPENDING (2019)	TOTAL PARTICIPANT-DAYS (2019)	TOTAL SPENDING (2019)
Original 2020 Values	123,720,000	$6,890,000,000	581,500,000	$26,480,000,000
Adjusted 2020 Values	37,050,000	$2,760,000,000	468,157,000	$21,860,000,000
Difference	-86,670,000	-$4,130,000,000	-113,343,000	-$4,620,000,000

PARTICIPATION UPDATES

To address limitations in the 2020 report, those data were reanalyzed using updated 2025 methods. This produced new visitation and spending estimates shown in Table 1 that minimize overcounting and make year-to-year comparisons more consistent.

Key updates include:

- **Mobile device data:** These were used to estimate visits to lands managed by the Washington Department of Natural Resources and the Washington Department of Fish and Wildlife, and to identify the home ZIP codes of visitors, including those from out-of-state.
- **Participation data:** Survey results from the *2023 Washington State Recreation and Conservation Plan* (also known as SCORP) were refined to reduce overcounting, particularly for activities on public waters. These rates were applied only to adults who reported recreating in the previous year.
- **Local parks visitation:** The 2020 report estimated that visits to local parks accounted for about 43 percent of all visitation. Using mobile device data and the improved SCORP benchmarks, new estimates indicate that local parks visitation is closer to 30 percent.
- **Spending estimates:** To reduce potential overcounts, similar but distinct activities (e.g., floating vs. motorized boating) were counted separately.
- **Local vs. nonlocal use:** While site-specific mobile device data could not be used to estimate 2020 visitation, mobile device data were used to better distinguish local from nonlocal visitors and their economic impact.

These adjustments support clearer comparisons between 2020 and 2025 (but not 2015).

Public Waters

To clarify, the previous reports used methods that included a known overcount in participation, which was recognized in the 2015 report but not fully explained in the 2020 report. This document better addresses the overcount by describing the underlying issue and showing how it was corrected in the 2025 report.

All three studies (2015, 2020, and 2025) report participation by land management type (e.g., local parks, federal lands) and activity (e.g., paddle boarding, hiking, fishing). However, in the 2015 and 2020 reports, public water activities were included in the visitation estimates by management agency, which resulted in overcounts of those activities. For example, if someone went to a state park to paddle board, the visit was included in the State Park total *and* the paddle boarding total.

The 2015 report explicitly recognized and explained this problem, but the 2020 report did not. This context is critical in presenting clear numbers to the reader. The largest overcount occurred in public waters (e.g., lakes, rivers, Puget Sound) when visitors accessed them through public lands. Estimates of private access to public waters were unaffected.

The 2025 report adjusts for this overlap. Using updated methods, it was found that public water participation reported in 2020 was overstated by about 70 percent (see Table 1).

ECOSYSTEM SERVICES VALUATION UPDATES

Industry best practice for ecosystem services valuation has advanced considerably in the past decade, as has the supporting literature. One key innovation concerns the role of spatial context in determining value. For instance, the aesthetic benefits of urban forests are generally valued more highly than those from rural forests. While this difference was understood in 2020, the 2020 report did not include spatial considerations in its ecosystem services valuation to remain consistent with the 2015 methods. This led to higher estimates of the aesthetic value of forests than current best practices would produce. The 2025 report adopts this more modern method, improving accuracy by accounting for where and how services are produced.

Two main factors reduced the 2025 ecosystem service valuation totals in comparison to 2015 and 2020:

1. **Spatially explicit methods** that limit overgeneralization
2. **Updated unit values** ($/acre/year) from the most recent literature, which are generally lower than earlier estimates.

These changes reflect improved methods and newer data rather than declines in ecosystem condition. For year-over-year interpretation, the 2025 unit values are the most appropriate baseline. Earlier unit values are not directly comparable without adjustments. To underscore, differences in the 2020 and 2025 ecosystem service valuation estimates reflect changes in methods, *not* real-world trends.

WHAT THIS MEANS FOR 2020 RESULTS

This document provides adjusted 2020 visitation and spending totals that do the following:

- correct overcounting for activities associated with recreation on public waters.
- apply participation rates to adult recreationists only.
- recalibrate the proportion of local park visitation.
- differentiate spending by activity.
- adjust for out-of-state visitors.

To ensure valid comparisons, these corrected 2020 values should be used alongside the 2025 results rather than the original 2020 values, which are not directly comparable. The revisions reflect improvements in methods and data, rather than changes in actual 2019 visitation or spending behavior. When examining visitation and spending trends, readers can compare 2015 (noting the overcount) with the 2020 updates provided here, and results in the 2025 report.

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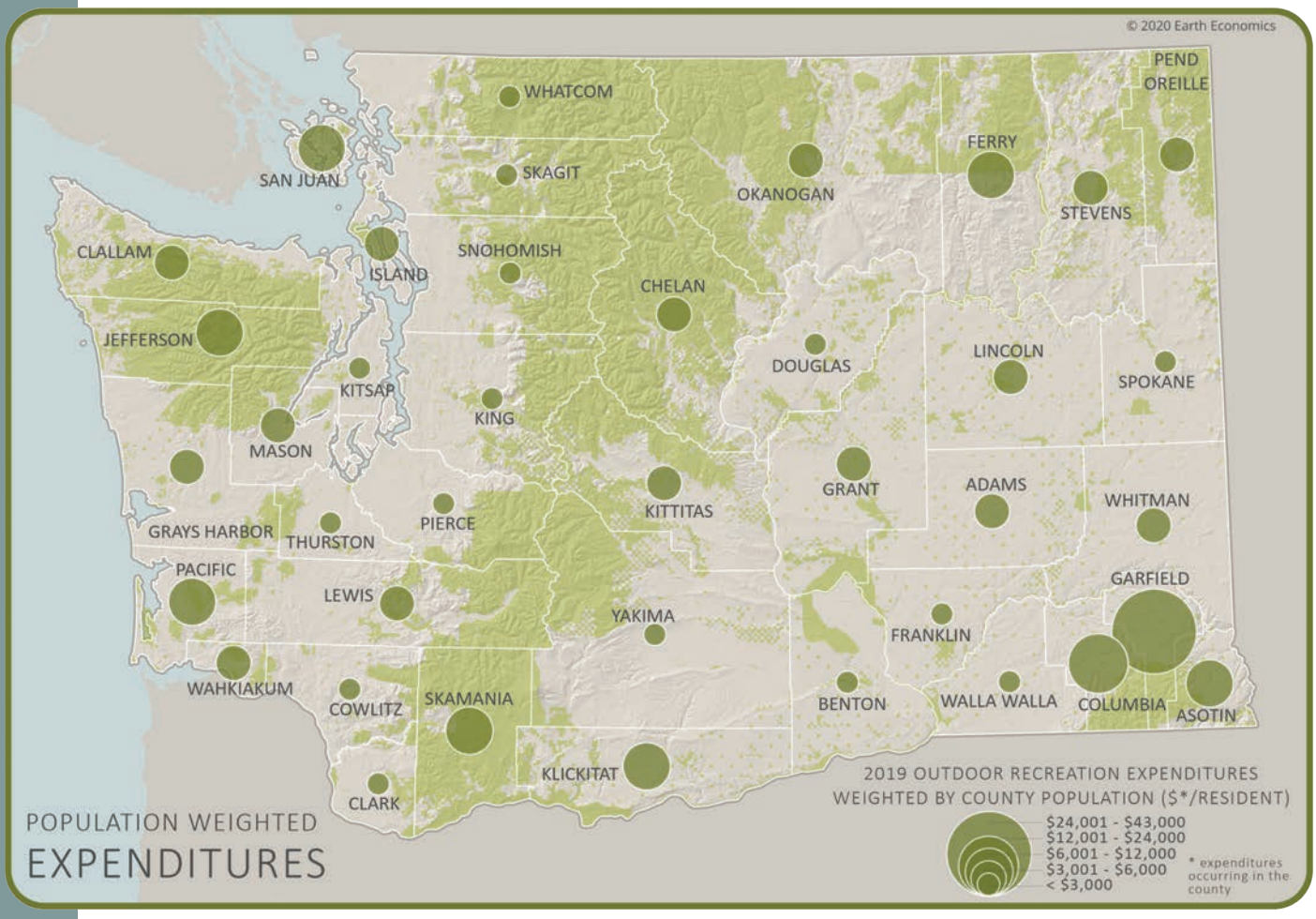
EXECUTIVE SUMMARY

In a state where aerospace, information technology, and agriculture reign supreme, there is one industry giant looming in the background; a presence felt by all. Washington State's outdoor recreation economy is one of the most extensive industries in the state, from Neah Bay on the Olympic Peninsula to the Snake River in eastern Washington, and everywhere in between, the outdoor recreation industry is found.

Building off an analysis conducted in 2015, **this report estimates that outdoor recreation in Washington supports $26.5 billion in annual expenditures.** This spending is largely a result of spending by residents and tourists on outdoor recreation trips, including trips to local parks, state parks, national forests and parks, fishing, and boating, and on outdoor recreation gear. Trip-related spending in Washington is estimated to be $18.8 billion. This analysis also finds strong consumer spending on outdoor recreation gear, equipment, and repair services is estimated to be an additional $7.7 billion.

This spending goes on to support 264,000 jobs throughout Washington. This means that for every $1 million spent on outdoor recreation, 10 jobs are supported. Outdoor recreation is such a strong job supporter in Washington that 1 in 17 or 6 percent of all jobs in Washington are tied to spending on outdoor recreation. The average labor income associated with these jobs was $44,000 per year. This totaled to nearly $12 billion in wages for Washington workers. Additionally, when this estimate is compared to the 200,000 jobs estimated in the 2015 report, the industry has shown strong growth. This places outdoor recreation on par with Washington's aerospace industry in Washington (237,000 direct and indirect jobs in 2017).[i]

FIGURE 1. POPULATION WEIGHTED EXPENDITURES RELATED TO OUTDOOR RECREATION, WASHINGTON STATE
2019 OUTDOOR RECREATION EXPENDITURES WEIGHTED BY COUNTY POPULATION ($/RESIDENT)



The economic contribution of outdoor recreation is also significant. Economic contribution is the measure of spending in an economy that can be tied to outdoor recreation. This includes direct spending on outdoor recreation by consumers, and the secondary effects that occur as a result of the initial expenditures. Secondary effects include spending by businesses on things such as produce and meat, linen cleaning, and utilities; and spending by employees on groceries, insurance, and rent. **The direct spending and associated secondary effects, or multiplier effects, is estimated to be $40.3 billion. This means for every dollar spent on outdoor recreation, $1.52 in economic activity is supported.**

In addition to the substantial jobs supported, outdoor recreation makes important contributions to Washington's Gross Domestic Product (GDP). This analysis finds that outdoor recreation contributes over $20 billion of Washington's $610 billion GDP, approximately 3.2 percent of the state's total.

Economic benefits are also provided by Washington's natural infrastructure – ecosystem services such as clean air and water, habitat for animals, scenic beauty, and recreational enjoyment. **Each year, Washington's public lands provide between $216 billion and $264 billion in environmental benefits**. Services such as water storage and disaster risk reduction save our state money by avoiding costly investments in built infrastructure, while services like carbon sequestration and food provisioning have positive health outcomes.

While outdoor recreation generates revenues and job opportunities throughout the state, the non-market portion of outdoor recreation is also of value. Known as consumer surplus, this value is gained by recreationists when they are able to engage in recreation at a cost lower than they are willing to pay for it. Consumer surplus is the difference between what people value their recreational experience at (their total willingness to pay), and what they actually spend (e.g., entry fees, transportation). **This report estimates the consumer surplus value of recreation on public lands at $33 billion.**

While this report demonstrates the overwhelming benefits of outdoor recreation from an economic perspective, there are still other benefits not reported here and others that have yet to be valued. Notably, physical and mental health benefits have positive connections to time in nature. A recent analysis commissioned by the Recreation and Conservation Office (RCO), Economic, Environmental, & Social Benefits of Recreational Trails in Washington State, found the health savings associated with non-motorized trail use in Washington is $390 million per year. These findings highlight the opportunity to study other outdoor recreation activities, such as snowmobiling, hunting, and swimming. Other associations not valued here but discussed in [another recent publication,] *Health Benefits of Contact with Nature,* include enhanced physical health benefits from 'green exercise,' reduced frequency of attention deficit disorder in children, and reductions in juvenile crime. Despite the fact that capturing all the benefits in a single report proves difficult, reports such as these further our knowledge about the importance of outdoor recreation to Washington.

OUTDOOR RECREATION SPENDING

TOTALS
$26.5 BILLION

AND SUPPORTS **$40.3 BILLION IN ECONOMIC CONTRIBUTIONS**

EFFECTS OF COVID-19 ON THE RECREATION ECONOMY

As is the case throughout the world, the coronavirus disease (COVID-19) pandemic has had a drastic impact on Washington's economy. In April 2020, the seasonally adjusted unemployment rate in Washington was 15.4 percent, 11 percentage points higher than the April 2019 rate of 4.4 percent.[ii] The recreation economy is a major jobs supporter in the leisure and hospitality industry, retail trade, and government, all of which have been among the hardest hit industries. This report gathers and interprets recreation participation data from 2019 and does not reflect the impacts of COVID-19. The estimates presented in this report provide a strong baseline for future analyses to better understand the impacts that COVID-19 had on Washington's outdoor recreation economy.

INTRODUCTION

In 2015, the RCO released Washington's first report on the outdoor recreation economy, *Economic Contribution of Outdoor Recreation in Washington State*. The report estimated that in 2014, $21.5 billion was spent on outdoor recreation and supported 200,000 jobs in Washington. Now, with strong tourism and half a million more residents, RCO, the Department of Natural Resources, and industry partners have commissioned an updated report on the recreation economy in 2019 to see where the state's outdoor recreation economy stands.

