



Source: WA STATE DNR

## Chapter 7 Agricultural Resources Asset Class

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# Executive Summary

The Agricultural Resources Asset Class consists of state trust lands leased to third parties for four types of agricultural purposes—Irrigated Annuals, Irrigated Perennials, Dryland, and Non-Production Land. The table below provides a brief summary of the Agricultural Resources Asset Class and a conclusion on the Trust Values for each subgroup and the whole asset class based on the following extraordinary assumptions.

We assume that all state trust lands leased for agricultural uses adhere to proper zoning regulations outlined in local general plans. If not fully compliant, we assume that each property is legally non-conforming to the proper regulations and standards. For the purpose of this analysis, we assume that the ownership interest is non-transferable resulting in the land not being able to be sold. We relied upon information provided by the Trust Manager for all specific data regarding data files, leasing activities and financials, and size and ownership information. We assume that the information provided is accurate and sufficient for the purpose of this valuation.

Importantly, the value appraised is the Trust Value, which is defined earlier in this report. This value type is applicable to all asset classes and subject to specific laws, regulations, or management policies that restrict the use, marketability, or sale of these asset classes.

<b>Agricultural Resources Asset Class Executive Summary</b>					
	<b>Irrigated Annuals</b>	<b>Irrigated Perennials</b>	<b>Dryland</b>	<b>Non-Production Land</b>	<b>Total</b>
Acres Leased [1]	30,889	18,571	107,389	80,787	<b>237,635</b>
Total Leases [2]	136	108	441	655	<b>800</b>
Stabilized Gross Revenues	\$10,000,000	\$8,500,000	\$4,000,000	\$1,000,000	<b>\$23,500,000</b>
Operating Cost 29% Deduct	<b>(\$2,900,000)</b>	<b>(\$2,465,000)</b>	<b>(\$1,160,000)</b>	<b>(\$290,000)</b>	<b>(\$6,815,000)</b>
Trust Net Operating Income	\$7,100,000	\$6,035,000	\$2,840,000	\$710,000	<b>\$16,685,000</b>
Capitalization Rate	7.00%	7.00%	7.00%	7.00%	<b>7.00%</b>
Value Indication (Rounded)	<b>\$101,400,000</b>	<b>\$86,200,000</b>	<b>\$40,600,000</b>	<b>\$10,100,000</b>	<b>\$238,300,000</b>
Concluded Trust Value	<b>\$101,400,000</b>	<b>\$86,200,000</b>	<b>\$40,600,000</b>	<b>\$10,100,000</b>	<b>\$238,300,000</b>
\$/Acre	\$3,284	\$4,642	\$378	\$126	<b>\$1,003</b>
\$/Lease	\$745,588	\$798,148	\$92,063	\$15,420	<b>\$297,875</b>

[1] Represents the total acreage in FY18 as provided by Trust Management.

[2] Represents all FY18 contracts with the subgroup's use type. The total of 800 does not double count leases with multiple subgroup revenue types reported.

# Introduction

The Agricultural Resources Asset Class includes leased trust lands located mostly throughout eastern Washington.

## INTRODUCTION

The Agricultural Resources Asset Class consists of state trust lands leased for the production of agricultural commodities. The asset class involves agricultural leases, sharecropping agreements, and land improvements such as irrigation wells and systems.

Agricultural lands are typically located in areas with soil types, climate conditions, precipitation levels, and irrigation systems that are favorable for agricultural production. Although these areas are spread throughout the state, they are mostly concentrated on the east side of the Cascade mountain range. In FY 2018, a total of 237,635 acres of state trust lands were reportedly leased for agricultural purposes.

As of the date of value, there were 800 leases associated with the Agricultural Resources Asset Class. Approximately 275 of these leases were independent leases for a single agricultural use, while the other 525 leases were shared leases for at least two different agricultural or grazing uses.<sup>1</sup>

The Washington State Department of Natural Resources (the “Trust Manager” or “Trust Management”) works with lessees to ensure they maintain productive and sustainable land use practices that protect public resources such as water, fish, and wildlife. As of the valuation date, the typical lease terms for dryland and irrigated uses was 10 years, although leases for vineyards and orchards are typically issued for longer terms of 25 years.

The Trust Manager uses public auctions to award new leases for agricultural purposes, or to award an existing lease that a lessee does not want to renew. Potential lessees must display sustainable agriculture and land management capabilities, as well as the financial resources to carry out intended farming operations. The Trust Manager requires potential lessees to have a minimum of two years of successful experience or formal education germane to the use for which the land will be leased.

When a lease is close to terminating, the Trust Manager advertises the lease for third-party interest. Qualified third parties can submit a bonus bid to try and secure the lease. If no bonus bid is received, DNR renegotiates the lease with the current lease holder.

The Agricultural Resources Asset Class typically generates more than \$20 million in gross revenue every year for state trust land beneficiaries.

## Agricultural Resources

More than 237,000 acres of state trust lands are used for agricultural purposes. Leases for agricultural purposes are awarded to applicants to optimize the short-term and long-term return to trust beneficiaries. For each lease, the Trust Manager considers such factors as crop options, soil types, and water availability. Rents are either collected as cash per acre, per unit (i.e., bin or ton); as a percentage of crop revenue; or as a combination of these two options.

<sup>1</sup> A single lease can include land designated for, and generating revenue from, multiple agricultural or grazing uses. For example, one lease can be for land used to grow wheat, as well as an orchard, and some areas may be used for grazing.

As a general note, all dollar amounts reported in this chapter are nominal and have not been adjusted for inflation. Additionally, we note that all years referenced are fiscal years—not calendar years. The fiscal year for state trust lands begins on July 1 and ends on June 30.

**Subgroups.** For the purposes of this portfolio valuation analysis, the Agricultural Resources Asset Class has been divided into four subgroups based on agricultural purposes—Irrigated Annuals, Irrigated Perennials, Dryland, and Non-Production Land. The subgroups are based on either asset management criteria, asset valuation criteria, or the availability of asset data needed for analytical purposes. We found the segregation of the Agricultural Resources Asset Class into these four subgroups to be appropriate.

The four subgroups in the Agricultural Resources Asset Class are as follows:

#### 1. Irrigated Annuals

- a. Irrigated agricultural lands that support row crops.
- b. Harvested crops include wheat, barley, alfalfa, hay, potatoes, corn, beans, mint, and others.

#### 2. Irrigated Perennials

- a. Irrigated agricultural lands that support long-term orchards and vineyards.
- b. Harvested crops include vineyard and orchard crops such as grapes, blueberries, apples, cherries, pears, and peaches.

#### 3. Dryland

- a. Agricultural lands that are not irrigated.

- b. Harvested crops include winter wheat, spring wheat, barley, canola (i.e., oil seed), triticale, legumes, and hay.

#### 4. Non-Production Land

- a. For the purpose of this valuation, non-production<sup>2</sup> land is considered agricultural land that is intentionally removed from active production for various reasons and for different periods of time. Land in this category receive rent paid to prevent the land from being used for agricultural purposes.
- b. Examples include land used for wildlife habitat protection and lands enrolled in the Conservation Reserve Program (CRP), a land conservation program administered by the US Farm Service Agency. The CRP provides annual rental payments to farmers for removing environmentally sensitive land from agricultural production and promoting plant species that improve environmental health and quality.<sup>3</sup> The Trust Manager allows lessees to enroll less productive lands in the CRP when doing so will earn more revenue for the trusts than continuing to farm the land, or when the soils need to be protected from erosion.

In FY 2018, there were reportedly 800 leases for agricultural uses on state trust lands that comprised approximately 237,635 acres. The leases and acres are summarized by subgroup in Figure 1 and Figure 2.

<sup>2</sup> This valuation did not include lands that have never been farmed or grazed because they lack the characteristics of productive land.

<sup>3</sup> <https://www.fsa.usda.gov/programs-and-services/conservation-programs/conservation-reserve-program/>

Note that the lease count figures represent the total number of leases for each agricultural use. One lease contract can include multiple different uses. For example, the same lease contract can include revenue received for Irrigated Annuals as well as Dryland. Approximately 275 of these leases were independent leases for a single agricultural use, while the other 525 leases were shared leases for at least two agricultural uses.

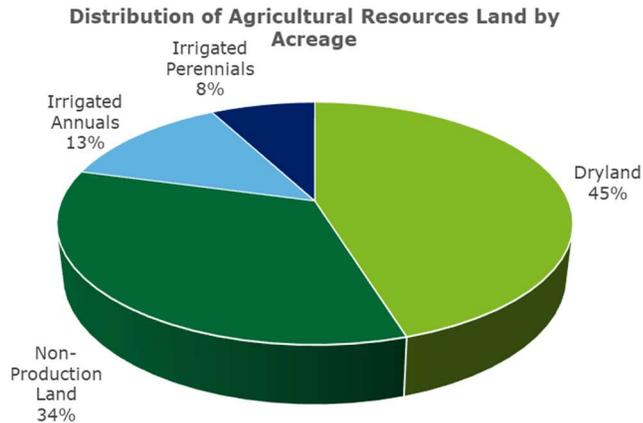
### Agricultural Resources Subgroup Acreage

FIGURE 1

Agricultural Use	Lease Count*	Acres
Dryland	441	107,389
Non-Production Land	655	80,787
Irrigated Annuals	136	30,889
Irrigated Perennials	108	18,571
<b>Totals</b>	<b>800</b>	<b>237,635</b>

\*Represents the number of leases with each agricultural use listed. The total of 800 does not double count leases with shared uses.

FIGURE 2



Dryland comprises the largest agricultural use by acreage with more than 107,000 leased acres. Land in the Irrigated Annual and Irrigated Perennial subgroups were converted from dryland irrigation or grazing uses. The conversion process started in 1970 with well drilling and acquisition of surface rights.

While the Dryland and Non-Production Land subgroups make up the majority of agricultural resources by acreage (79 percent), they produce only 23 percent of revenue received from the Agricultural Resources Asset Class.

The asset class brought in gross revenue of approximately \$24.7 million in FY 2018. The following table and chart highlight the allocation of gross revenue (rounded) between different subgroup types.

### Agricultural Resources Subgroup Revenue<sup>4</sup>

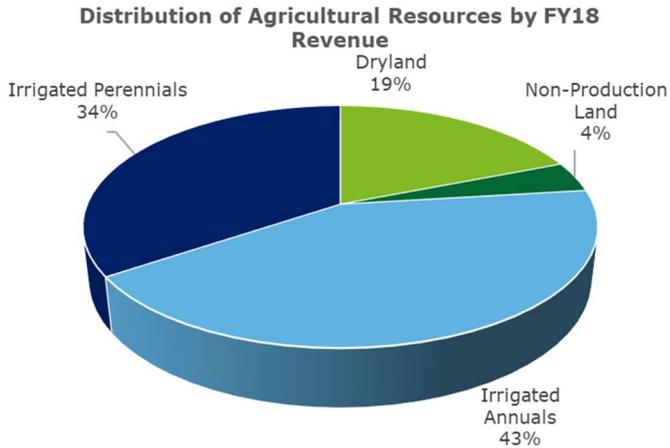
FIGURE 3

Agricultural Use	Lease Count*	Gross Revenue (FY18)
Dryland	441	\$4,700,000
Non-Production Land	655	\$1,000,000
Irrigated Annuals	136	\$10,500,000
Irrigated Perennials	108	\$8,500,000
<b>Totals</b>	<b>800</b>	<b>\$24,700,000</b>

\*Represents the number of leases with each agricultural use listed. The total of 800 does not double count leases with shared uses.

<sup>4</sup> Revenue from leases for Non-Production Land is received from federal conservation and wildlife protection agencies.

FIGURE 4



In FY 2018, the Irrigated Annuals and Irrigated Perennials subgroups brought in 77 percent of the combined gross revenue for the Agricultural Resources Asset Class—the majority of gross revenue for the asset class.

**Agricultural Resources Asset Class Ownership.** The Trust Manager manages and operates state trust lands owned by the State of Washington for the benefit of designated trust beneficiaries. To be concise, this report uses the term “ownership” or “ownership interests” to describe the amount or percentage of gross revenue or land managed by the Trust Manager on behalf of specific trust beneficiaries, even though the land is owned by the State of Washington and not the trust beneficiaries.

The following tables and charts present the trust beneficiaries’ ownership interest in the Agricultural Resources Asset Class based on acreage and gross revenue for each subgroup.

**Irrigated Annuals Ownership Composition**

FIGURE 5

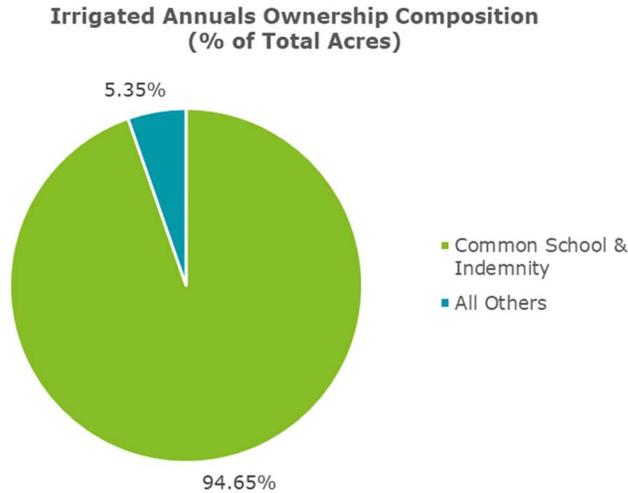
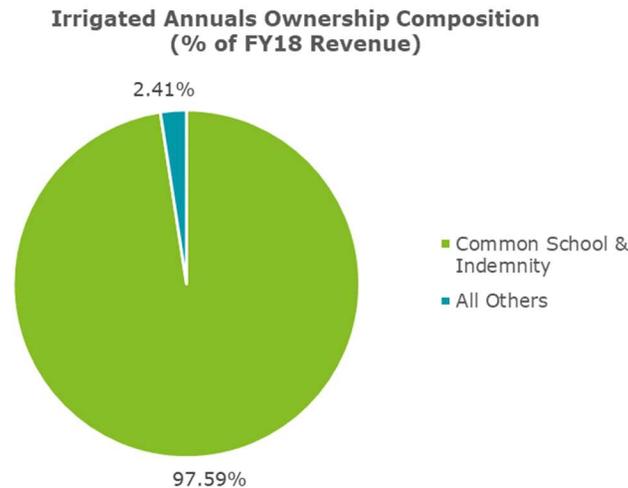


FIGURE 6



For the Irrigated Annuals subgroup, the largest ownership share is held by the Common School and Indemnity Trust, which supports statewide public school construction and other designated programs. The beneficiary ownership interests in these lands are the result of federal land grants to Washington at the time statehood was granted.

**Irrigated Perennials Ownership Composition**

FIGURE 7

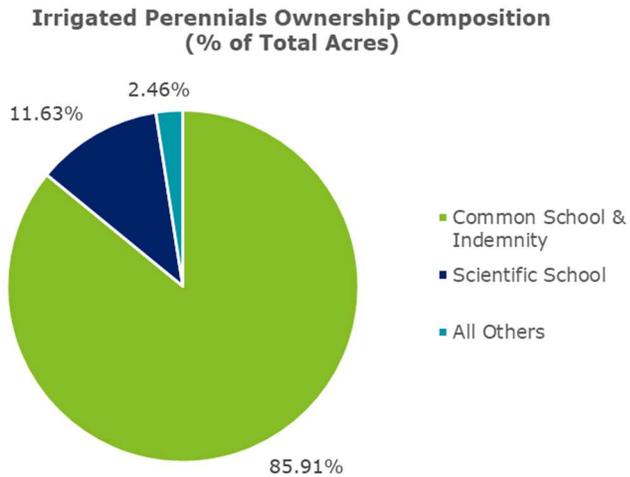
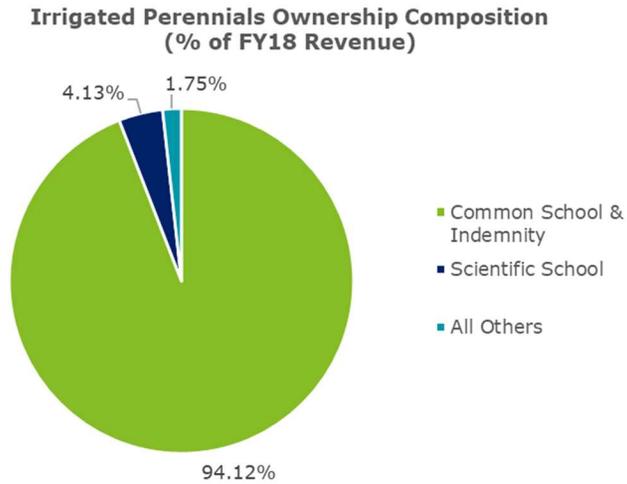


FIGURE 8



Similarly, the Common School and Indemnity Trust holds the largest share of the Irrigated Perennials subgroup by both revenue received and total acreage. The Scientific School Trust owns a small portion of revenue received and total acreage.

### Dryland Ownership Composition

FIGURE 9

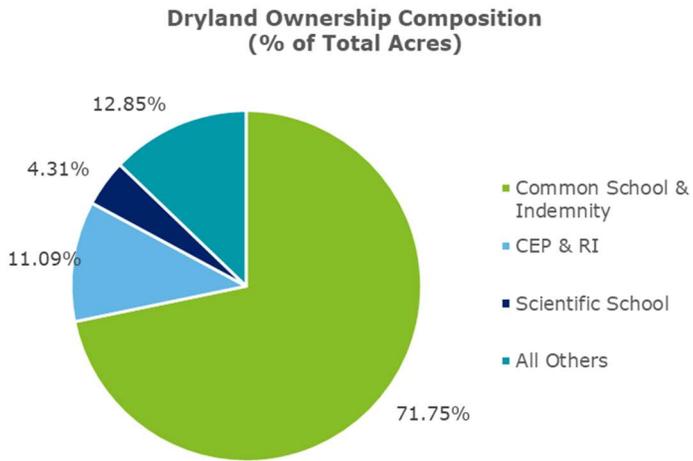
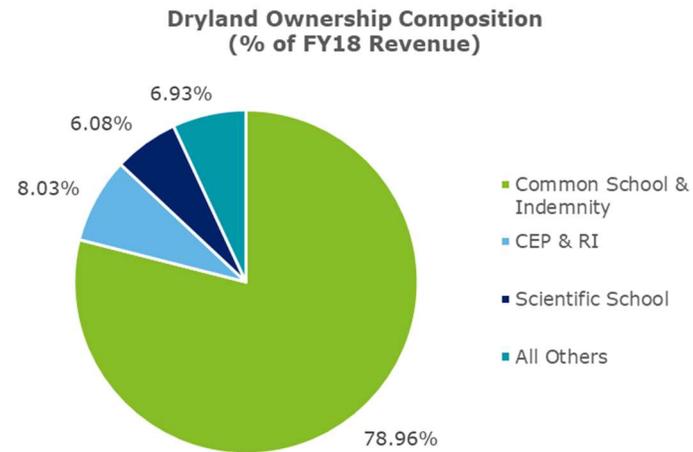


FIGURE 10



For the Dryland subgroup, the Charitable, Educational, Penal, and Reformatory Institution Trust (CEP & RI) and the Scientific School Trust own slightly larger ownership interests in this subgroup than most other trust beneficiaries, except the Common School and Indemnity Trust, which again owns the majority share.