The purpose of this study is to update the 2015 study and understand the current distribution of the outdoor recreation economy in Washington State – spending, jobs, incomes, and taxes. In addition, this study estimates the economic benefits, such as consumer surplus and environmental benefits, that communities receive from public recreation lands in Washington State.

Throughout this report, the authors will often refer to the initial 2015 analysis to provide context on the changes in participation and economic values. Additionally, because this report follows the methodology used in the previous report, limited descriptions of applied methods will be provided, and may point the reader to the 2015 *Economic Analysis of Outdoor Recreation in Washington State* for supplemental methodology.

REPORT OVERVIEW

This report estimates the economic contribution of outdoor recreation, as well as non-monetary benefits that stem from public recreation lands. The report is outlined as follows: first, a brief background on Washington State is provided. Second, we outline the concepts and methods for valuing the economic contribution of outdoor recreation and the economic benefits that stem from public recreation lands. Chapter 3 estimates outdoor recreation participation, expenditures, and resulting spending effects. Chapter 4 provides a discussion and valuation of the non-market environmental benefits of public recreation lands. Finally, Chapter 5 discusses the results of our analyses.

BACKGROUND ON WASHINGTON STATE

Numerous Tribes have inhabited the region since time immemorial, relying on its rich salmon stocks and other First Foods for sustenance, among many other benefits provided by the lands and waters. Today, there are 29 federally recognized Indian Tribes in Washington State still relying on and living in relationship with the diverse aspects that drive today's outdoor recreation economy. Treaties ensured tribal rights to fish, hunt, and gather. The outdoor recreation that takes place in Washington all occurs on the ancestral lands of Washington's original caretakers, who continue their spiritual and cultural practice across public lands. The State of Washington has a responsibility to work with these sovereign nations to ensure the various natural elements of this region are preserved and enhanced for present and future generations.

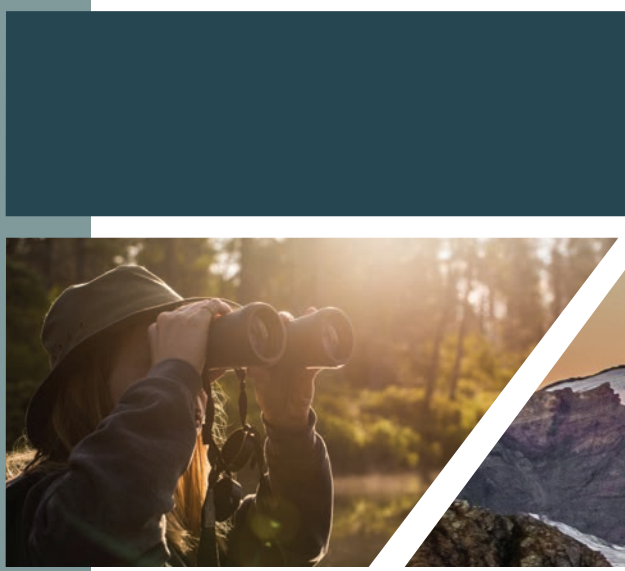
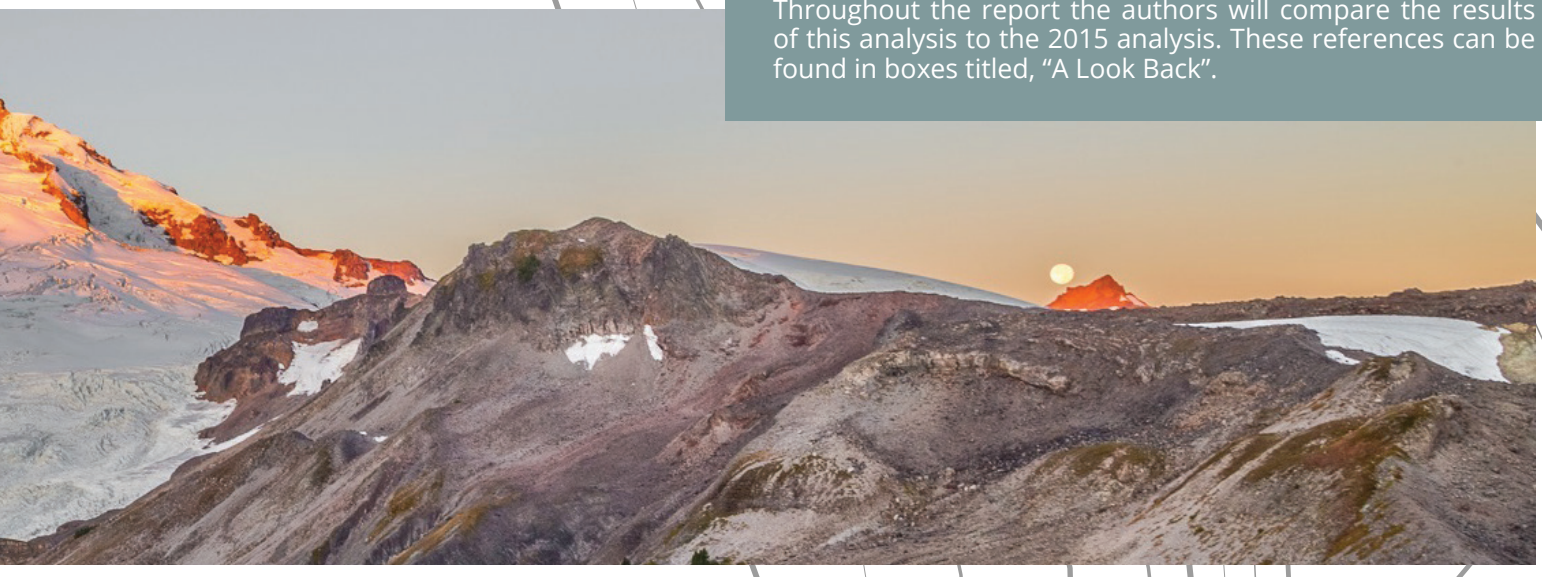


FIGURE 2. INDIGENOUS TERRITORIES, WASHINGTON STATE

A LOOK BACK

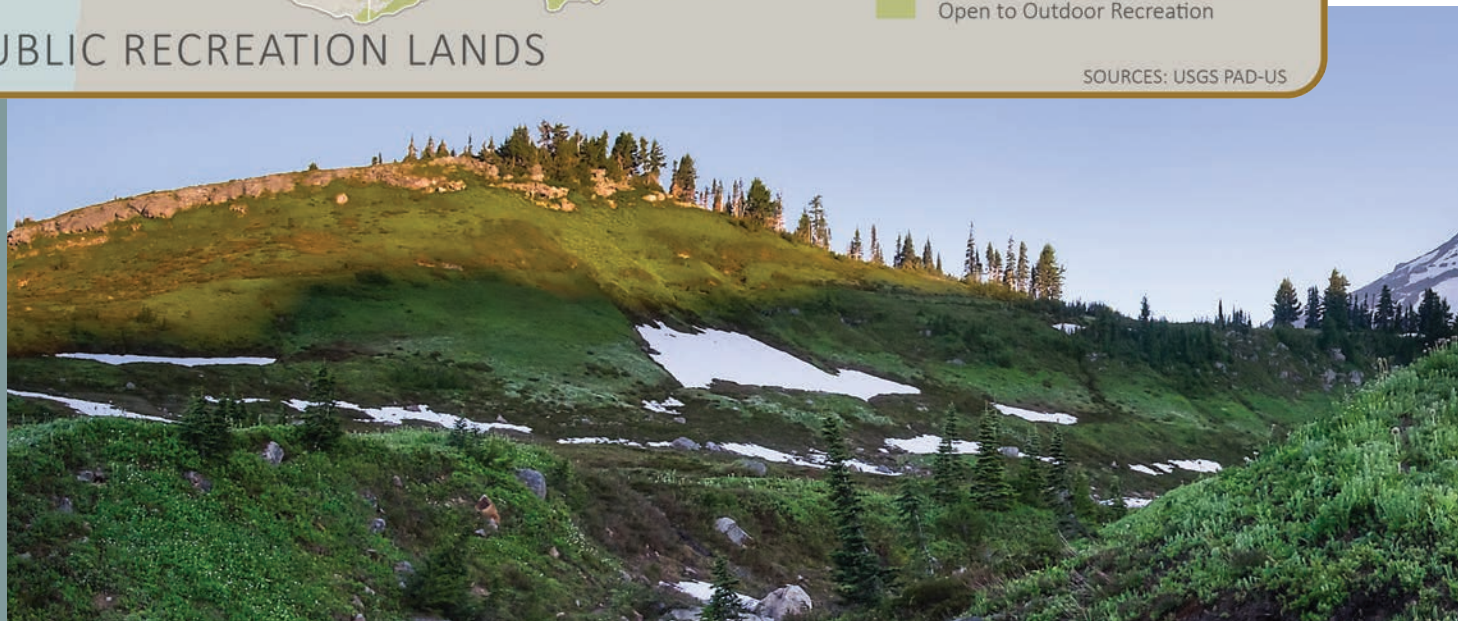
Throughout the report the authors will compare the results of this analysis to the 2015 analysis. These references can be found in boxes titled, "A Look Back".



CONCEPTS & METHODS

Washington offers hundreds of outdoor recreation activities that are enjoyed by residents and tourists alike. These include activities such as hiking, biking, rock climbing, horseback riding, hunting, fishing, snowmobiling, camping, dirt biking, off-road vehicle (ORV), and beachcombing. In this report, outdoor recreation is defined as the activities that we do for personal enjoyment in nature-based environments outdoors. Outdoor recreation activities are tied to spending in the community, and on gear, which then support jobs, income, and taxes throughout the state. The concepts and methods for valuing the outdoor recreation economy are explained briefly below. For a full review of methods, please review the 2015 *Economic Analysis of Outdoor Recreation in Washington State*.

FIGURE 3. PUBLIC RECREATION LANDS, WASHINGTON STATE



THE OUTDOOR RECREATION ECONOMY

OUTDOOR RECREATION EXPENDITURES

The spending outcomes associated with these outdoor recreation activities were calculated by multiplying the number of participant days a recreation site received by the average spending rate per person. The spending rate per person was largely dependent on who manages the recreation site (national parks, Washington Department of Natural Resources (DNR), county parks, etc.), how far participants traveled to access recreation sites (local versus nonlocal recreationists), and how many days were spent at a recreation site (day versus overnight recreationists).

This updated analysis collected and reported recreation participation days and expenditures by land manager. At a high level, these land managers are categorized as a public agency or a private landholder. For example, the U.S. Forest Service, Washington State Parks and Recreation Commission, and Spokane Parks and Recreation are all varying levels of jurisdictional agencies managing recreation lands; while land trusts, private timberlands such as Weyerhaeuser, private campgrounds, and other private lands are all managed by private landholders, representing the wide range of land owners considered in this analysis.

Local and nonlocal participation is a significant spending driver, and typically is associated with the type of park being assessed. Some recreation amenities are mostly frequented by local day users, such as city parks. Other recreation sites such as national parks have a large share of nonlocal overnight visitors. Nonlocal overnight visitors typically have higher expenditures than their local day user counterparts. We observe factors such as these when determining consumer spending associated with recreation sites.

Regardless of the type of recreation, one thing is clear – when people spend time outdoors they spend money in Washington communities. That could be grabbing a burger following a day of dirt biking, hiking and then staying at a boutique hotel on Orcas Island, or paying a guide to lead climbs up Mount Rainier. Further, recreation participants often are well equipped when enjoying the outdoors, which leads to dollars being spent at gear and repair shops throughout the state. While these purchases seem small at the individual level, they add up to billions of dollars of spending on outdoor recreation every year.

OUTDOOR RECREATION VISITOR SPENDING EFFECTS

The dollars spent on outdoor recreation trips and gear circulates through bait shops, restaurants, and retail stores such as REI to support jobs and taxes. Direct payments to these industries are then re-spent, and support additional jobs and taxes in Washington. Spending on outdoor recreation keeps Washington's economy diversified. Research shows that diversified economies have lower unemployment rates and recover quicker during economic downturns than their less diverse counterparts.[iii]

Estimating these benefits was conducted through an economic contribution analysis. To conduct the economic contribution analysis, input-output (I-O) modeling was used to measure the financial linkages between industries within a regional economy. Simply put, it showed how spending in one industry affected the larger economy. We used multi-regional input-output modeling to estimate how spending in one region of Washington sent economic ripples throughout the rest of the state. These industry relationships rely on data from the Bureau of Economic Analysis (BEA). This analysis used an industry standard I-O software

called IMPLAN.[iv] The IMPLAN model calculated effects of expenditures on economic contribution, value added to GDP, jobs, labor income, and tax revenue.

Each of the categories in the input-output model were broken into direct and secondary economic effects. Direct effects measured the economic activity of industries directly supported by consumer spending, such as hotels, retail stores, recreation services, and restaurants. Secondary economic effects were the corresponding shifts in the economy due to the initial infusion of money (i.e., the direct effect), and were further categorized as either indirect or induced effects.

Indirect effects represent the impact on the industries that support those which fell under the umbrella of direct effects. For example, restaurants were one of the industries directly affected by consumer spending; ranchers supplied beef and growers supplied produce to the restaurants that were patronized by recreational users. Increased spending at the restaurants provoked additional orders of beef and produce by the restaurants to keep up with demand; in this way, the agricultural industry indirectly benefited from the outdoor recreation activity.

Induced effects measure the effects of employee spending. Employees who worked in the industries directly and indirectly affected by recreational expenditures spent their wages on goods and services in the regional economy. For instance, if a marina employee spent their paycheck on rent, gas, and groceries, this benefited local business and the regional economy—to the extent that this spending remained within Washington. Depending on the extent of connectivity in the regional economy, these economic effects potentially circulated throughout the economy numerous times before the dollars finally left the region.