### Non-Production Land Ownership Composition

FIGURE 11

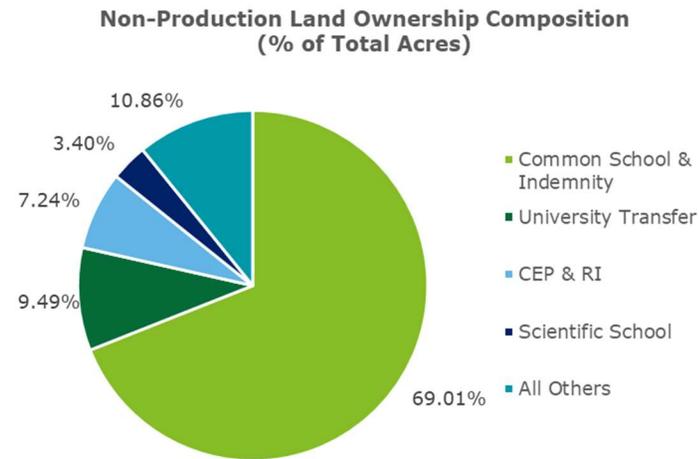
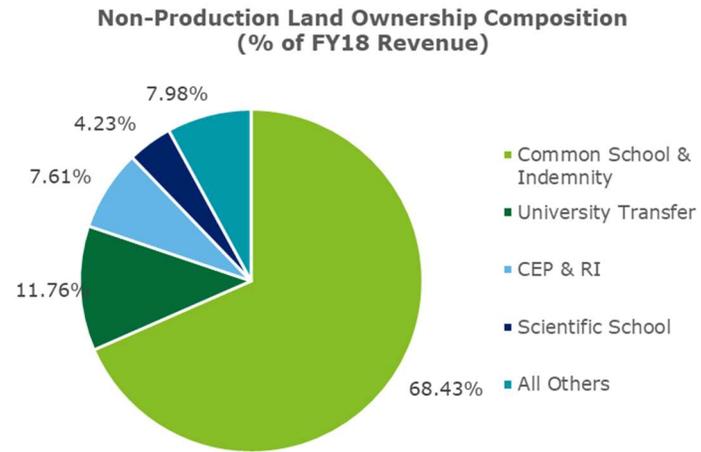


FIGURE 12



For the Non-Production Land subgroup, the Common School and Indemnity Trust again holds the majority ownership, followed by the University Transfer Trust, CEP & RI Trust, and Scientific School Trust. The remainder of trust beneficiaries hold minimal or no ownership interest in Non-Production Land.

# Physical Description

In FY 2018, the total acreage of the Agricultural Resources Asset Class was approximately 237,000 acres.

FIGURE 13

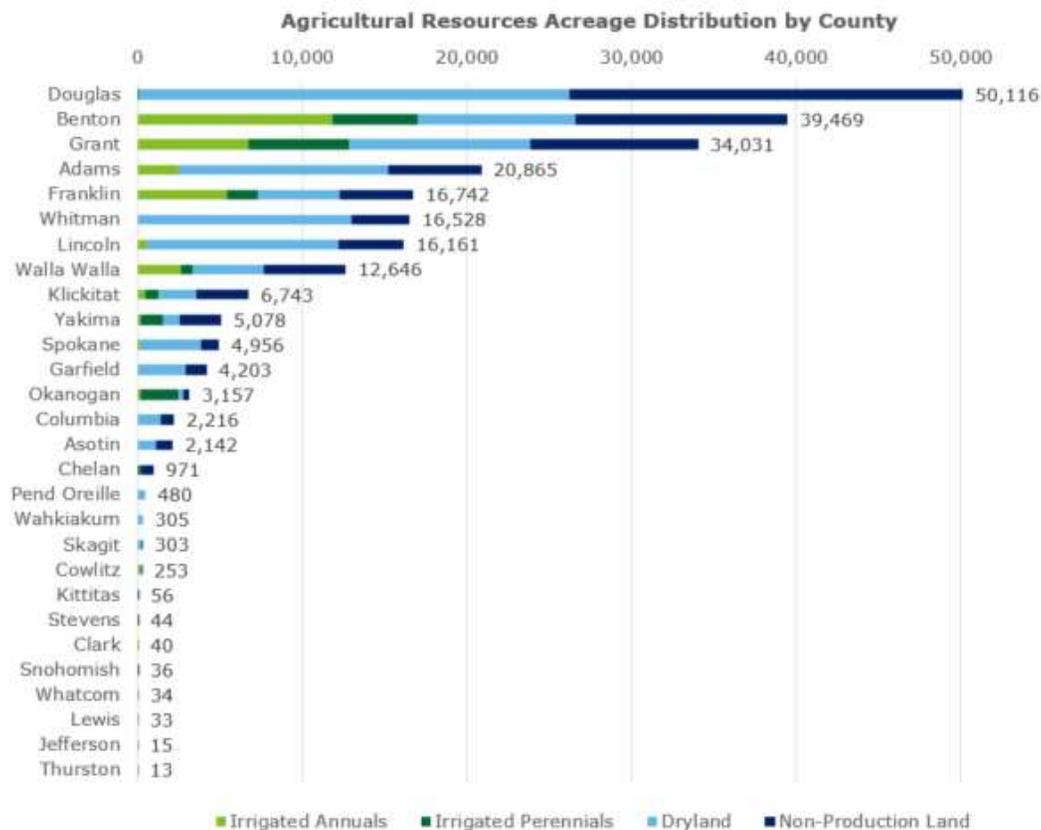


IMAGE SHOWS WHEAT BEING GROWN IN DRYLAND AREA. SOURCE: DNR.WA.GOV



IMAGE SHOWS AN APPLE ORCHARD. WASHINGTON IS THE NUMBER ONE PRODUCER OF APPLES IN THE COUNTRY. SOURCE: DNR.WA.GOV

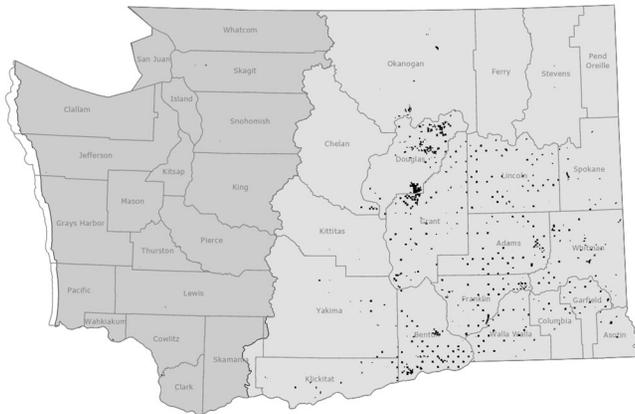
In FY 2018, there were more than 237,000 acres of state trust land leased for agricultural uses. The majority of these land leases are located throughout eastern Washington; however, a small number can be found west of the Cascades.

The top three counties with land leased for agricultural purposes were Douglas, Benton, and Grant counties, all of which are located in the southeast region of the state.

The following map highlights where all state trust lands leased for agricultural purposes are located. Leased lands in western Washington are small and less visible for all maps given the scale.

### Map of Leased Agricultural Lands

FIGURE 14



### Irrigated Annuals

State trust land leased for Irrigated Annual purposes totaled approximately 30,889 acres in FY 2018. These lands were mostly in Benton, Grant, and Franklin counties in the southeast region of the state. This region contains soil types and climate conditions favorable for growing crops.

In FY 2018, there were approximately 136 leases for Irrigated Annuals use, with 22 leases designated for Irrigated Annuals only, while the remaining 114 leases share more than one agricultural purpose.

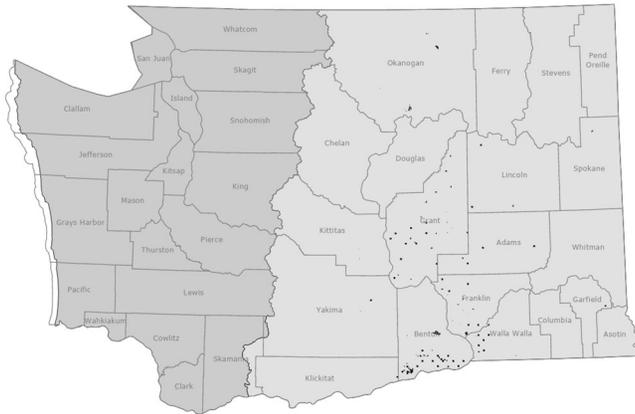
The Trust Manager has been working to decrease the number of leases that include crop share agreements in which the tenant negotiates to pay all or a portion of rent with a share of the commodity being grown. For Irrigated Annuals, the number of leases with a known crop share agreement dropped from ten leases in FY 2007 to four leases in FY 2018.<sup>5</sup> Tenants who hold the remaining leases in the Irrigated Annuals subgroup pay cash rents.