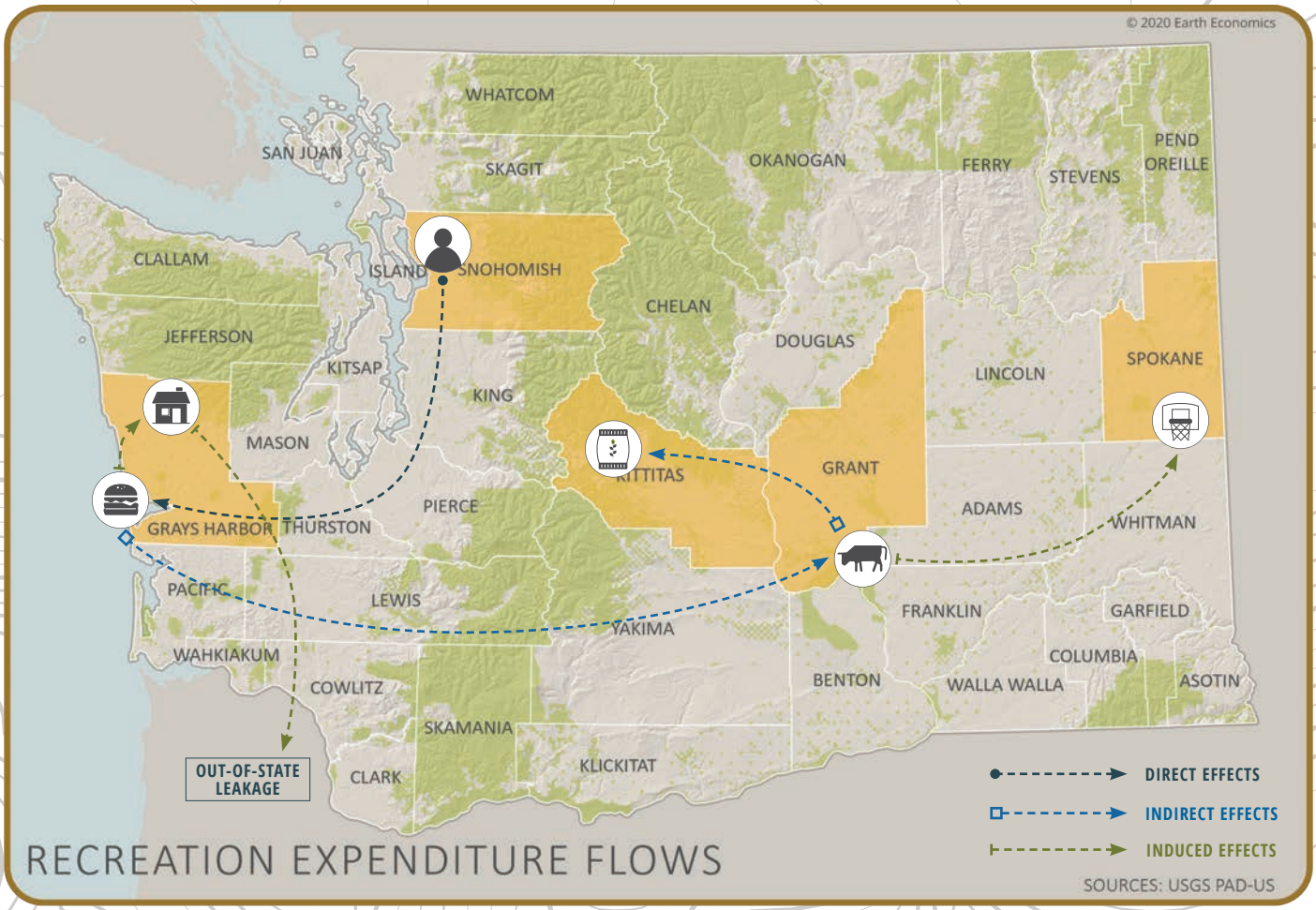
CONSUMER SURPLUS AND ENVIRONMENTAL BENEFITS

Not only does outdoor recreation lend itself to building a robust economy, it also makes Washington an exceptional place to call home. In fact, we placed a dollar value on the enjoyment residents received from participating in their favorite outdoor recreation activities. This value is called consumer surplus. Consumer surplus was calculated by subtracting the costs incurred to participate in an activity–travel costs, entrance fees, parking–from the participant's total willingness to pay for an activity. For instance, if someone valued a 3-day backpacking trip in the Olympic National Forest at $500, but only incurs costs of $200, their consumer surplus was the remaining $300.

Consumer surplus estimates for recreational activities were derived from two sources: 1) a recreation value database developed by Dr. Randall Rosenberger, professor of environmental economics at Oregon State University, and 2) a U.S. Forest Service (USFS) report Recreation Economic Values for Estimating Outdoor Recreation Economic Benefits From the National Forest System.[v, vi] The values used were chosen based on applicability to participation in outdoor recreation in Washington. Primary valuation methods used in the reports include stated preference and revealed preference methods, specifically travel cost and contingent valuation methods.

Lastly, this report estimated the environmental benefits provided by public recreation lands. The forests residents hiked sequestered carbon, stored water for use at a later date, reduced the risk of flooding, and provided habitat for animals and plants. Natural ecosystems provided the state's communities with an immense amount of benefits that would be expensive – if not prohibitive – to replace. Through a variety of economic approaches, we valued these benefits in economic terms.

FIGURE 4. RECREATION EXPENDITURE FLOW, WASHINGTON STATE



RECREATION EXPENDITURE FLOW

Suppose someone from Snohomish County takes a trip to Ocean Shores to go clamming (Snohomish County to Grays Harbor County). Famished from the 3-hour road trip, he/she decide it's best to fuel up at a local restaurant before anything else. He/she orders a bacon cheeseburger, sweet potato fries, and a chocolate milkshake. He/she pays and is on his/her way to check-in at his/her hotel.

The restaurant he/she dined at relies on these tourism dollars to pay for the expenses that go along with operating a business. For instance, the restaurant needs beef to make burgers. Fortunately, the owner of the restaurant has a good relationship with a cattle farm in Grant County who supplies them with quality chuck to make burgers. The income that the rancher receives is then used to buy farm supplies from Kittitas County, and a trip to Spokane to participate in Hoopfest (Grant County to Spokane County).

The restaurant owner also needs staff to prepare and serve hungry patrons. The income that employees earn pays for daily expenses such as rent, food, and entertainment. With rental expenses, the money landlords receive may be re-spent within the community again, or perhaps used on a trip to Oregon, where the money leaves Washington's regional economy, and goes on to support jobs in Oregon.

The spending effects outlined here continue to push money through the economy until it is either placed into savings or used to purchase goods and services from outside the region.

EXPENDITURES AND ECONOMIC CONTRIBUTION

OF OUTDOOR RECREATION IN WASHINGTON STATE

OUTDOOR RECREATION PARTICIPATION AND SPENDING IN WASHINGTON STATE

In 2019, Washington residents and tourists participated in nearly 600 million days of recreation in the outdoors. They hiked from the Paradise Lodge at Mount Rainier National Park, backpacked in the Olympic National Forest, went snowmobiling in the Cascade Mountains, picnicked at Riverside State Park, and jogged around Green Lake in Seattle.

Of the 600 million days spent outdoors, the vast majority took place on public lands – about 90 percent. While federal and state lands hosted ample outdoor recreation, city and county parks accounted for over a third of recreation days in Washington State. Water-based recreation was also a popular choice for recreation in Washington, with 1 in 5 days spent on rivers, lakes, beaches, pools, and off the Coast.

Resulting from the 600 million days of recreation, $18.8 billion was spent on trip-related expenses. This included spending at hotels, grocery stores, restaurants, gas stations, and retail stores along the way (Figure 6). Activities such as skiing, scuba diving, and beach leisure had the highest associated per-day spending, while city parks had the lowest average spending per day. Estimates for all trip-related expenditures are shown in Figure 7.

In addition to the $18.8 billion in trip-related spending, $7.7 billion was spent on gear, equipment, and repairs. Equipment expenditures were estimated via Bureau of Economic Analysis industry accounts and national industry data.[vii, ix] A large portion of outdoor recreation expenditures were associated with the purchase of motor vehicles and parts, followed by sporting goods and apparel.

FIGURE 5. 2019 SPENDING ON OUTDOOR RECREATION

Trip-Related	$18,831,156,493
Equipment	$7,651,176,656
Total Spending	$26,482,333,149

FIGURE 6. OUTDOOR RECREATION EXPENDITURES BY INDUSTRY

TRIP-RELATED EXPENDITURES • $18,831,156,493

- FULL-SERVICE RESTAURANTS • 5%
- QUICK SERVICE RESTAURANTS • 5%
- ALL OTHER RESTAURANTS • 5%
- RETAIL - SPORTING GOODS, HOBBY, MUSICAL INSTRUMENT AND BOOK STORES • 2%
- HOTELS AND MOTELS, INCLUDING CASINO HOTELS • 7%
- OTHER ACCOMMODATIONS • 1%
- AMUSEMENT AND RECREATION INDUSTRIES • 8%
- FEDERAL GOVERNMENT ENTERPRISES • 2%
- LOCAL GOVERNMENT ENTERPRISES • 3%
- PETROLEUM REFINERIES • 15%
- RETAIL - FOOD AND BEVERAGE STORES • 11%
- RETAIL - MISCELLANEOUS STORE RETAILERS • 7%
- SCENIC AND SIGHTSEEING TRANSPORTATION AND SUPPORT ACTIVITIES FOR TRANSPORTATION • 1%
- SEAFOOD PRODUCT PREPARATION AND PACKAGING • 0%
- TRANSIT AND GROUND PASSENGER TRANSPORTATION • 1%

EQUIPMENT EXPENDITURES • $7,651,176,656

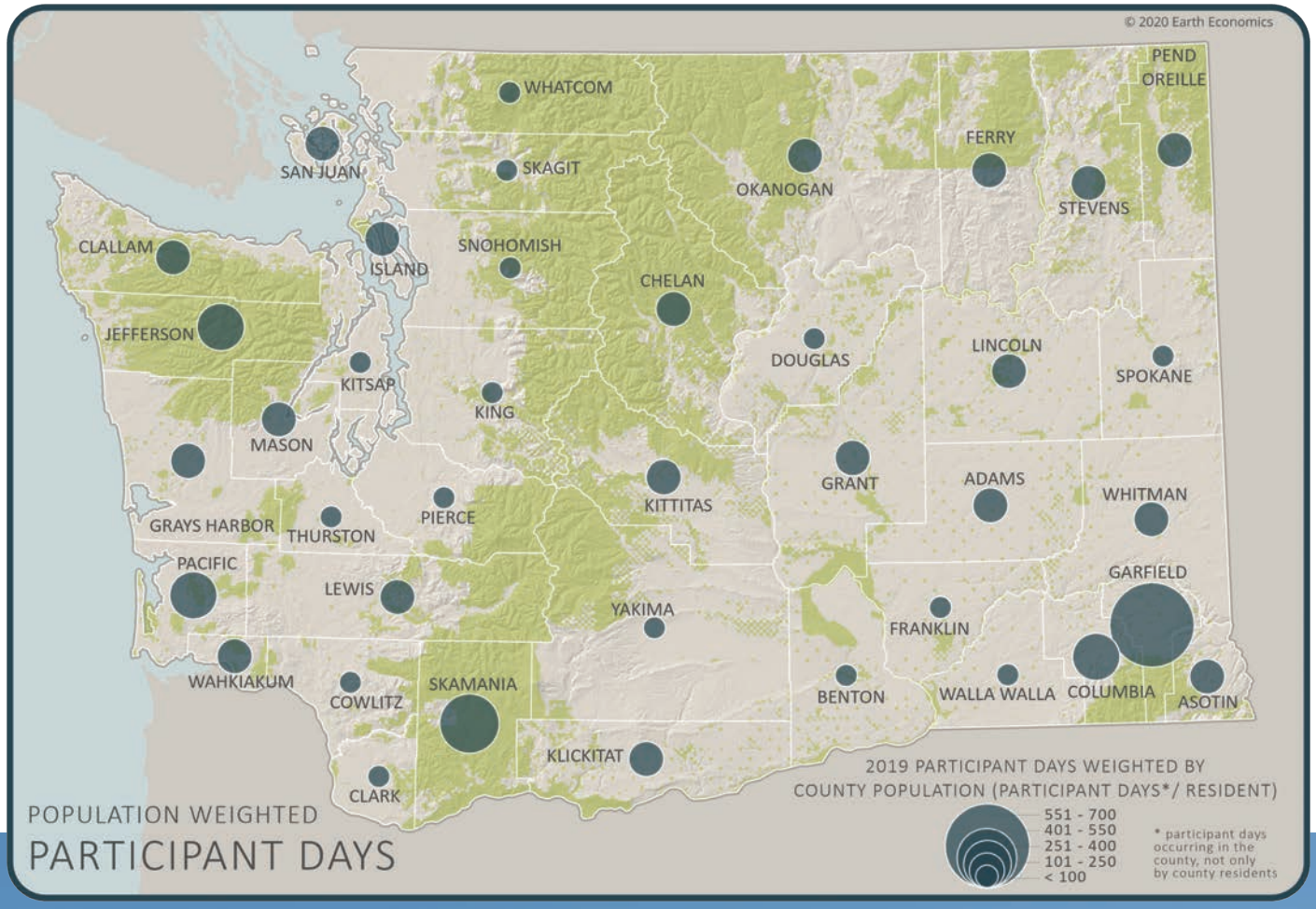
- RETAIL - MOTOR VEHICLE AND PARTS • 5%
- RETAIL - ELECTRONICS AND APPLIANCES • 5%
- PERSONAL AND HOUSEHOLD GOODS REPAIR AND MAINTENANCE • 5%
- RETAIL - SPORTING GOODS, HOBBY, BOOK AND MUSIC • 3%
- RETAIL - CLOTHING AND CLOTHING ACCESSORIES STORES • 15%

FIGURE 7. 2019 VISITATION AND TRIP-RELATED EXPENDITURES BY LAND MANAGER

OWNERSHIP	AGENCY	PARTICIPANT DAYS	$/PARTICIPANT DAY	TOTAL SPENDING (000'S)
Federal	Bureau of Land Management	691,566	$63	$43,672
Federal	National Parks Service	8,323,131	$62	$515,093
Federal	National Wildlife Refuges	1,042,438	$48	$49,891
Federal	U.S. Army Corps of Engineers	13,107,802	$72	$944,941
Federal	US Forest Service	14,285,138	$28	$405,755
State	State DNR Trust Land, Natural Area Preserves, Natural Resources Conservation Areas	13,879,816	$48	$667,545
State	State Parks	38,456,657	$30	$1,138,317
State	WA F&W Game Management Units (Hunting)	2,023,849	$75	$151,293
Local	City Parks	205,517,049	$8	$1,586,592
Local	County Parks	46,708,420	$13	$617,766
Local	Events	51,193,612	$49	$2,519,163
Local	Municipal Golf	1,511,999	$79	$120,059
Local	Outdoor Sports	13,164,970	$30	$389,683
Public Waters	Fishing (Total Days)	19,882,579	$48	$953,544
Public Waters	Inner Tubing or Floating	13,316,400	$48	$645,147
Public Waters	Motorized Boating & Sailing (Total Days)	14,670,733	$94	$1,384,958
Public Waters	Non-Motorized Paddle Sports (Total Days)	8,534,373	$83	$710,231
Public Waters	Non-Motorized Windsurfing/Surfing (Total Days)	2,105,846	$97	$204,371
Public Waters	Swimming (Outdoor Pools)	17,652,293	$22	$384,485
Public Waters	Swimming In Natural Waters	32,933,927	$22	$717,334
Public Waters	Scuba Diving	1,458,867	$131	$191,458
Public/Private	Horseback Riding	12,283,466	$66	$812,799
Public/Private	Skiing	1,888,816	$167	$315,083
Public/Private	Wildlife Watching	6,300,000	$48	$302,140
Private Lands	Beach	13,164,970	$129	$1,702,231
Private Lands	Campgrounds	6,543,543	$48	$314,710
Private Lands	Private Recreation Areas, Including Land Conservancies	8,619,269	$11	$92,830
Private Lands	Private Golf	7,488,001	$79	$594,579
Private Lands	Timberland	4,755,379	$75	$355,488
Total		581,504,909		$18,831,156

Activities not specific to an agency or land type are recorded as Public/Private.

FIGURE 8. POPULATION WEIGHTED PARTICIPANT DAYS, WASHINGTON STATE
2019 PARTICIPANT DAYS WEIGHTED BY COUNTY POPULATION (PARTICIPANT DAYS/RESIDENT)



A LOOK BACK

In the 2015 *Economic Analysis of Outdoor Recreation in Washington State*, it was estimated that spending on outdoor recreation in Washington State totaled $21.6 billion. The report found that trip-related spending accounted for $12.6 billion of the total, while gear, equipment, and repairs accounted for $9 billion. This analysis refines the approaches taken, including the inclusion of several private recreation activities not previously valued. Additionally, the approach used to value gear, equipment, and repairs is now based on BEA industry accounts, rather than per-participant spending rates.

ECONOMIC CONTRIBUTION OF OUTDOOR RECREATION IN WASHINGTON STATE

As mentioned above, in 2019, a total of $26.5 billion in annual expenditures was spent on outdoor recreation in Washington State. This spending translated into more than 260,000 jobs throughout the state. Of those 260,000 jobs, 60 percent (165,000) were a direct result of spending on outdoor recreation in Washington (direct effects). Through multiplier effects, an additional 100,000 jobs were indirectly supported by the outdoor industry (indirect and induced effects). The average labor income associated with these jobs was $44,000 per year. This totaled to nearly $12 billion in wages for Washington workers.

The consumer spending on outdoor recreation leads to even greater economic contribution in the state. The industries that were directly and indirectly supported by these expenditures produced goods and services worth a total of $40 billion. Put another way, this was the total spending—both the primary visitor expenditures and the secondary effects—associated with recreation in Washington State. This means that for every $1 spent by recreational users, $1.52 in economic activity was generated in the regional economy.

A subset of the total economic contribution was the value of goods and services added to the economy, also referred to as gross domestic product contributions.

Figure 11 shows the economic contributions for all spending on outdoor recreation. The economic effects are categorized by employment, labor income, value added, and economic contribution.

Significant taxes also were generated by outdoor recreation spending. Taxes on production and imports were by far the largest contributors, with sales tax as the driving force. State and local taxes generated from both trip-related and spending on gear, equipment, and repairs totaled over $3.4 billion. Trip-related spending made up 78 percent of taxes generated, with spending on gear, equipment, and repair contributing the remaining 22 percent.

FIGURE 9. PERCENT OF THE COUNTY JOBS THAT ARE RECREATION SUPPORTED JOBS, WASHINGTON STATE

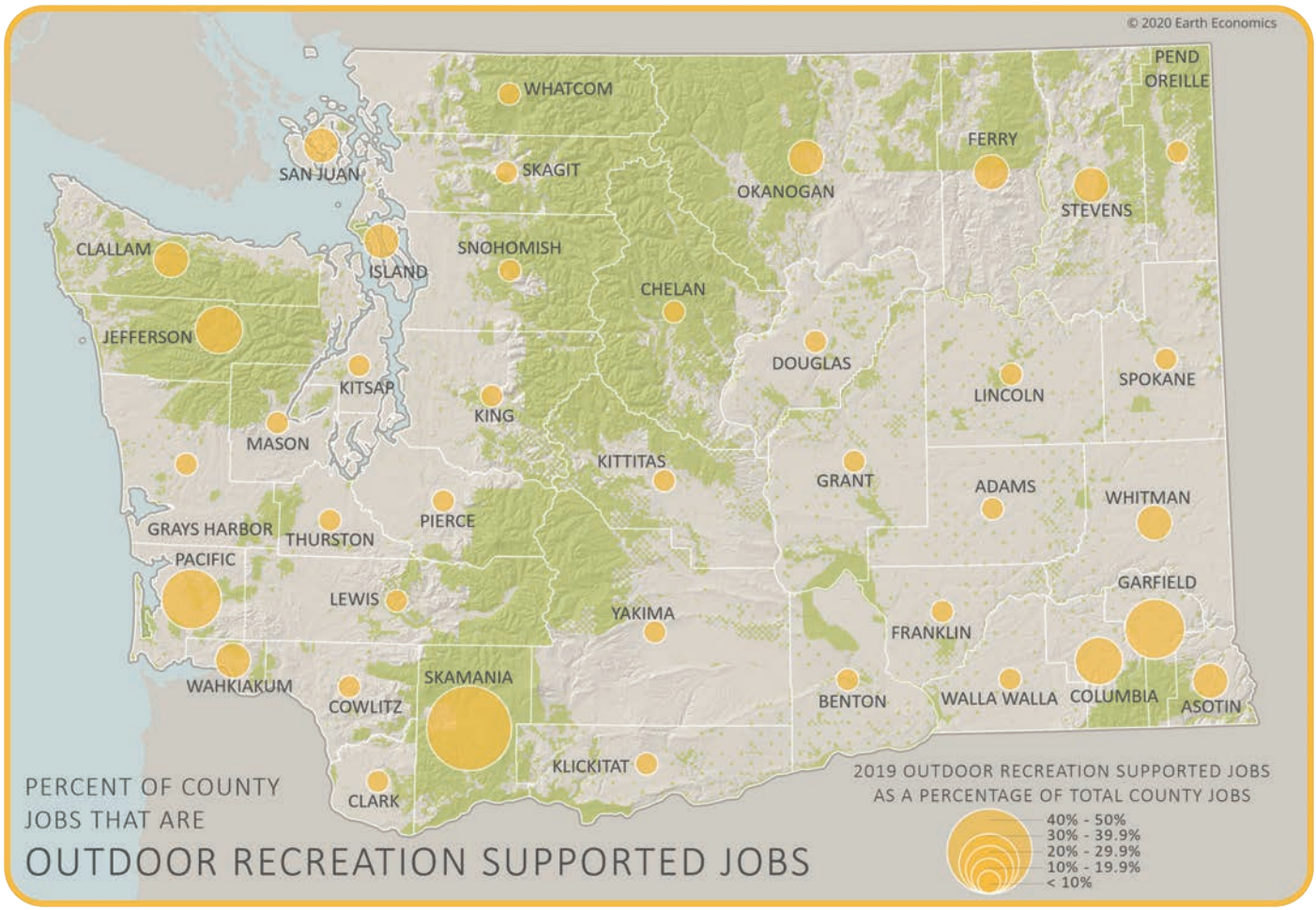
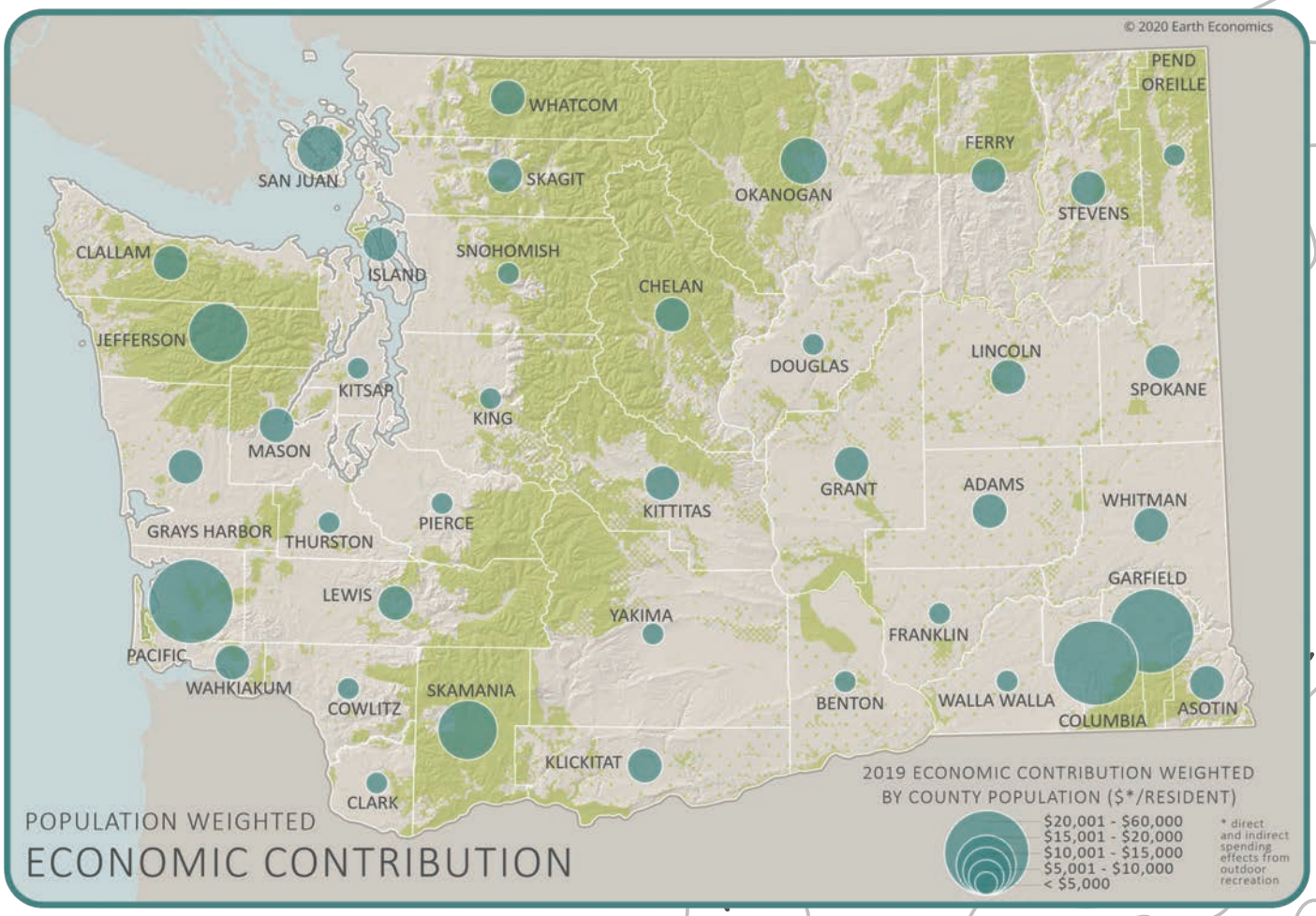


FIGURE 10. POPULATION WEIGHTED ECONOMIC CONTRIBUTION, WASHINGTON STATE
2019 ECONOMIC CONTRIBUTION WEIGHTED BY COUNTY POPULATION ($/RESIDENT)



A LOOK BACK

- The 2015 *Economic Analysis of Outdoor Recreation in Washington State* estimated that 198,000 jobs were supported by outdoor recreation in Washington State. The increase in spending between the years has resulted in the addition of over 50,000 jobs to Washington's economy.
- Economic contribution in 2015 was estimated to be $20.5 billion; this 2020 report estimates total economic contribution to be $40 billion. State and local tax contributions in 2015 were estimated to be $2 billion, while this 2020 report estimates state and local taxes at $3.4 billion. The increase is a result of increased recreation participation and associated trip-related spending. There are two factors that influence these increases:
    1. This analysis uses multi-region input-output modeling to estimate consumer spending effects, the 2015 report did not. Multi-regional input-output modeling allows us to model expenditures entering a regional economy (i.e. a county), and then show the effects throughout a larger economy (i.e., the state). A traditional model limits the effects to a single region. Where leakages were previously lost outside of the regional level, they now are captured.
    2. Due to increases in recreation participation and new recreation lands being valued, total trip related spending also increased. Because of this, a larger share of the overall total spending is made up of trip-related spending. Trip-related spending has higher multiplier effects than equipment purchases, leading to higher economic and tax contributions.