Below is a map that highlights where state trust land leased for Irrigated Annual purposes are located around the state.

<sup>5</sup> This shift could be more dramatic than available data would suggest. From FY 2007 to FY 2018, the percentage of irrigated annual leases available in the archiving database, which assists in verification of rental structure, rose from 67% to 95%.

**Map of Irrigated Annual Lands**

FIGURE 15



**Irrigated Perennials**

State trust land leased for orchard and vineyard purposes totaled approximately 18,571 acres in FY 2018. These lands were mostly in Grant and Benton counties.

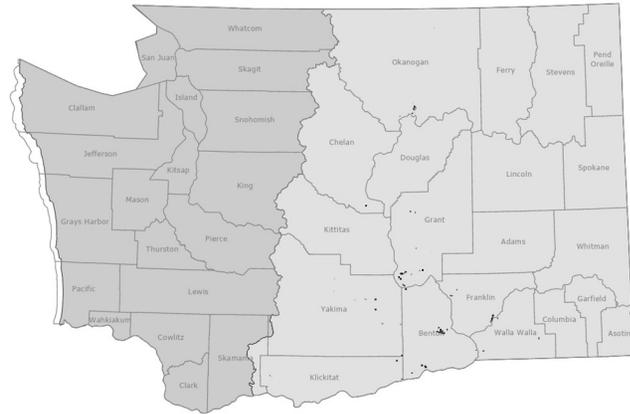
In FY 2018, there were approximately 108 leases for Irrigated Perennials use, with 26 leases designated for Irrigated Perennials only, while the remaining 82 leases share more than one agricultural purpose.

The number of leases with a known crop share agreement dropped from 60 in FY 2007 to 51 in FY 2018.<sup>6</sup> Tenants who hold the remaining leases in the Irrigated Perennials subgroup pay cash rent.

The following map highlights where state trust land leased for Irrigated Perennial purposes are located around the state.

**Map of Irrigated Perennial Lands**

FIGURE 16



**Dryland**

State trust land leased for dryland purposes totaled approximately 107,389 acres in FY 2018 and constitute the largest subgroup by acreage in the Agricultural Resources Asset Class. The lands were mostly in Douglas, Whitman, Adams, and Lincoln counties.

In FY 2018, there were approximately 441 leases for Dryland use, with 94 leases designated for Dryland only, while the remaining 347 leases share more than one agricultural or grazing purpose.

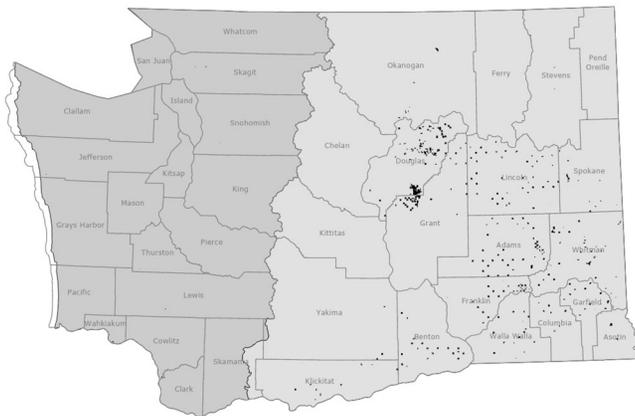
<sup>6</sup> This shift could be more dramatic than available data would suggest. From FY 2007 to FY 2018, the percentage of irrigated perennial leases available in the archiving database, which assists in verification of rental structure, rose from 62% to 85%.

The number of leases with a known crop share agreement has increased from 258 in FY 2007 to 270 in FY 2018.<sup>7</sup> The majority of leases for the Dryland subgroup (61 percent) still contain crop share agreements. Tenants who hold the remaining leases in the Dryland subgroup pay cash rents.

Below is a map that highlights where state trust land leased for Dryland purposes are located around the state.

### Map of Dryland

FIGURE 17



### Non-Production Land

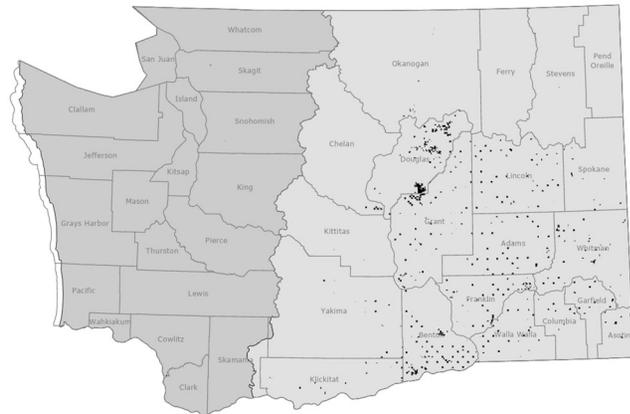
For state trust land designated as Non-Production Land, revenue comes from rent paid to prevent the land from being used for agricultural purposes. The amount received as rental revenue is minimal relative to the other subgroups.

In FY 2018, revenue was received for 80,787 acres of state trust land leased for Non-Production Land purposes. The lands were mostly in Douglas, Benton, and Grant counties.

Below is a map that highlights where Non-Production Land leases are located around the state.

### Map of Non-Production Land

FIGURE 18

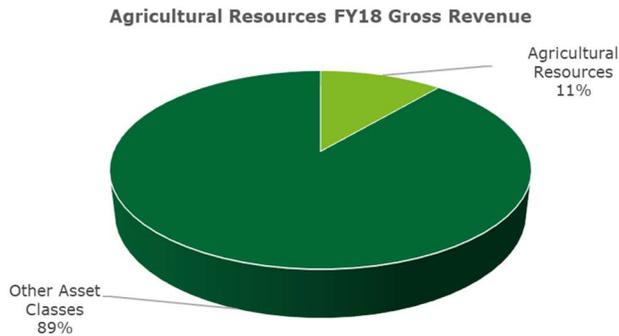


<sup>7</sup> From FY 2007 to FY 2018, the percentage of dryland leases available in the archiving database, which assists in verification of rental structure, rose from 81% to 90%.

# Operational History

The Agricultural Resources Asset Class provides the second highest gross revenue on state trust land, behind the Timber Asset Class.

FIGURE 19

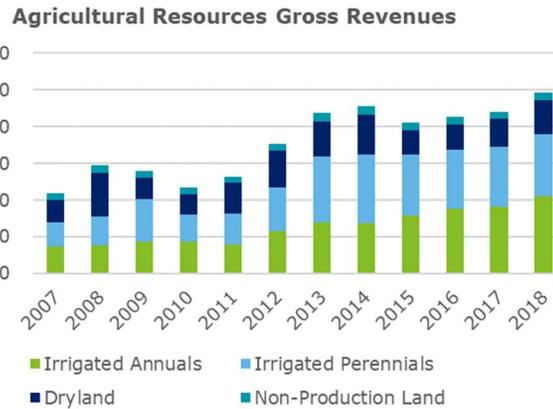


## AGRICULTURAL RESOURCES ASSET CLASS REVENUE FROM 2007 TO 2018

For the scope of this project, we analyzed the operational history of each asset class. Operating information has been provided to the analysts for the past 12 fiscal years.

The chart below displays the total gross revenue<sup>8</sup> (before the operating cost percentage deduction) received from leases for agricultural purposes from 2007 to 2018 by subgroup.

FIGURE 20



The compound annual growth rate is defined as the annual rate of growth required for the beginning balance to grow to its ending balance. Gross revenue from leases for Irrigated Annuals and Irrigated Perennials displayed significant growth over the past 12 fiscal years. Gross revenue from leases for Irrigated Annuals grew at a compound annual growth rate of more than 10 percent, and gross revenue from leases for Irrigated Perennials grew at a compound annual growth rate of 9 percent.

Gross revenue for Dryland grew at a relatively slower pace with a compound annual growth rate of just 3.8 percent. Revenue brought in from Non-Production Land remained consistent at around \$1 million dollars annually.

<sup>8</sup> Gross revenues exclude sub-sources 6, 3045, 4005, 5022, 5250, 6022, and 9088 as they are not included in reported operating cost percentage deduction totals.

**Common School and Indemnity Trust.** Since the Common School and Indemnity Trust has the largest ownership percentage for this asset class, we segregated the gross revenue received for each subgroup in each fiscal year to display the portion received by the Common School and Indemnity Trust versus the portion received by all other trusts.