FIGURE 11. 2019 ECONOMIC CONTRIBUTIONS OF ALL OUTDOOR RECREATION SPENDING

IMPACT TYPE	EMPLOYMENT	LABOR INCOME	VALUE ADDED	CONTRIBUTION
Direct Effect	165,238	$5,566,130,149	$8,732,518,337	$21,976,249,474
Indirect Effect	54,521	$3,409,993,416	$5,739,868,790	$10,632,687,987
Induced Effect	44,700	$2,529,439,056	$4,725,005,003	$7,764,095,186
Total Effect	264,460	$11,505,562,621	$19,197,392,130	$40,373,032,648

FIGURE 12. TAXES SUPPORTED BY OUTDOOR RECREATION SPENDING

	EMPLOYEE COMPENSATION	TAX ON PRODUCTION AND IMPORTS	HOUSEHOLDS	CORPORATIONS	TOTAL
State & Local	$85,120,090	$3,288,671,955	$47,796,313	$2,736,404	$3,424,324,762

ECOSYSTEM SERVICES

ON OUTDOOR RECREATION LANDS IN WASHINGTON

ECOSYSTEM SERVICES AS NON-MARKET BENEFITS

In addition to the economic contributions associated with outdoor recreation, there are many other benefits provided by public recreation lands that are not accounted for within traditional economic indicators. These are referred to as non-market benefits, as there are few market mechanisms to communicate the economic value of these ecosystem services.

The focus of this chapter is on the economic value of these additional, non-market ecosystem services that public recreation lands provide. This report defines ecosystem services under a framework adapted from the Millennium Ecosystem Assessment,[ix] which groups services under the following:

PROVISIONING SERVICES

PROVIDE GOODS TO PEOPLE, INCLUDING FOOD, WATER, AND MATERIALS

REGULATING SERVICES

REFER TO BENEFITS GAINED BY NATURAL CONTROL OF ECOSYSTEM PROCESSES

SUPPORTING SERVICES

PROVIDE INDIRECT BENEFITS THROUGH PROVISION OF HABITAT, BIODIVERSITY, AND SUPPORT OF ALL OTHER ECOSYSTEM SERVICES

INFORMATION SERVICES

PROVIDE HUMANS MEANINGFUL INTERACTION WITH NATURE

CONSUMER SURPLUS OF OUTDOOR RECREATION

Outdoor recreation itself can be considered an ecosystem service. Non-market valuation of recreation focuses on the fact that many people value recreational activities above and beyond what they actually pay for engaging in the activities themselves. Outdoor recreation provides aspects of wellbeing that go beyond economic accounting like keeping us healthy and happy. This economic benefit provided to recreation participants is referred to as consumer surplus.

The first step in estimating the consumer surplus associated with outdoor recreation was to determine the average consumer surplus value associated with the agencies and activities being studied. Average consumer surplus values were gleaned from peer-reviewed literature, and represent the average value that a participant receives when participating in recreation. These consumer surplus values then were multiplied by the total number of participant days, to arrive at a total consumer surplus value per agency or activity.

The annual consumer surplus value of recreation derived from this methodology was estimated at $33 billion per year in 2019. Figure 13 provides the total number of participant days by land manager, average per day consumer surplus, and total consumer surplus for visits to Washington's public outdoor recreation lands.

FIGURE 13. ECONOMIC BENEFIT AS A MEASURE OF CONSUMER SURPLUS (WILLINGNESS TO PAY) OF OUTDOOR RECREATION ON PUBLIC RECREATION LANDS

OWNERSHIP	AGENCY	PARTICIPANT DAYS	$/PARTICIPANT DAY	ECONOMIC BENEFIT
Federal	Bureau of Land Management	691,566	$75	$51,717
Federal	National Parks Service	8,323,131	$75	$622,419
Federal	National Wildlife Refuges	1,042,438	$66	$68,291
Federal	U.S. Army Corps of Engineers	13,107,802	$75	$980,226
Federal	US Forest Service	14,285,138	$75	$1,071,382
State	State DNR Trust Land, Natural Area Preserves, Natural Resources Conservation Areas	13,879,816	$80	$1,104,001
State	State Parks	38,456,657	$75	$2,875,860
State	WA F&W Game Management Units (Hunting)	2,023,849	$84	$170,684
Local	City Parks	205,517,049	$54	$11,009,483
Local	County Parks	46,708,420	$54	$2,502,155
Local	Events	51,193,612	$54	$2,742,426
Local	Municipal Golf	1,511,999	$71	$107,074
Local	Outdoor Sports	13,164,970	$54	$705,243
Public Waters	Fishing (Total Days)	19,882,579	$78	$1,549,241
Public Waters	Inner Tubing or Floating	13,316,400	$71	$943,016
Public Waters	Motorized Boating & Sailing (Total Days)	14,670,733	$64	$932,954
Public Waters	Non-Motorized Paddle Sports (Total Days)	8,534,373	$119	$1,012,833
Public Waters	Non-Motorized Windsurfing/Surfing (Total Days)	2,105,846	$119	$249,915
Public Waters	Swimming (Outdoor Pools)	17,652,293	$71	$1,250,067
Public Waters	Swimming In Natural Waters	32,933,927	$71	$2,332,253
Public Waters	Scuba Diving	1,458,867	$119	$173,134
Public/Private	Skiing	1,888,816	$90	$169,215
Public/Private	Wildlife Watching	6,300,000	$66	$412,715
Total		528,650,281		$33,036,304

NATURAL CAPITAL PERFORMS CRITICAL FUNCTIONS THAT PROVIDE ESSENTIAL GOODS AND SERVICES TO PEOPLE

ECOSYSTEM SERVICES

Ecosystem services are the benefits that people derive from nature. Forests, watersheds, mountains, and shorelines are examples of natural capital assets. These assets contain multiple ecosystems that perform a variety of ecosystem functions. These functions, in turn, provide beneficial services that enrich the human experience. Ecosystem services—breathable air, drinkable water, fertile soils, disaster resilience, etc.—are critical to human survival, and are the basis of all other economic activity.

In the same way that economists can determine the value of real estate as a private asset, economists also can determine the value of ecosystem goods and services as public assets. For instance, forests moderate the effects of heavy rain events by storing water. Using the avoided cost method, the ecosystem service of disaster risk reduction may be quantified by estimating the reduction in flood damages to downstream communities. Such economic benefits are known as non-market benefits. Because the full benefits of a given resource are not always included in market prices (i.e., land value), economic value must sometimes be assessed indirectly, using a range of valuation techniques. These methods include the following:

- **REPLACEMENT COST:** The cost to replace services provided by functioning ecosystems with built infrastructure (e.g. levees and dams to replace natural floodplain protection).
- **AVOIDED COST:** The losses that would be incurred if a natural ecosystem were removed or its function were significantly impaired (e.g. flood extent reduced by wetlands and riparian buffers).
- **PRODUCTION APPROACHES:** Ecosystem services that enhance market outputs (e.g. moderate, regular rainfall can increase crop productivity).
- **TRAVEL COST:** Where benefiting from natural ecosystems requires travel, the willingness to incur such costs implies the level at which those services are valued (e.g., recreation and tourism).
- **HEDONIC PRICING:** Property values vary by proximity to certain ecosystem services (e.g. homes with water views often sell for higher prices than similar homes without such views).
- **CONTINGENT VALUATION:** Estimates derived from surveys of the values assigned to certain ecosystem services (e.g., willingness-to-pay to protect water quality).

This analysis expands on results presented in 2015, which only assessed three ecosystem services provided by public recreation lands. New data on ecosystem service values are being published constantly, which allowed us to refine ecosystem service value estimates with more site-specific data, as well as being able to fill in key gaps in the analysis to more fully describe the value of ecosystem services.

We use the benefit transfer method (BTM) to estimate the value of ecosystem services, which applied existing estimates from other locations and contexts to the location being valued, e.g. outdoor recreation lands in Washington. Figure 15 identifies the ecosystem services that were valued based on data availability. Refer to the *Economic Analysis of Outdoor Recreation in Washington State* for a full explanation of the methodology.

FIGURE 14. NATURAL CAPITAL

FIGURE 15. ECOSYSTEM SERVICES VALUED IN THIS REPORT

ECOSYSTEM SERVICE		FOREST	GRASSLAND	RIVERS	SHRUBLANDS	WETLANDS	MARINE/ ESTUARY
Information	Aesthetic Information	•	•	•	•	•	•
	Existence Value	•				•	
	Science & Education	•					
Provisioning	Food	•					
Regulating	Air Quality	•					
	Climate Stability	•	•		•	•	
	Disaster Risk Reduction					•	
	Soil Retention	•					
	Water Supply	•		•	•	•	
	Water Quality	•	•			•	
Supporting	Habitat	•		•	•	•	•

• *Indicate ecosystem services that were valued on each ecosystem type.*

The updated results included 11 of 21 ecosystem service categories and represented a more in-depth account of the non-market benefits provided by public recreation lands. These provided a range of benefits to different groups: homeowners, visitors, and even people who may never visit recreation lands, but still care for them.

AESTHETIC VALUE

Many people find beauty in nature—anyone who appreciates a beautiful vista or goes on a scenic drive is experiencing this ecosystem service. Aesthetic values are an inherent component of many of Washington State's recreation lands and provide a major incentive that attracts people to visit sites across the state like the Columbia River Gorge, Mount Rainier, Snoqualmie Falls, Mount Saint Helens, Cape Flattery, and countless other examples for this explicit ecosystem service. A common example of this service also can be seen though property sales data—property located closer to desirable features, such as a pristine lake or a wooded park, are often more expensive than properties farther away from those features (i.e. hedonic valuation).

EXISTENCE VALUE

Many people place value on the fact that an ecosystem exists, even if they may never visit it. This situation describes the concept of existence value, which is recognized as a cultural ecosystem service by several frameworks. Nostalgia, preserving historical relics, or other sentimental bases are examples of how people gain satisfaction from simply knowing that a given natural ecosystem/resource exists. Many of Washington State's recreation lands embody this ecosystem service as can be evidenced in the ways the identity of the state is synonymous with valuable outdoor recreation experiences.

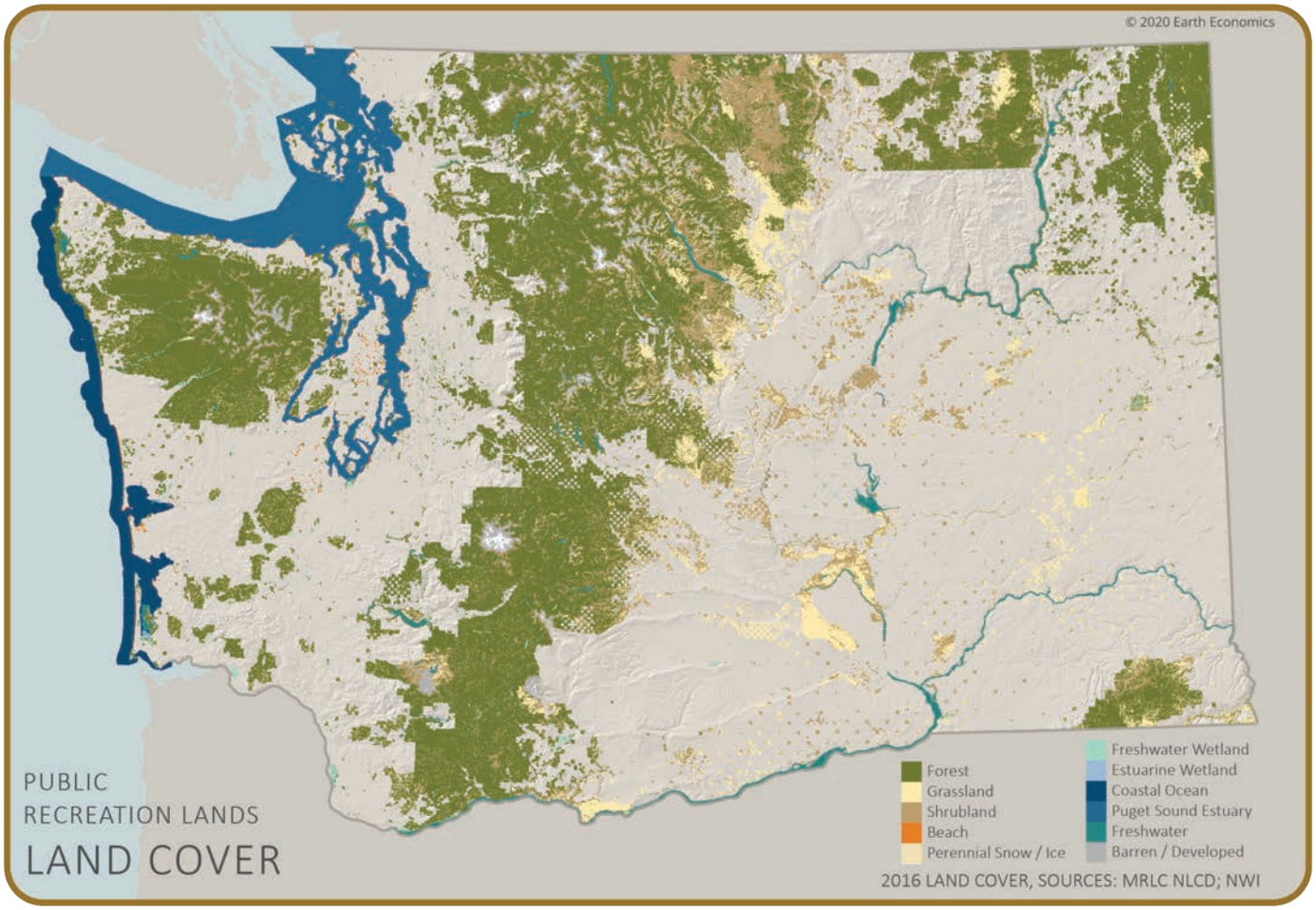
SCIENCE & EDUCATION

Scientific knowledge gained from studying the gifts of nature has enabled humanity to utilize natural resources to build the economy we enjoy today. A growing number of educational and research institutions are devoted to studying marine and terrestrial environments to understand the scientific and educational importance of ecosystems and provide local employment. Natural areas often can be used for educational purposes, teaching students about natural processes and local environments. Washington State recreation lands include numerous areas dedicated to the ecosystem service of science and education including areas dedicated to studies conducted by the University of Washington and Washington State University. Washington's recreation lands also serve industries tied to outdoor education geared towards the state's youth population, as well as support amateur science enthusiast ranging from ornithologists to mycologists to ecologists and many other scientific disciplines.