FIGURE 21

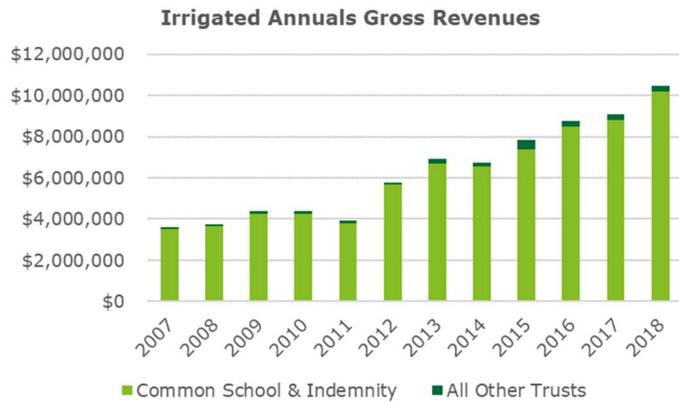


FIGURE 22

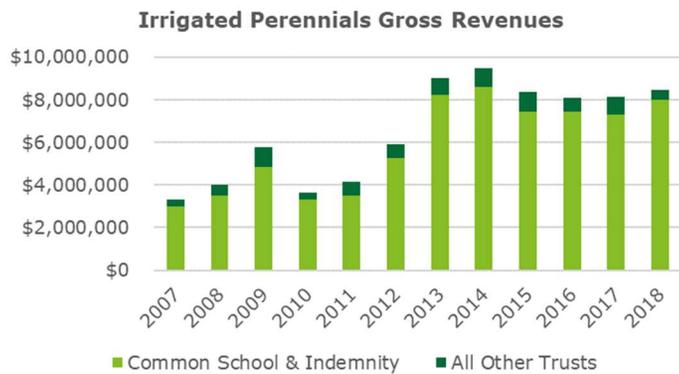


FIGURE 23

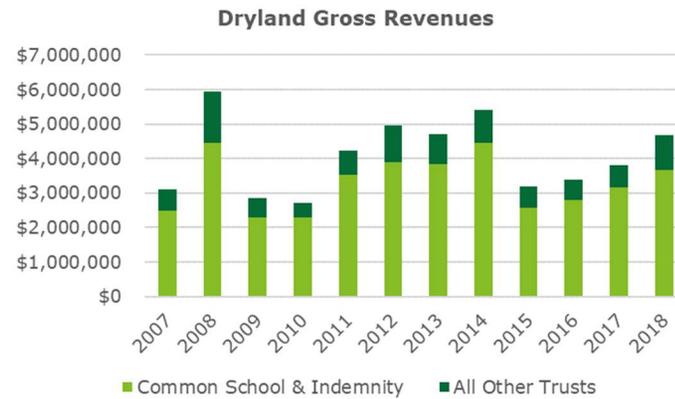
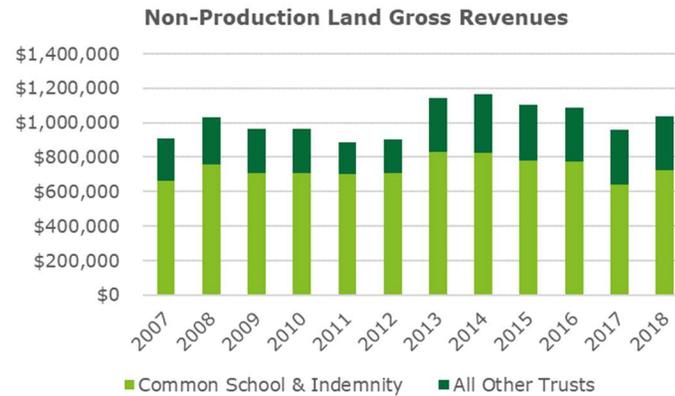


FIGURE 24



### OPERATING COST PERCENTAGE DEDUCTION

As gross proceeds are received, an operating cost percentage deduction is applied and paid to the Trust Manager. From the trust beneficiary ownership position, there are no outflows of funds to operate and maintain the asset class; the Trust Manager budgets for actual costs and capital expenditures and pays these costs directly from gross proceeds received during the year.

The operating cost percentage deduction is legislatively set and typically ranges between 25 percent and 31 percent of total gross revenue, depending on the management account associated with each trust ownership of the land leased. Historical data reported in this analysis reflects actual blended rates deducted. We have used an estimated assumption of 29 percent for the operating cost percentage deduction of this asset class which has been applied in the direct capitalization method.

**Operating Cost Percentage Deduction versus Direct Operating Expenses.** The operating cost percentage deduction is different than actual operating expenses and capital expenditures incurred to operate and manage the Agricultural Resources Asset Class assets.

When the total operating cost percentage deduction for all asset classes exceeds actual operating costs and capital expenditures for the year, the excess is held in reserve for future years when the operating cost percentage deduction does not cover actual costs. The reserve balances are reported by fund and held in separate accounts—the Resource Management Cost Account, the Forest Development Account and the Agriculture College Trust Management Account.

The Resource Management Cost Account in the state treasury is created and used solely for the purpose of defraying the costs and expenses incurred by the Trust Manager in managing and administering state trust lands,

state-owned aquatic lands, and the making and administering of leases, sales, contracts, licenses, permits, easements, and rights of way as authorized (RCW 79.64.020).

The Forest Development Account was created in the state treasury (RCW 79.64.100). Money placed in this account is first used for paying interest and principals on specific bonds issued by the Trust Manager. Appropriations made by the legislature from the Forest Development Account to the Trust Manager are for carrying out forest management activities on state forestlands and for reimbursements of expenditures from the Resource Management Cost Account in the management of state forestlands.

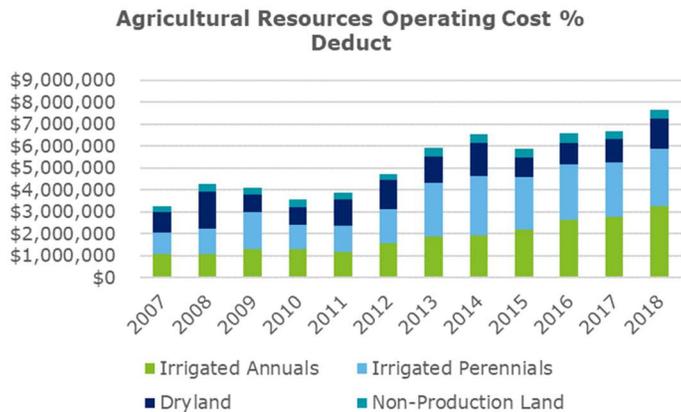
The third account is the Agriculture College Trust Management Account. This account does not retain an operating cost percentage deduction, but the Trust Manager receives a direct appropriation from the legislature to conduct management work. The Trust Beneficiary retains all gross revenue.

The reserve balances for all asset classes as of June 30, 2018 were approximately \$12.6 million (Resource Management Cost Account) and nearly \$4 million (Forest Development Account). Over the last 10 years, the Resource Management Cost Account reserves reached a high of more than \$17 million at the end of FY 2014 and a low of \$800,000 at the end of FY 2009. The Forest Development Account reserves reached a high of \$24 million at the end of FY 2011 and a low of just under \$4 million at the end of 2018.

However, note that these are snapshots as of the end of fiscal years. In reality, fund balances constantly change across a much wider range throughout each year. On a few occasions, reserves have dipped down to only a couple weeks of operating expenses.

The following chart presents the dollar amounts of the historical operating cost percentage deduction from 2007 to 2018 for the Agricultural Resources Asset Class. The operating cost percentage deduction is proportionate to the gross revenue produced by the asset class each year—it rises and falls along with trust earnings and may not reflect increases or decreases in the Trust Manager’s actual costs. These dollar amounts include both portions of revenue distributed to the Trust Manager from agricultural contracts and incidental revenue from trespassing fines, non-federal conservation programs, Initial Incident Report (IIR) restitutions, power charges, and other assessments. Costs are segregated by subgroup in the following chart and reflect actual amounts deducted.

FIGURE 25



### ACTUAL COSTS

The following is a discussion of the actual costs incurred by trust beneficiaries and paid by the Trust Manager from funds received as a result of the operating cost percentage deduction.

The following chart highlights the historical actual costs incurred by the Trust Manager, which are split between direct and indirect expenses. Another similar chart is also presented that excludes indirect expenses and displays only direct expenses divided by subgroup.

The Trust Manager’s accounting system does not record costs at the subgroup level. For purposes of this report and based on discussions with the Trust Manager, we have estimated that 45 percent of costs are attributable to Dryland, 35 percent of costs are attributable to Irrigated Annuals, and the remaining 20 percent of costs are attributable to Irrigated Perennials. Costs directly tied to Non-Production Land, if any, are captured in the 45 percent of costs attributed to Dryland in the Trust Manager’s accounting system.

FIGURE 26

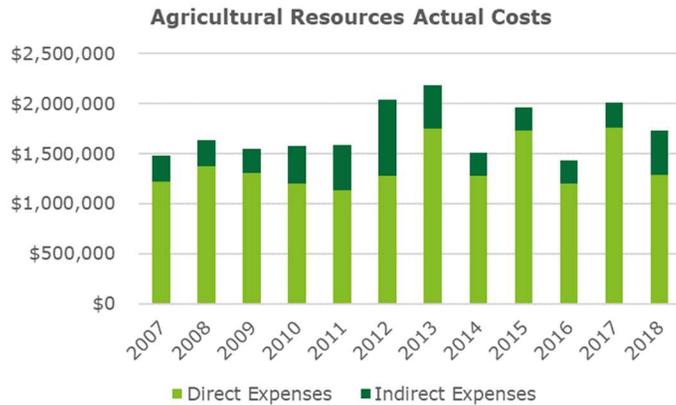
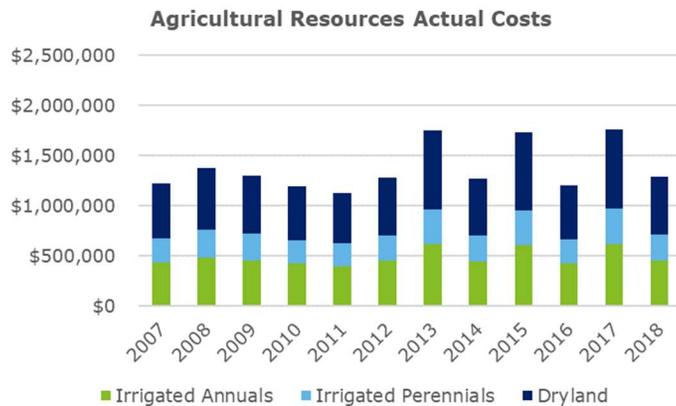


FIGURE 27



**Direct Expenses.** Direct expenses include all costs directly related to managing lands in the Agricultural Resources Asset Class as well as allocations of general costs.

Currently, direct expenses include all costs directly related to managing lands, including:

- Resource and leasing management
- Project, sales, and planning management

The allocations of general costs are related to:

- Uplands
  - Examples include environmental analysis, state lands training, and law enforcement
- Engineering and general services
  - Examples include resource mapping, surveying, and record keeping
- Infrastructure for state trust lands
  - Examples include agricultural irrigation and pipeline development costs

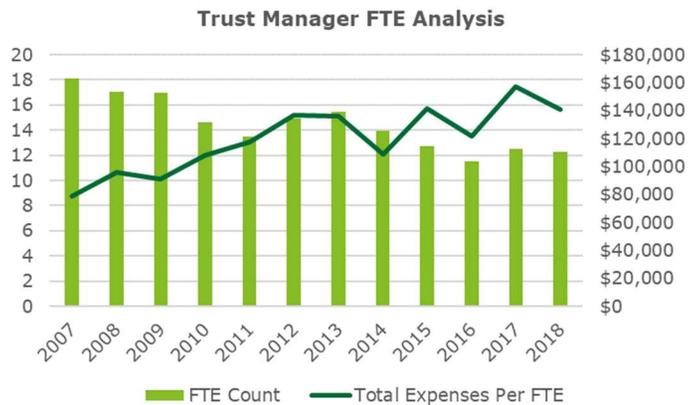
**Indirect Expenses.** Indirect expenses include all overhead costs allocated to the Trust Manager for:

- Administrative and agency support
- Adjustments
- Legal services
- Strategic investments
- Other administrative payments

In the Trust Manager’s accounting system, expenses for grazing and agricultural resources share the same business center where costs are reported. To conduct a full-time employee analysis, costs for agricultural resources were segregated from costs for grazing resources based on allocated full-time employees. Additional splits allocated to the business center (i.e., general costs for uplands, engineering, general services, and state lands infrastructure) have also been segregated between agricultural resources and grazing resources based on allocated full-time employees.

As seen in the following full-time employee analysis, the Trust Manager typically retained approximately 12 full-time employees for the Agricultural Resources Asset Class over the last four fiscal years. The total actual costs paid by the Trust Manager have ranged from \$110,000 to \$160,000 per full-time employee over that same period. These costs include all direct and indirect expenses, including salaries, as well as benefits and overhead.

FIGURE 28



**NET CASH FLOW FROM 2014 TO 2018**

Trust beneficiaries pay a portion of the gross revenue (i.e., operating cost percentage deduction) to the Trust Manager for operating expenses and capital expenditures. These costs include direct and indirect expenses. The cash flows net of the operating cost percentage deduction are then distributed to the appropriate funds by ownership.

The following table summarizes the net cash flows distributed to trust beneficiaries over the past five fiscal years for this asset class. These operating cost percentage deduction amounts include both portions of revenue distributed to the Trust Manager from agricultural contracts and incidental revenue from trespassing fines, non-federal conservation programs, IIR restitutions, power charges, and other assessments. These cash flows indicate the Agricultural Resources Asset Class provides trust beneficiaries with \$14 million to \$17 million in net cash flows per year.

FIGURE 29

	2014	2015	2016	2017	2018
<b>Total Annual Gross Revenue</b>	<b>\$22,797,682</b>	<b>\$20,520,150</b>	<b>\$21,308,782</b>	<b>\$21,983,816</b>	<b>\$24,645,595</b>
Operating Cost % Deduct	(\$6,558,175)	(\$5,858,276)	(\$6,585,066)	(\$6,691,403)	(\$7,660,420)
% of Revenue	28.77%	28.55%	30.90%	30.44%	31.08%
<b>Revenues Distributed to Trusts</b>	<b>\$16,239,507</b>	<b>\$14,661,874</b>	<b>\$14,723,716</b>	<b>\$15,292,413</b>	<b>\$16,985,175</b>
<b>% of Revenue</b>	<b>71.23%</b>	<b>71.45%</b>	<b>69.10%</b>	<b>69.56%</b>	<b>68.92%</b>

# Property Taxes and Zoning

The State of Washington is exempt from paying direct real property taxes for agricultural lands.

## PROPERTY TAXES

Property taxes are a local government's main source of revenue. Most localities tax private homes, land, and business property based on the property's value.

Lands owned by the state are exempt from property tax obligations under the state constitution. However, because private lessees of state land receive the benefit of governmental services, the legislature imposes a leasehold excise tax on these private lessees under RCW 82.29A.

Leasehold excise tax is paid by the lessee to the Trust Manager when rent is paid, and the Trust Manager remits the payment to the Department of Revenue. Land that is not leased does not pay property taxes or leasehold excise tax. Generally, the leasehold excise tax on leased land is most often less than what property taxes would be for the same land.

## ZONING

We assume that all leased sites in the Agricultural Resources Asset Class adhere to the proper zoning regulations outlined in local general plans. If not fully compliant, we assume that each property is legally non-conforming to the proper zoning regulations and development standards.



IMAGE SHOWS A WHEAT FIELD LOCATED ON STATE TRUST LANDS. SOURCE: WA DNR

# Market Analysis

Washington is the second most diverse state for agricultural production.

## MARKET OVERVIEW

### Overview of Agriculture in Washington State

Washington state is the second most agricultural diverse state in the nation, after California. Washington grows more than 300 different types of crops across more than 39,000 farms. Grant and Yakima counties contribute the most to the state's agricultural economy with more than \$3 billion in annual economic output combined.<sup>9</sup>

The top 10 commodities produced in the state include apples, milk, wheat, potatoes, cattle, hay, hops, cherries, grapes, and eggs.

Washington is the number one producer of apples in the country with production values exceeding \$2 billion annually. The state's apple industry comprises nearly 70 percent of US production.<sup>10</sup>

The state is also the number one US producer of hops, spearmint oil, wrinkled seed peas, pears, and blueberries.

Washington is the number two US producer of potatoes, grapes (all varieties), nectarines, apricots, asparagus, onions, and raspberries.<sup>11</sup>

The state's agricultural production would be significantly affected if the ability to export was removed. Food and agricultural products worth billions of dollars are grown and raised in Washington and exported to people around the world.<sup>12</sup>

Washington's agricultural food exports are mainly shipped to Canada and countries in Asia, primarily Japan, China/Hong Kong, the Philippines, and South Korea.

Cash receipts for crops in the state of Washington have increased at a compound annual growth rate of 0.9% between 2011 and 2018.<sup>13</sup> We anticipate agricultural revenue growth in the state to continue at a similar pace.

### Industry Sector Performance (National Overview)

The rest of the market analysis section is based on information and data sourced from IBISWorld, a trusted industry research firm. The industry sector discussed is the Agricultural, Forestry, Fishing and Hunting Industry Sector. This sector's largest revenue contributor is agricultural crops. The industry sector is a national overview in the United States that includes the state of Washington.

IBISWorld does not have specific sector research for the agricultural industry alone; instead it groups agriculture, forestry, fishing, and hunting into the same sector that includes:

- Farms that grow crops or raise livestock

<sup>9</sup> <https://www.washingtonpolicy.org/publications/detail/agriculture-the-cornerstone-of-washingtons-economy>

<sup>10</sup> <https://agr.wa.gov/washington-agriculture>

<sup>11</sup> <https://agr.wa.gov/washington-agriculture>

<sup>12</sup> <https://www.washingtonpolicy.org/publications/detail/agriculture-the-cornerstone-of-washingtons-economy>

<sup>13</sup> Data sourced from USDA ERS Farm Income and Wealth Statistics

- Companies that specialize in forestry and agricultural support services
- Companies that provide land for hunting and fishing

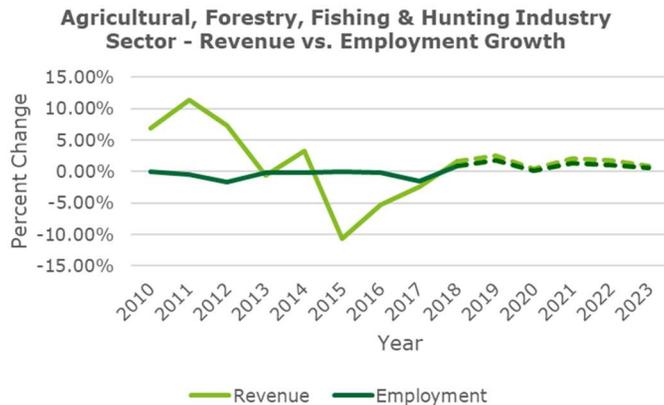
This sector is one of the oldest in the nation. While it has a longstanding place in the economy, it is one of the more historically volatile sectors. Agricultural production can be affected by many unpredictable factors such as disease, pests, and droughts.