FOOD

Providing food is one of the most important functions of ecosystems. Agriculture and fisheries provide food that could not be supplied without healthy soils, clean waters, and functioning ecosystems. Outside of industries foraging on natural areas can provide unique and local sources of food, such as mushroom foraging and berry picking. Washington State's recreation lands

FIGURE 16. LAND COVER OF PUBLIC RECREATION LANDS, WASHINGTON STATE



provide ample opportunities for this as evidenced by the extensive recreational participation in salmon fishing throughout numerous watersheds statewide; shellfishing throughout Puget Sound and Pacific Ocean coastlines; elk hunting in the Cascade range; harvesting huckleberries, salmonberries, and trailing blackberries during hikes across the state's forestlands; as well as camas and other nutritious root crop harvesting provided within the state's prairie habitats like those exemplified at Mima Mounds.

AIR QUALITY

Plants remove pollutants and particulate matter from the air, improving overall air quality. Air pollution can affect people's health by increasing risk of heart and lung diseases, long-term chronic diseases, and other complications.[xi] By improving local air quality, natural areas can reduce people's cost relating to treatment of associated health problems. Washington's recreation lands support ample ecosystem service benefits of air quality that are felt by many of the state's residents who seek out recreation opportunities away from their urban homes just to experience the indescribable pleasure of "fresh" air provided by forestlands like those of the Hoh Rainforest.

CLIMATE STABILITY

Natural ecosystems and green infrastructure regulate climates at both the local and global level. At the global level, this is facilitated by the capture and long-term storage of atmospheric carbon which mitigates the drivers of climate change. Locally, green spaces provide shade and reduce ambient temperatures, resulting in lower cooling costs to residents and reducing heat-related illness caused by heat island effects in highly urbanized cities.

DISASTER RISK REDUCTION

Healthy ecosystems often reduce the impact of natural disturbances such as floods, storms, landslides, and fires. For example, natural lands absorb, regulate, and store large amounts of water during storms. Natural areas benefit people living and working downstream by reducing the risk of flooding to structures like houses, factories, and more, which can in turn reduce property damage, lost work time, and casualties. Washington's recreation lands like the complex estuarine ecosystems of the Billy Frank Jr. National Wildlife Refuge help to protect against the risks presented by sea-level rise.

AN AVERAGE OF $240 BILLION ANNUALLY IN ECOSYSTEM SERVICES

FIGURE 17. NON-MARKET BENEFITS ON PUBLIC RECREATION LANDS IN WASHINGTON STATE ('000)

ECOSYSTEM SERVICE	LOW $/YEAR	HIGH $/YEAR
Aesthetic Information	$192,924,880	$194,436,576
Air Quality	$253,012	$8,747,297
Climate Stability	$19,633,860	$25,328,842
Cultural Value	$50,989	$376,782
Disaster Risk Reduction	$125,278	$1,230,550
Food	$107,090	$582,776
Habitat	$246,193	$5,481,939
Science & Education	$37,342	$37,342
Soil Retention	$16,509	$60,420
Water Capture, Conveyance, and Supply	$835,694	$7,835,554
Water Quality	$2,176,921	$20,367,702
Total	$216,407,768	$264,485,779

SOIL RETENTION

Plant cover plays an important role in keeping soil in place, building new soil, reducing erosion, and preventing landslides. Preventing erosion upstream enhances water quality by limiting sediment entering waterways. Soil loss also can remove important nutrients and minerals, thus reducing soil fertility critical to economic activities like agriculture and forestry. Washington's recreation land across the state keep soil in place by providing ideal conditions for diverse plant growth which perpetuates soil formation in conjunction with sustaining ecosystem services like aesthetic value derived from the state's iconic tree to air and water quality.

WATER SUPPLY

Fresh water is critical to all life. Watersheds provide sources of drinking water and irrigation water that support the health and activities of people, economies, and ecosystems downstream. Both Tacoma and Seattle's primary water supplies are watersheds upstream of these cities: the Green River and Cedar River, respectively. Natural infrastructure plays a key role in recharging the Spokane Valley-Rathdrum Prairie Aquifer – the key source of Spokane's drinking water. Washington's recreation lands like those at Mount Baker which play host to mountaineering activities on the glacial peaks also provide meltwater that feeds into the drinking water sources of large portions of Whatcom and Skagit Counties' populations.

WATER QUALITY

Natural lands like wetlands and forests improve water quality by removing pollutants and sediment from lakes and rivers or preventing these from entering water systems in the first place. Cleaner water then benefits people downstream of these places by enhancing recreational activities such as swimming or fishing, supporting a clean water supply, and enhancing aesthetic beauty of ecosystems.

HABITAT

Ecosystems provide shelter from predators, food and water availability, and appropriate living conditions for animals and plants that are critical not only to recreation, but to other ecosystem services as well. Wildlife watching, fisheries, and pollination—these are only three examples of how habitat provision would affect fauna that provides direct benefit to people. Washington's recreation lands provide habitat in Goat Rocks Wilderness that attracts many to seek out wildlife viewing opportunities for species like the iconic mountain goats.

In short, these benefits are all provided by recreation lands to Washington residents and beyond. Some ecosystem services provide local benefits, some benefit people living downstream of where they are produced, and some are provided over a large region—even globally.

ECOSYSTEM SERVICE VALUE OF WASHINGTON'S RECREATION LANDS

Together with the consumer surplus value of recreation, ecosystem services provided by Washington's recreation lands provide between $249 billion and $298 billion per year. These are non-market economic benefits that are provided to Washingtonians, and are not related to the expenditures and contributions calculated earlier in the report. While these are non-market benefits, the loss of these services would result in both decreased benefits and increased costs to communities. Treating recreation lands as an asset, the present value of these benefits over 100 years is $7.5 trillion to $9 trillion (using a 3 percent discount rate).

FIGURE 18. TOTAL ECONOMIC BENEFIT OF PUBLIC RECREATION LANDS IN WASHINGTON STATE ('000)

Ecosystem Service	Low $/Year	High $/Year
Ecosystem Service Value	$216,407,768	$264,485,779
Consumer Surplus	$33,036,304	$33,036,304
Total	$249,444,072	$297,522,083

A LOOK BACK

- The 2015 *Economic Analysis of Outdoor Recreation in Washington State* estimated non recreation-based ecosystem services to be between $114 billion and $216 billion. This 2020 report increases the services valued, resulting in an ecosystem service value of $249 billion for the low estimate and $298 billion for the high estimate, or an average of $273 billion.
- Recreation as an ecosystem service also increased greatly in value, from $19.5 billion in 2015 to $33 billion in this 2020 report. In addition to new consumer surplus values being used, there was a significant increase in participant days recorded, leading to a large increase in the economic benefit.

CONCLUSION

Since 2015, the outdoor recreation industry in Washington has grown significantly. As a result of an increase in overall outdoor participation of 30 percent in the past 5 years, the state has seen a significant increase in consumer spending. This analysis found that the spending on outdoor recreation grew from $21.6 billion in spending in 2014, to $26.5 billion in 2019 – an increase of 22 percent. The increase of $5 billion in spending supported an additional 67,000 direct and indirect jobs in Washington's economy as compared to 2015, for a total of 264,000 jobs. The economic contribution of outdoor recreation is estimated at $40 billion, differing greatly from $20.5 billion estimated in 2015. In addition to increased participation and spending, new modeling methods were used, making the economic contribution results less comparable. Still, these estimates reaffirm industry and government data, which continues to show the significance of outdoor recreation to Washington's greater economy.

The ecosystem service analysis has been expanded to include new benefits that were not previously valued in 2015, such as climate stability, disaster risk reduction, and soil retention. Every year, communities throughout Washington receive between $216 billion and $264 billion per year in environmental benefits from public outdoor recreation lands, such as water supply and carbon sequestration. In addition, the consumer surplus value of outdoor recreation lands was estimated to be over $30 billion. There are many environmental services that were unable to be valued, such as pollinator services that are integral to our agricultural systems.

While this report highlights the immense value that outdoor recreation brings to the economy and Washingtonians, the results should be interpreted considering scope limitations. Due to the dispersed nature of many outdoor recreation activities, agencies have a difficult time monitoring recreational use on their lands. This challenge presents new opportunities in the field of outdoor recreation economics to monitor use through non-traditional approaches, such as social media and cell phone data. Additional research also should be conducted to monitor spending at local parks. While this report estimates spending at local parks through modeling and approximations, limited primary research has been conducted to date.

The benefits of outdoor recreation go far beyond the economic contributions and the environmental benefits presented in this report. Of significant note, physical and mental health benefits and the benefits to children were not valued in this report. Recent analysis commissioned by RCO, *Economic, Environmental, & Social Benefits of Recreational Trails in Washington State*, found the health savings associated with non-motorized trail use in Washington is $390 million per year.[xii] While non-motorized trail use is an extremely popular activity in Washington, it highlights the need to continue to study the health benefits of other recreation activities, such as snowmobiling, hunting, and swimming. Most importantly, however, outdoor recreation is a part of the heritage and culture of Washington – a value that no economic report will ever be able to capture.

APPENDIX A

COUNTY LEVEL RESULTS - ALL RECREATION

The following table presents county level spending and resulting economic effects from outdoor recreation participation. These estimates do not include equipment expenditures due to lack of data of where purchases occur.

FIGURE 19. COUNTY LEVEL RESULTS - ALL OUTDOOR RECREATION

COUNTY	TOTAL EXPENDITURES (000s)	ECONOMIC CONTRIBUTION (000s)	MULTIPLIER	EMPLOYMENT	State and Local Tax
Adams	$66,784	$107,510	1.6	785	$9,046
Asotin	$137,470	$216,029	1.6	1,627	$13,659
Benton	$357,379	$672,257	1.9	4,903	$47,804
Chelan	$305,592	$518,553	1.7	3,479	$35,070
Clallam	$358,936	$577,432	1.6	3,936	$30,612
Clark	$955,675	$1,372,386	1.4	7,519	$71,255
Columbia	$71,905	$95,811	1.3	525	$6,516
Cowlitz	$263,381	$402,707	1.5	2,461	$28,433
Douglas	$122,678	$199,431	1.6	1,229	$11,218
Ferry	$48,970	$63,143	1.3	343	$2,524
Franklin	$181,137	$271,118	1.5	1,599	$16,490
Garfield	$93,746	$123,778	1.3	437	$2,370
Grant	$378,213	$604,711	1.6	3,713	$41,346
Grays Harbor	$257,044	$402,104	1.6	2,642	$29,341
Island	$473,796	$748,625	1.6	5,192	$48,910
Jefferson	$357,561	$531,565	1.5	3,630	$28,022
King	$4,557,122	$8,864,925	1.9	46,563	$474,583
Kitsap	$614,030	$1,022,255	1.7	6,572	$66,985
Kittitas	$217,349	$305,936	1.4	1,666	$16,192
Klickitat	$153,254	$206,466	1.3	1,110	$12,434
Lewis	$278,127	$422,744	1.5	2,575	$29,130
Lincoln	$46,091	$60,498	1.3	358	$603
Mason	$227,589	$334,717	1.5	1,946	$17,474
Okanogan	$244,839	$458,213	1.9	3,187	$37,562
Pacific	$246,450	$436,854	1.8	3,484	$39,623
Pend Oreille	$43,046	$65,441	1.5	459	$4,545
Pierce	$1,837,176	$3,806,388	2.1	25,396	$288,937
San Juan	$131,782	$234,080	1.8	1,728	$18,479
Skagit	$343,907	$646,198	1.9	4,445	$51,113
Skamania	$122,875	$208,509	1.7	1,656	$15,423
Snohomish	$1,672,064	$3,034,886	1.8	20,718	$207,927
Spokane	$1,162,620	$2,614,170	2.2	17,773	$191,309
Stevens	$181,672	$335,708	1.8	2,515	$25,272
Thurston	$654,682	$1,326,389	2.0	9,148	$95,813
Wahkiakum	$19,572	$27,498	1.4	211	$2,149
Walla Walla	$145,024	$260,623	1.8	1,901	$21,781
Whatcom	$582,535	$1,214,444	2.1	8,122	$89,819
Whitman	$249,547	$422,431	1.7	2,867	$31,621
Yakima	$669,536	$1,233,279	1.8	8,584	$98,885
Grand Total	$18,831,156	$34,449,813	1.8	$217,003	$2,260,274