Per IBISWorld, this sector reported revenue of \$418 billion across 2 million businesses nationwide in 2018. Approximately 49 percent of the sector products and services segmentation is comprised of crops.

The following chart displays historical and projected revenue and employment growth in the overall industry sector from 2010 to 2023.

Between 2013 and 2018, revenue growth in the sector decreased by an average annual growth rate of -2.8 percent nationwide. This is mainly due to severe droughts in 2012 that affected many states, primarily in the Midwest and Southwest. Overproduction of crops in the years following the drought led to significant price drops for nearly half of the products in this industry sector. However, growing health concerns and demand for organic and natural agricultural products are expected to boost revenue growth. The projected annual growth rate for the nationwide agriculture, forestry, fishing, and hunting sector between 2018 and 2023 is 1.5 percent.<sup>14</sup>

FIGURE 30



<sup>14</sup> Data sourced from "Agriculture, Forestry, Fishing, and Hunting Sector Report," IBISWorld, June 2018.

# Methodology

The income approach was the valuation methodology selected for this study.

## **Methodology**

The income approach was the basis for the valuation of this asset class. The Trust Manager's data files were the principal source of market and value information (i.e., annual gross lease revenue, direct and indirect expenses, and other financial information) and include lease activity obtained in the ordinary course of the management of assets.

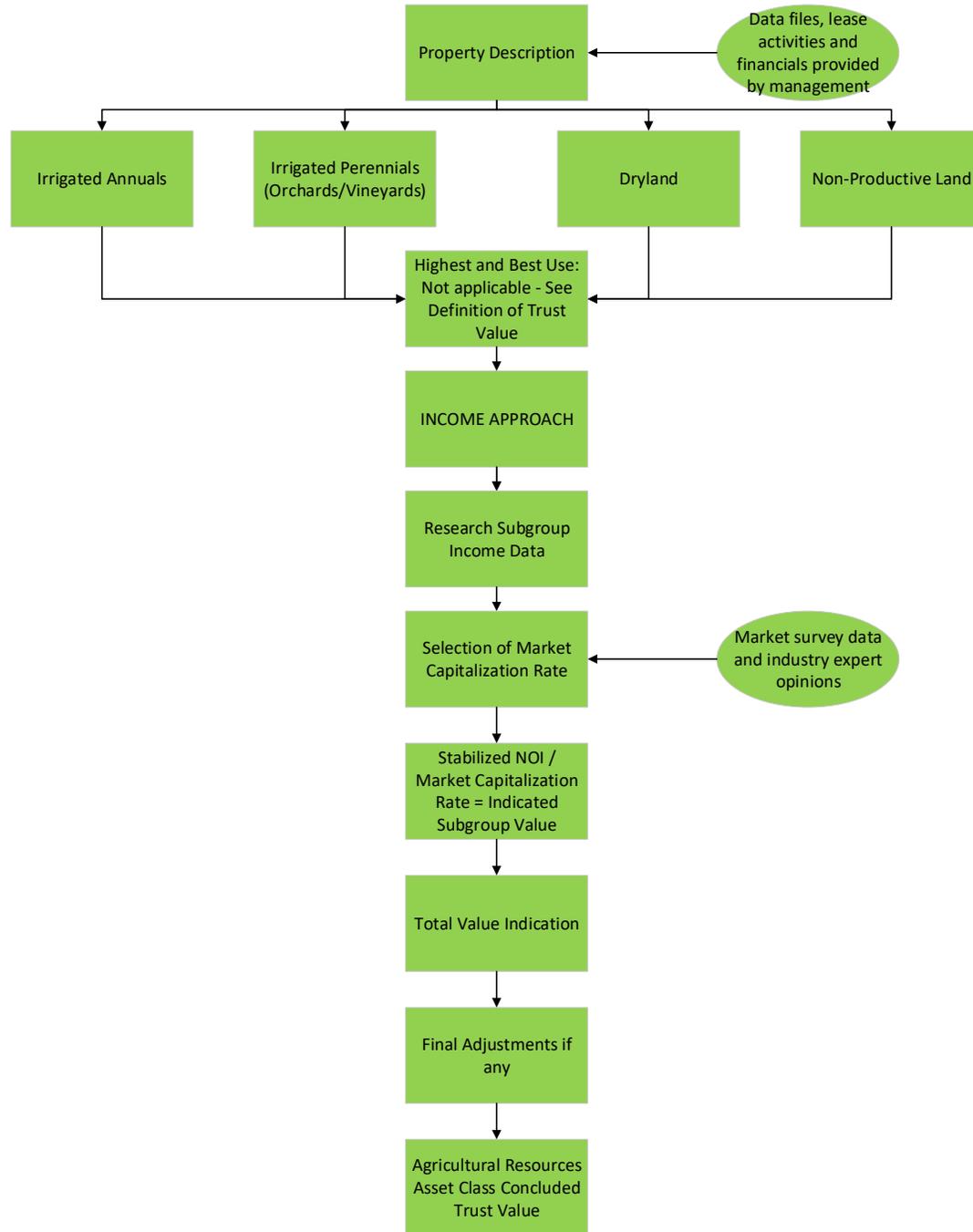
Due to the nature of the cash flow stream this asset class produces through its negotiated leases, the income approach was the methodology utilized. Adequate amounts of market data existed to use the income approach.

The flowchart that follows displays the steps taken in the valuation analysis for the Agricultural Resources Asset Class.



IMAGE SHOWS A GRAPE VINEYARD LOCATED ON STATE TRUST LANDS. SOURCE: WA DNR

FIGURE 31  
**Agricultural Resources Asset Class Valuation  
Flowchart**



## Trust Value Analysis

We evaluated the Trust Value of the Agricultural Resources Asset Class by using the methods described below:

### Income Approach

The income approach involves a set of procedures through which an appraiser derives a value indication for an income-producing property by converting its anticipated benefits into property value using one of the following methods:

- *Discounted Cash Flow Method:* The annual cash flows for the holding period and the reversion are discounted at a specified yield rate. The discounted cash flow method was not used in this analysis.
- *Direct Capitalization Method:* One year's income expectancy is capitalized at a capitalization rate that reflects a specified income pattern, return on investment, and change in the value of the investment. The direct capitalization method was used in this analysis.

An overall capitalization rate is defined as a ratio of one year's net operating income provided by an asset to the value of the asset and is used to convert income into value when using the income capitalization approach.<sup>15</sup> Further discussion regarding this rate can be found in the earlier chapter that focuses on rates of return.

Given the leased nature and ownership limitations of the Agricultural Resources Asset Class, the direct capitalization method was considered to be the most relevant; thus, it was utilized in this analysis.

## Extraordinary Assumptions

We assume that all land containing leases for agricultural uses adhere to the proper zoning regulations outlined in local general plans. If not fully compliant, we assume that each property is non-conforming to the proper regulations and development standards.

As previously discussed in the chapter regarding restrictions and burdens, the Trust Manager's ability to sell, exchange, or transfer state trust lands is limited by statute. For the purpose of this analysis, we assume that the ownership interest is non-transferable resulting in the land not being able to be sold.

We relied upon information provided by the Trust Manager for all specific data regarding data files, leasing activities and financials, and size and ownership information. We assume that all information provided by the Trust Manager is accurate and sufficient for the purpose of this valuation.

## Hypothetical Conditions

None noted.

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<sup>15</sup> Definition sourced from the *Sixth Edition of the Dictionary of Real Estate Appraisal*.

# Income Approach

The direct capitalization method was used to estimate the Trust Value of the Agricultural Resources Asset Class.

For the purposes of the valuation analysis in this report, the Agricultural Resources Asset Class has been divided into four subgroups:

- Irrigated Annuals
- Irrigated Perennials (i.e. orchards and vineyards)
- Dryland
- Non-Production Land

## ESTIMATED NET CASH FLOW

As has been highlighted in the “Operational History” section of this chapter, total gross revenue received from rent payments for the Agricultural Resources Asset Class typically totals between \$20 million to \$25 million per year. We estimated stabilized streams of revenue for each subgroup in the asset class based on analyzing historical averages and trends while acknowledging volatility and potential growth where applicable.

Combined, the estimated stabilized gross revenue for the Agricultural Resources Asset Class totals \$23.5 million.

We also estimated an expected stabilized operating cost percentage deduction of 29 percent based on historical deductions averaging near this blended rate. The following table summarizes the estimated income stream for each subgroup.

FIGURE 32

Agricultural Resources Asset Class - Stabilized Income Summary					
	Irrigated Annuals	Irrigated Perennials	Dryland	Non-Production Land	Total
Stabilized Gross Revenues	\$10,000,000	\$8,500,000	\$4,000,000	\$1,000,000	<b>\$23,500,000</b>
Operating Cost % Deduction % of Revenues	(\$2,900,000) 29%	(\$2,465,000) 29%	(\$1,160,000) 29%	(\$290,000) 29%	<b>(\$6,815,000) 29%</b>
Trust Net Operating Income	\$7,100,000	\$6,035,000	\$2,840,000	\$710,000	<b>\$16,685,000</b>

## CAPITALIZATION RATE SELECTION

An overall capitalization rate of 7 percent has been selected to apply to the net cash flows for each of the subgroups in the Agricultural Resources Asset Class. For further discussion regarding the determination of this capitalization rate, please refer to the earlier chapter that discusses rates of return.