APPENDIX B

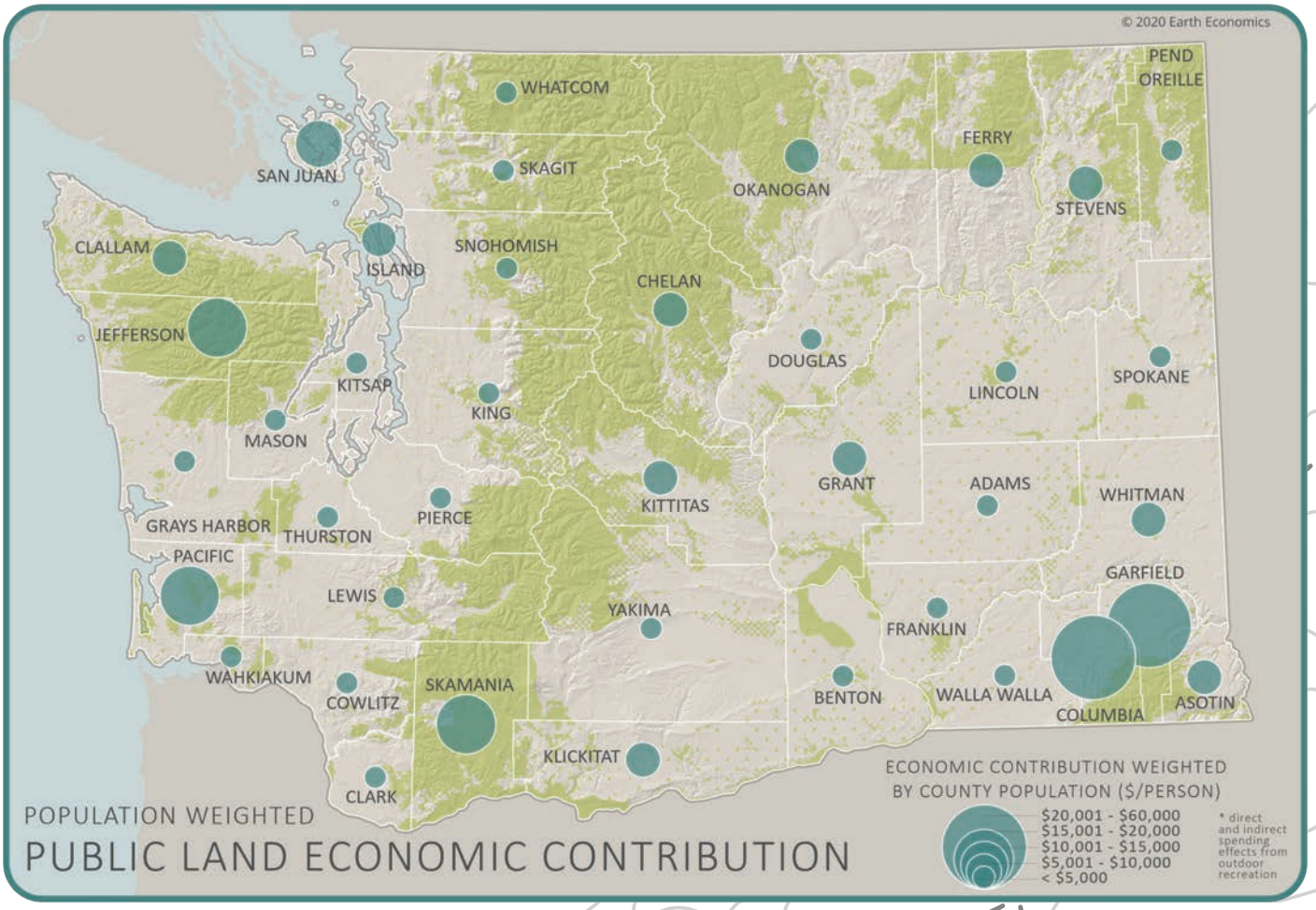
COUNTY LEVEL RESULTS - PUBLIC LAND RECREATION

The following table presents county level spending and resulting economic effects from outdoor recreation participation on public lands. These estimates do not include equipment expenditures.

FIGURE 20. COUNTY LEVEL RESULTS - PUBLIC LAND RECREATION

COUNTY	TOTAL EXPENDITURES (000s)	ECONOMIC CONTRIBUTION (000s)	MULTIPLIER	EMPLOYMENT	TAX REVENUE (000s)
Adams	$56,088	$89,911	1.6	673	$7,536
Asotin	$125,882	$196,546	1.6	1,510	$12,215
Benton	$267,098	$500,392	1.9	3,837	$35,229
Chelan	$262,430	$442,937	1.7	3,081	$29,678
Clallam	$288,826	$463,368	1.6	3,213	$24,209
Clark	$715,959	$1,028,143	1.4	6,054	$53,375
Columbia	$70,122	$93,496	1.3	514	$6,326
Cowlitz	$179,466	$275,208	1.5	1,776	$19,453
Douglas	$97,775	$156,553	1.6	977	$8,557
Ferry	$45,357	$58,397	1.3	325	$2,318
Franklin	$143,224	$213,983	1.5	1,323	$12,918
Garfield	$92,795	$122,569	1.3	434	$2,320
Grant	$324,354	$514,933	1.6	3,223	$34,800
Grays Harbor	$201,569	$314,631	1.6	2,111	$22,842
Island	$427,660	$674,276	1.6	4,744	$43,575
Jefferson	$338,211	$501,467	1.5	3,443	$26,173
King	$3,714,831	$7,185,161	1.9	38,813	$380,967
Kitsap	$472,428	$783,181	1.7	5,214	$51,008
Kittitas	$189,439	$266,567	1.4	1,500	$14,085
Klickitat	$138,886	$186,209	1.3	1,009	$11,104
Lewis	$172,120	$262,497	1.5	1,673	$18,208
Lincoln	$38,173	$49,560	1.3	292	$475
Mason	$168,860	$249,178	1.5	1,485	$12,920
Okanogan	$207,771	$388,335	1.9	2,765	$31,730
Pacific	$216,085	$383,942	1.8	3,081	$34,580
Pend Oreille	$36,810	$56,171	1.5	412	$3,936
Pierce	$1,368,907	$2,823,849	2.1	20,037	$212,462
San Juan	$119,011	$211,034	1.8	1,578	$16,573
Skagit	$252,376	$472,419	1.9	3,450	$37,119
Skamania	$115,741	$196,114	1.7	1,568	$14,472
Snohomish	$1,226,789	$2,214,061	1.8	16,246	$149,883
Spokane	$898,050	$2,002,685	2.2	14,179	$145,463
Stevens	$132,633	$245,092	1.8	1,902	$18,461
Thurston	$503,454	$1,013,705	2.0	7,340	$72,534
Wahkiakum	$13,825	$19,310	1.4	153	$1,482
Walla Walla	$114,631	$205,212	1.8	1,539	$16,875
Whatcom	$442,700	$919,404	2.1	6,496	$67,595
Whitman	$224,117	$379,557	1.7	2,613	$27,643
Yakima	$554,068	$1,016,375	1.8	7,253	$81,289
Grand Total	$14,958,521	$27,176,428	1.8	177,836	$1,762,388

FIGURE 21. POPULATION WEIGHTED PUBLIC LAND ECONOMIC CONTRIBUTION, WASHINGTON STATE
ECONOMIC CONTRIBUTION WEIGHTED BY COUNTY POPULATION ($/PERSON)



APPENDIX C

LEGISLATIVE DISTRICT - TOTAL EXPENDITURES

The following table presents legislative district spending from outdoor recreation participation.

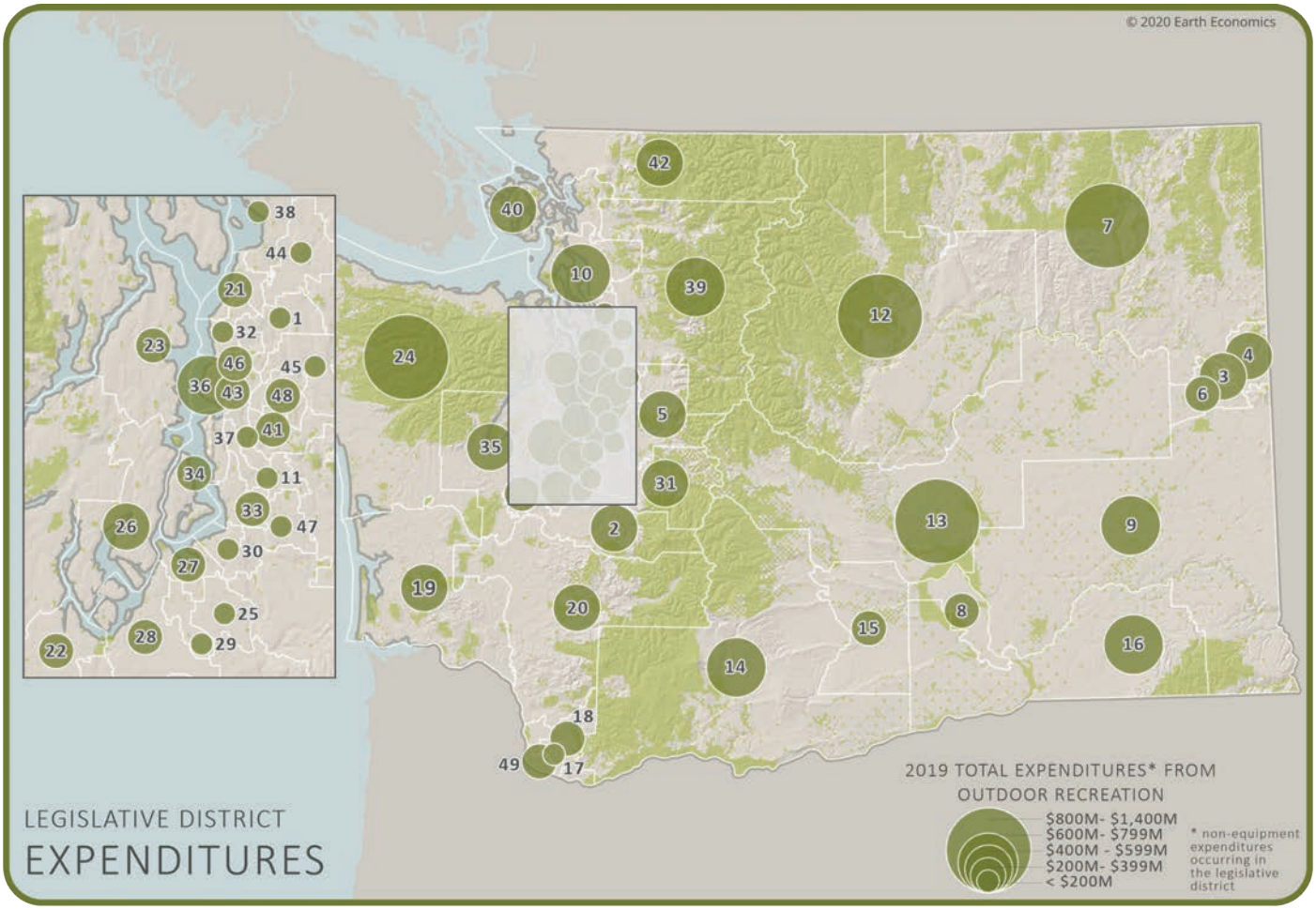
FIGURE 22. LEGISLATIVE DISTRICT RESULTS - TOTAL EXPENDITURES (MILLIONS)

LEGISLATIVE DISTRICT	TOTAL	FEDERAL	STATE	PUBLIC WATERS	LOCAL, INCL. EVENTS AND GOLF	PRIVATE	PUBLIC/ PRIVATE	EQUIPMENT SPENDING
District 1	$332	$28	$22	$46	$10	$61	$9	$156
District 2	$589	$42	$123	$124	$44	$61	$40	$156
District 3	$584	$34	$105	$223	$0	$64	$2	$156
District 4	$600	$41	$82	$174	$77	$62	$7	$156
District 5	$713	$53	$115	$210	$66	$62	$49	$156
District 6	$463	$34	$44	$93	$63	$63	$11	$156
District 7	$1,154	$82	$287	$222	$165	$61	$182	$156
District 8	$425	$35	$3	$6	$147	$63	$14	$156
District 9	$769	$54	$250	$114	$112	$62	$22	$156
District 10	$923	$62	$149	$292	$167	$61	$36	$156
District 11	$294	$23	$4	$10	$27	$68	$5	$156
District 12	$1,057	$74	$269	$260	$201	$62	$35	$156
District 13	$1,527	$92	$369	$644	$154	$62	$49	$156
District 14	$945	$66	$418	$169	$48	$63	$26	$156
District 15	$417	$32	$0	$51	$98	$61	$19	$156
District 16	$825	$61	$416	$46	$63	$62	$20	$156
District 17	$263	$21	$0	$15	$0	$61	$10	$156
District 18	$499	$38	$15	$105	$98	$64	$22	$156
District 19	$714	$42	$7	$325	$87	$62	$35	$156
District 20	$723	$52	$68	$174	$152	$61	$60	$156
District 21	$358	$29	$0	$6	$101	$61	$5	$156
District 22	$432	$36	$3	$23	$139	$63	$12	$156
District 23	$480	$39	$0	$50	$158	$61	$16	$156
District 24	$1,153	$70	$263	$406	$152	$61	$44	$156
District 25	$252	$21	$0	$9	$0	$61	$5	$156
District 26	$585	$46	$0	$66	$236	$63	$18	$156
District 27	$497	$41	$0	$22	$211	$61	$7	$156
District 28	$373	$31	$2	$28	$67	$65	$24	$156
District 29	$267	$23	$0	$6	$10	$65	$7	$156
District 30	$338	$28	$0	$23	$62	$61	$7	$156
District 31	$590	$41	$52	$170	$67	$64	$39	$156
District 32	$256	$20	$0	$7	$0	$64	$9	$156
District 33	$439	$35	$0	$26	$149	$63	$10	$156
District 34	$415	$34	$0	$26	$127	$63	$9	$156
District 35	$668	$48	$22	$156	$178	$62	$47	$156
District 36	$840	$69	$107	$7	$435	$63	$3	$156
District 37	$345	$28	$0	$5	$92	$61	$3	$156
District 38	$331	$26	$0	$14	$59	$65	$10	$156
District 39	$917	$59	$133	$352	$87	$64	$65	$156
District 40	$578	$41	$0	$150	$147	$63	$21	$156

FIGURE 22. LEGISLATIVE DISTRICT RESULTS - TOTAL EXPENDITURES (MILLIONS) (CONTINUED)

LEGISLATIVE DISTRICT	TOTAL	FEDERAL	STATE	PUBLIC WATERS	LOCAL, INCL. EVENTS AND GOLF	PRIVATE	PUBLIC/ PRIVATE	EQUIPMENT SPENDING
District 41	$545	$42	$0	$100	$177	$61	$10	$156
District 42	$618	$46	$94	$117	$103	$61	$42	$156
District 43	$493	$41	$0	$3	$224	$64	$4	$156
District 44	$315	$26	$0	$10	$53	$61	$9	$156
District 45	$327	$34	$0	$20	$40	$61	$16	$156
District 46	$437	$34	$0	$44	$132	$64	$7	$156
District 47	$301	$26	$0	$13	$36	$63	$8	$156
District 48	$384	$32	$0	$16	$105	$65	$9	$156
District 49	$381	$31	$0	$12	$111	$61	$10	$156
Washington State	$26,482	$1,959	$2,259	$5,192	$5,233	$3,060	$1,128	$7,651

FIGURE 23. LEGISLATIVE DISTRICT EXPENDITURES, WASHINGTON STATE



APPENDIX D

ECONOMIC CONTRIBUTIONS BY ACTIVITY

In 2017, RCO commissioned a survey to assess the demand for outdoor recreation in the state, *State of Washington 2017 Assessment of Outdoor Recreation Demand Report*.[xiii] The survey yielded estimates of outdoor recreation participation in Washington, by Washington residents. We used the results of the survey to estimate the spending related to these outdoor recreation activities. Activities such as wildlife watching, hiking, and boating yielded strong spending estimates. The results in this appendix do not account for double-counting

FIGURE 24. SPENDING BY ACTIVITY

ACTIVITY	TOTAL EXPENDITURES	NUMBER OF PARTICIPANTS	PARTICIPANT DAYS
Air Activities			
Hang gliding, ski diving, or paragliding	$15,570,238	59,321	118,642
Bicycling			
Bicycling on paved or gravel trail	$733,965,013	1,127,096	24,796,115
Bicycling on roads or streets	$1,273,025,441	1,483,021	43,007,616
BMX or pump track	$33,362,046	59,321	1,127,096
Electric bicycling	$31,606,149	59,321	1,067,775
Fat tire on snow	$6,145,640	29,660	207,623
Mountain biking on paved or gravel trail	$479,306,886	474,567	9,965,903
Mountain biking on natural or dirt trail	$359,480,164	415,246	7,474,427
Camping			
Accessible by boat	$85,590,515	296,604	1,779,626
RV or motorhome or trailer – undeveloped site	$182,593,099	474,567	3,796,534
RV or motorhome or trailer – developed campground	$513,543,092	1,067,775	10,677,753
Tent with car or motorcycle – undeveloped site	$25,677,155	88,981	533,888
Tent with car or motorcycle – developed campground	$313,831,889	1,305,059	6,525,294
Yurts or cabins	$25,677,155	88,981	533,888
Climbing or mountaineering			
Caving	$17,118,103	177,963	355,925
Mountaineering	$39,942,240	118,642	830,492
Rock and ice	$102,708,618	237,283	2,135,551
Fishing – freshwater	5,932,085		
Bank, dock, pier, or jetty	$632,396,346	1,067,775	13,881,079
Boat	$486,458,728	889,813	10,677,753
Fly fishing	$245,931,912	415,246	5,398,197
Fishing – saltwater	5,932,085		
Bank, dock, pier, or jetty	$72,968,809	177,963	1,601,663
Boat	$132,424,876	415,246	2,906,722
Fly fishing	$9,458,920	29,660	207,623
Hiking			
Backpacking	$407,981,456	771,171	8,482,882
Day-hiking	$2,116,938,745	3,144,005	44,016,071
Off-trail hiking	$927,230,583	1,483,021	19,279,276
With pet	$1,631,925,825	1,542,342	33,931,526
Hunting or trapping			
Big game	$359,196,694	533,888	4,804,989
Birds or small game	$243,898,990	296,604	3,262,647
Trapping	$17,738,108	29,660	237,283
Leisure activities at a park			
Family gathering	$160,999,160	2,491,476	14,948,854
Picnicking, BBQ, or cookout	$164,832,473	2,550,797	15,304,779
Playing	$499,608,504	2,728,759	46,388,905
Relaxing, reading, hanging out	$366,720,308	2,432,155	34,050,168
Visiting a dog park	$224,887,715	949,134	20,880,939
Yard games (e.g., badminton, croquet, bocce, horseshoes)	$35,777,591	415,246	3,321,968

Figure continues on following page.

FIGURE 24. SPENDING BY ACTIVITY (CONTINUED)

ACTIVITY	TOTAL EXPENDITURES	NUMBER OF PARTICIPANTS	PARTICIPANT DAYS
Nature activities			
Gardening, flowers, or vegetables at a community garden	$80,499,580	355,925	7,474,427
Gather or collect things in a nature setting (e.g., rocks, shells, plants)	$593,140,637	3,203,326	44,846,563
Outdoor photography, painting, or drawing	$593,140,637	1,601,663	44,846,563
Visiting a beach or tide pools	$747,843,126	385,586	5,783,783
Visiting a nature interpretive center	$78,457,756	1,483,021	5,932,085
Visiting rivers or streams	$5,853,575,748	3,915,176	78,303,522
Visiting wetlands	$1,884,674,010	1,483,021	25,211,361
Visiting zoos, gardens, or arboretums	$164,761,288	2,491,476	12,457,379
Wildlife or nature viewing	$682,917,171	326,265	9,135,411
Off-road vehicle driving or riding			
"Off-road – ATV at a developed area (including 3 or 4 wheel ATVs, straddle seat, and handle bars)"	$39,942,240	118,642	830,492
"Off-road – ATV on trails (including 3- or 4-wheel ATVs, straddle seat, and handle bars)"	$222,535,340	355,925	4,627,026
"Off-road – 4-wheel drive vehicles at developed area (including Jeeps, pick-ups, dune buggies, SUVs)"	$39,942,240	118,642	830,492
"Off-road – 4-wheel drive vehicles on trails (including Jeeps, pick-ups, dune buggies, SUVs)"	$259,624,563	415,246	5,398,197
Off-road – Motorcycles at developed area	$22,824,137	59,321	474,567
Off-road – Motorcycles on trails	$68,472,412	118,642	1,423,700
"Off-road – UTVs or side-by-side ATVs at developed area (includes non- straddle seat, driver & passenger sit side-by-side in vehicle, steering wheel for control)"	$17,118,103	59,321	355,925
"Off-road – UTVs or side-by-side ATVs on trails (includes non-straddle seat, driver & passenger sit side-by-side in vehicle, steering wheel for control)"	$77,031,464	177,963	1,601,663
Outdoor sports			
Baseball	$54,496,878	415,246	7,059,181
Basketball	$105,788,058	652,529	13,703,116
Dodgeball	$8,243,225	118,642	1,067,775
Football	$44,879,782	415,246	5,813,443
Golf – ball golf including pitch-n-putt, 3-par, 9 or 18 hole, and driving ranges	$1,281,208,172	1,008,454	16,135,271
Golf – disc golf	$70,235,886	296,604	2,372,834
Golf – foot golf	$7,023,589	59,321	237,283
Golf – mini golf	$57,944,606	652,529	1,957,588
Kickball	$12,364,838	177,963	1,601,663
Lacrosse	$2,747,742	29,660	355,925
Multi-sport races (e.g., mini, half, or triathlons)	$10,535,383	177,963	355,925
Paintball	$15,803,074	177,963	533,888
Pickleball	$13,738,709	118,642	1,779,626
Ping pong or table tennis	$50,375,266	652,529	6,525,294
Rugby	$4,350,591	29,660	563,548
Soccer	$86,553,866	533,888	11,211,641
Softball	$35,720,643	355,925	4,627,026
Tennis	$48,085,481	415,246	6,228,689
Ultimate Frisbee	$9,159,139	118,642	1,186,417
Volleyball	$28,851,289	415,246	3,737,214

Figure continues on following page.

FIGURE 24. SPENDING BY ACTIVITY (CONTINUED)

ACTIVITY	TOTAL EXPENDITURES	NUMBER OF PARTICIPANTS	PARTICIPANT DAYS
Running			
Natural or dirt trail	$17,860,322	88,981	2,313,513
Park or trail setting	$178,603,215	771,171	23,135,132
Paved or gravel setting	$172,649,775	771,171	22,363,960
Races	$105,087,332	355,925	2,135,551
Roads or streets without sidewalks	$214,323,858	771,171	27,762,158
Sidewalks	$214,323,858	771,171	27,762,158
With pet	$108,993,757	415,246	14,118,362
Shellfishing (shellfish or clams)			
Sightseeing activities – purposeful or intentional			
Outdoor cultural or historical facility	$372,641,716	1,660,984	8,304,919
Scenic or wilderness area	$1,493,228,589	3,025,363	33,278,997
Snow and ice activities			
Cross country skiing or skiing – backcountry or undeveloped area	$118,747,272	118,642	711,850
Cross country skiing or skiing – developed facility	$148,434,090	177,963	889,813
Downhill skiing or snowboarding – backcountry or undeveloped area	$59,373,636	59,321	355,925
Downhill skiing or snowboarding – developed facility	$712,483,633	533,888	4,271,101
ORV riding on snow or ice	$118,747,272	118,642	711,850
Outdoor ice skating or hockey	$17,118,103	118,642	355,925
Sledding, inner tubing, or other snow play	$271,036,632	1,127,096	5,635,481
Snowmobiling	$207,807,726	177,963	1,245,738
Snowshoeing	$79,884,481	415,246	1,660,984
Stock or horseback riding			
Mountain or forest trails	$235,516,208	237,283	3,559,251
Open air stables or grounds	$341,498,502	177,963	5,160,914
Other trails	$329,722,691	237,283	4,982,951
Roads or streets	$204,114,047	118,642	3,084,684
Swimming			
Swimming/wading at a beach - freshwater	$85,276,494	326,265	3,915,176
Swimming/wading at a beach - saltwater	$418,630,060	2,135,551	19,219,955
Swimming in an outdoor pool	$63,311,336	207,623	2,906,722
Using a splash pad or spray park	$144,711,626	830,492	6,643,935
Target shooting			
Bow and arrow	$147,495,361	237,283	4,982,951
Pistol	$337,132,255	949,134	11,389,603
Rifle	$316,061,489	889,813	10,677,753
Shotgun	$158,030,744	533,888	5,338,877
At a developed range	$189,636,893	533,888	6,406,652
At a non-developed range	$34,239,995	88,981	1,156,757
Trending activities			
Inline skating, roller skating, or roller skiing	$110,621,521	415,246	3,737,214
Metal detecting	$16,028,494	296,604	2,076,230
Mining	$73,747,681	177,963	2,491,476
Obstacle course or adventure race (e.g., color runs, mud runs, obstacle race)	$28,094,355	237,283	949,134
Parkour	$3,205,699	59,321	415,246

Figure continues on following page.

FIGURE 24. SPENDING BY ACTIVITY (CONTINUED)

ACTIVITY	TOTAL EXPENDITURES	NUMBER OF PARTICIPANTS	PARTICIPANT DAYS
Trending activities (continued)			
Ropes course or zip line	$49,165,120	415,246	1,660,984
Skateboarding or longboarding	$147,495,361	237,283	4,982,951
Technology-based games (e.g., geocaching, Pokémon Go)	$1,738,338,188	1,067,775	58,727,642
Walking			
Park or trail setting	$1,346,393,468	4,982,951	174,403,299
Paved or gravel trail	$1,016,664,456	4,389,743	131,692,287
Natural or dirt trail	$85,866,930	444,906	11,122,659
Roads or streets without sidewalks	$1,533,239,909	3,677,893	198,606,206
Sidewalks	$1,905,100,962	3,855,855	246,774,736
With pet	$1,579,951,519	2,728,759	204,656,933
Water-based activities – Freshwater			
Inner tubing or floating	$293,143,099	1,008,454	6,050,727
Motorboating other than personal watercraft – 26 feet or more	$224,002,082	237,283	2,372,834
Motorboating other than personal watercraft – less than 26 feet	$1,478,413,744	1,305,059	15,660,704
Paddling – including whitewater, canoeing, kayaking, or rowing	$844,172,521	1,127,096	10,143,865
Personal watercraft – including jet skis or wave runners	$392,003,644	415,246	4,152,460
Sail boating	$67,200,625	118,642	711,850
Snorkeling or SCUBA diving	$93,421,429	118,642	711,850
Stand up paddle boarding	$177,720,531	355,925	2,135,551
Surfing	$12,341,704	29,660	148,302
Water skiing, wakeboarding, or wake surfing	$352,803,280	415,246	3,737,214
Wind surfing or kiteboarding	$40,299,437	29,660	415,246
Water-based activities – Saltwater			
Motorboating other than personal watercraft – 26 feet or more	$352,803,280	415,246	3,737,214
Motorboating other than personal watercraft – less than 26 feet	$537,604,998	474,567	5,694,802
Paddling – including whitewater, canoeing, kayaking, or rowing	$315,947,610	474,567	3,796,534
Personal watercraft – including jet skis or wave runners	$50,400,469	59,321	533,888
Sail boating	$151,201,406	177,963	1,601,663
Snorkeling or SCUBA diving	$155,702,382	237,283	1,186,417
Stand up paddle boarding	$59,240,177	118,642	711,850
Surfing	$49,366,814	118,642	593,209
Water skiing, wakeboarding, or wake surfing	$33,600,312	59,321	355,925
Wind surfing or kiteboarding	$20,149,719	29,660	207,623
Total	$50,781,715,496	104,019,110	2,124,160,997

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