## DIRECT CAPITALIZATIONS

The overall capitalization rate was applied to the relevant stabilized revenue stream estimates for each subgroup to derive a preliminary Trust Value indication for this asset class. The direct capitalization calculations are presented for each subgroup.

Note that the leased acreage reported for each subgroup represents the total acreage in FY 2018, as provided by Trust Management.

Note that the total leases listed for each subgroup represent each lease contract in which the subgroup's agricultural use is reported. The totals listed include lease contracts for multiple agricultural uses as it is common for one contract to house multiple sources of revenue.

**Irrigated Annuals.** The total value indication for state trust land leased for Irrigated Annual purposes was \$101,400,000 (rounded) for FY 2018, which equates to an average of approximately \$3,300 per leased acre. The capitalization calculations for Irrigated Annuals are shown in the following table:

FIGURE 33

<b>Direct Capitalization - Irrigated Annuals</b>		
Acres Leased [1]		30,889
Total Leases [2]		136
Stabilized Gross Revenues		\$10,000,000
Operating Cost % Deduction	29.00%	(\$2,900,000)
Revenue Distributed to Trusts		\$7,100,000
Capitalization Rate		7.00%
Indicated Irrigated Annuals Value		\$101,428,571
<b>Irrigated Annuals Value (Rounded)</b>		<b>\$101,400,000</b>
<b>Value per Acre</b>		<b>\$3,284</b>
<b>Value per Lease</b>		<b>\$745,588</b>

[1] Represents the total acreage in FY18 as provided by Trust Management.

[2] Represents all FY18 contracts with the subgroup's use type. This total includes leases with multiple agricultural types reported.

**Irrigated Perennials.** The total value indication for state trust land with a leased use of Irrigated Perennial purposes was \$86,200,000 (rounded) for FY 2018, which equates to an average of approximately \$4,600 per leased acre. The capitalization calculations for Irrigated Perennials are shown in the following table:

FIGURE 34

<b>Direct Capitalization - Irrigated Perennials</b>		
Acres Leased [1]		18,571
Total Leases [2]		108
Stabilized Gross Revenues		\$8,500,000
Operating Cost % Deduction	29.00%	(\$2,465,000)
Revenue Distributed to Trusts		\$6,035,000
Capitalization Rate		7.00%
Indicated Irrigated Perennials Value		\$86,214,286
<b>Irrigated Perennials Value (Rounded)</b>		<b>\$86,200,000</b>
<b>Value per Acre</b>		<b>\$4,642</b>
<b>Value per Lease</b>		<b>\$798,148</b>

[1] Represents the total acreage in FY18 as provided by Trust Management.

[2] Represents all FY18 contracts with the subgroup's use type. This total includes leases with multiple agricultural types reported.

**Dryland.** The total value indication for state trust land leased for Dryland purposes was \$40,600,000 (rounded) for FY 2018, which equates to an average of approximately \$380 per leased acre. The capitalization calculations for Dryland are shown in the following table:

FIGURE 35

<b>Direct Capitalization - Dryland</b>		
Acres Leased [1]		107,389
Total Leases [2]		441
Stabilized Gross Revenues		\$4,000,000
Operating Cost % Deduction	29.00%	(\$1,160,000)
Revenue Distributed to Trusts		\$2,840,000
Capitalization Rate		7.00%
Indicated Drylands Value		\$40,571,429
<b>Drylands Value (Rounded)</b>		<b>\$40,600,000</b>
<b>Value per Acre</b>		<b>\$378</b>
<b>Value per Lease</b>		<b>\$92,063</b>

[1] Represents the total acreage in FY18 as provided by Trust Management.

[2] Represents all FY18 contracts with the subgroup's use type. This total includes leases with multiple agricultural types reported.

**Non-Production Land.** The total value indication for state trust lands used as Non-Production Land was \$10,100,000 (rounded) for FY 2018, which equates to an average of approximately \$130 per leased acre. The capitalization calculations for Non-Production Land are shown in the following table:

FIGURE 36

<b>Direct Capitalization - Non-Production Land</b>		
Acres Leased [1]		80,787
Total Leases [2]		655
Stabilized Gross Revenues		\$1,000,000
Operating Cost % Deduction	29.00%	(\$290,000)
Revenue Distributed to Trusts		\$710,000
Capitalization Rate		7.00%
Indicated Non-Production Lands Value		\$10,142,857
<b>Non-Production Lands Value (Rounded)</b>		<b>\$10,100,000</b>
<b>Value per Acre</b>		<b>\$126</b>
<b>Value per Lease</b>		<b>\$15,420</b>

[1] Represents the total acreage in FY18 as provided by Trust Management.

[2] Represents all FY18 contracts with the subgroup's use type. This total includes leases with multiple agricultural types reported.

**Income Approach Summary.** The following table combines the indicated values from the direct capitalization calculations for each subgroup into a total indicated value for the asset class.

Note that the total leases reported include each unique lease that contains an agricultural use. While many lease contracts share multiple revenue streams from different subgroup types, the lease contracts are only counted once. Eliminating the double counting of lease contracts with shared revenue types resulted in a total of 800 leases for agricultural purposes in FY 2018.

FIGURE 37

<b>Agricultural Resources Income Approach Summary</b>	
Acres Leased [1]	237,635
Total Leases [2]	800
Irrigated Annuals	\$101,400,000
Irrigated Perennials	\$86,200,000
Dryland	\$40,600,000
Non-Production Land	\$10,100,000
<b>Total Value Indication (Rounded)</b>	<b>\$238,300,000</b>
<b>Value per Acre</b>	<b>\$1,003</b>
<b>Value per Lease</b>	<b>\$297,875</b>

[1] Represents the total acreage in FY18 as provided by Trust Management.

[2] Represents all unique leases with at least one agricultural use type. This total does not double count leases with multiple agricultural uses across different subgroups.

# Value Conclusion

The concluded Trust Value of the Agricultural Resources Asset Class is \$238,300,000.

## AGRICULTURAL RESOURCES ASSET CLASS VALUE CONCLUSION

Using the income approach, the indicated values for each subgroup—Irrigated Annuals, Irrigated Perennials, Dryland, and Non-Production Land—were combined to represent the total value indication for the Agricultural Resources Asset Class.

This results in a concluded Trust Value of \$238,300,000 for the asset class.

FIGURE 38

Agricultural Resources Asset Class Value Conclusion	
Acres Leased [1]	237,635
Total Leases [2]	800
Irrigated Annuals	\$101,400,000
Irrigated Perennials	\$86,200,000
Dryland	\$40,600,000
Non-Production Land	\$10,100,000
<b>Total Value Indication (Rounded)</b>	<b>\$238,300,000</b>
<b>Concluded Trust Value (Rounded)</b>	<b>\$238,300,000</b>
<b>Value per Acre</b>	<b>\$1,003</b>
<b>Value per Lease</b>	<b>\$297,875</b>

[1] Represents the total acreage in FY18 as provided by Trust Management.  
 [2] Represents all unique leases with at least one agricultural use type. This total does not double count leases with multiple agricultural uses across different subgroups.

## INDIVIDUAL TRUST VALUES SUMMARY

The concluded Trust Value for state trust land in the Agricultural Resources Asset Class was calculated for each trust. Specifically, the concluded Trust Value for leased areas was allocated based on each individual trust’s percentage of gross revenue for the asset class in FY 2018. The following table reflects the concluded value for each trust by subgroup.

FIGURE 39

Agricultural Resources Asset Class Individual Trust Values						
Trust	Irrigated Annuals	Irrigated Perennials	Dryland	Non-Production Land	Trust Value	%
Common School and Indemnity	\$98,952,204	\$81,127,130	\$32,058,166	\$6,911,430	\$219,048,930	91.92%
Scientific School	\$232,206	\$3,560,922	\$2,469,292	\$427,129	\$6,689,549	2.81%
CEP & RI	\$2,028	\$36,204	\$3,260,992	\$768,206	\$4,067,430	1.71%
Agricultural School	\$1,647,750	\$1,134,392	\$866,810	\$298,354	\$3,947,306	1.66%
University Transferred	\$0	\$0	\$705,222	\$1,187,558	\$1,892,780	0.79%
Normal School	\$565,812	\$44,824	\$533,078	\$54,742	\$1,198,456	0.50%
Capitol Grant	\$0	\$0	\$404,376	\$252,298	\$656,674	0.28%
State Forest Transfer	\$0	\$296,528	\$0	\$0	\$296,528	0.12%
Other [1]	\$0	\$0	\$213,150	\$0	\$213,150	0.09%
University Original	\$0	\$0	\$812	\$200,283	\$201,095	0.08%
Escheat	\$0	\$0	\$88,102	\$0	\$88,102	0.04%
<b>Total</b>	<b>\$101,400,000</b>	<b>\$86,200,000</b>	<b>\$40,600,000</b>	<b>\$10,100,000</b>	<b>\$238,300,000</b>	<b>100%</b>

[1] Other includes the collective miniscule amounts of Department of Social and Health Services and other trusts not in the scope of this project.