

Changes to Summer Stream Flow 2011-2040

Forecasted Change in Summer Flow

Mean Summer Pct Chng 2011-2040

-61.7% - -44.9%

-44.8% - -34.4%

-34.3% - -23.4% -23.3% - -13.7%

-13.6% - -0.8%

✓ Highways

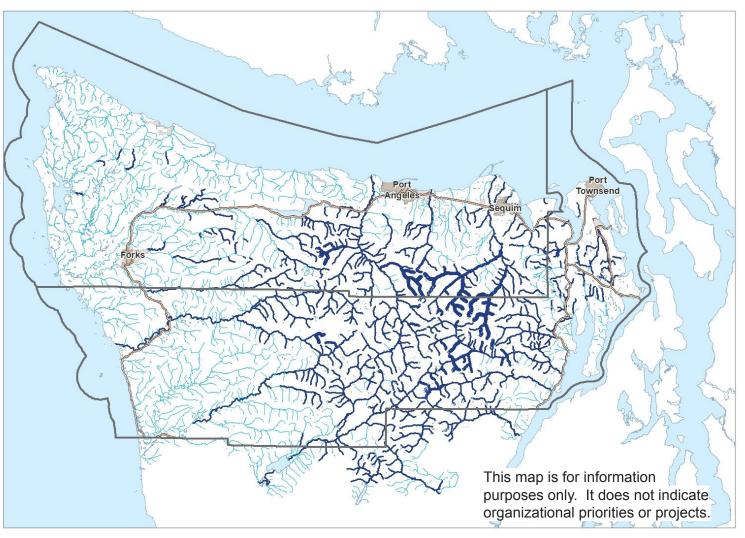
W Highway:

Lakes
Incorporated City

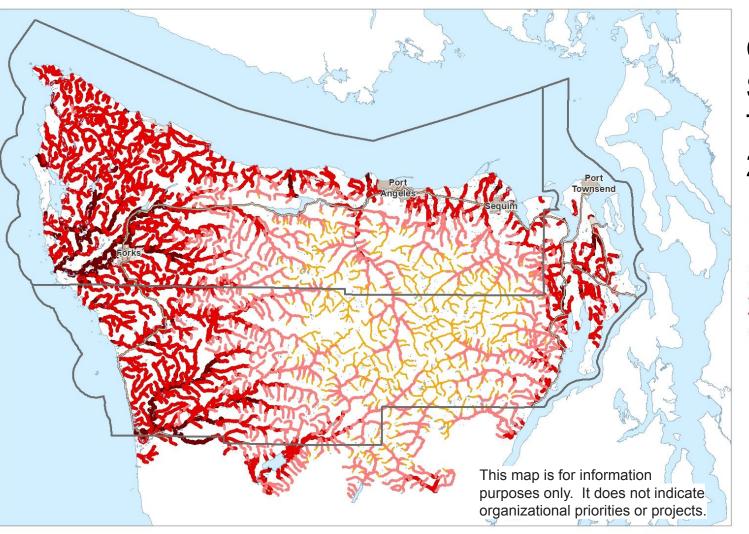
UGA

County Boundaries

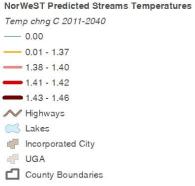
VIC (Variable Infiltration Capacity) model produced by USFS Rocky Mountain Research station



Changes to Winter Stream Flow 1995-2040



Changes to Stream Temperature 2011-2040



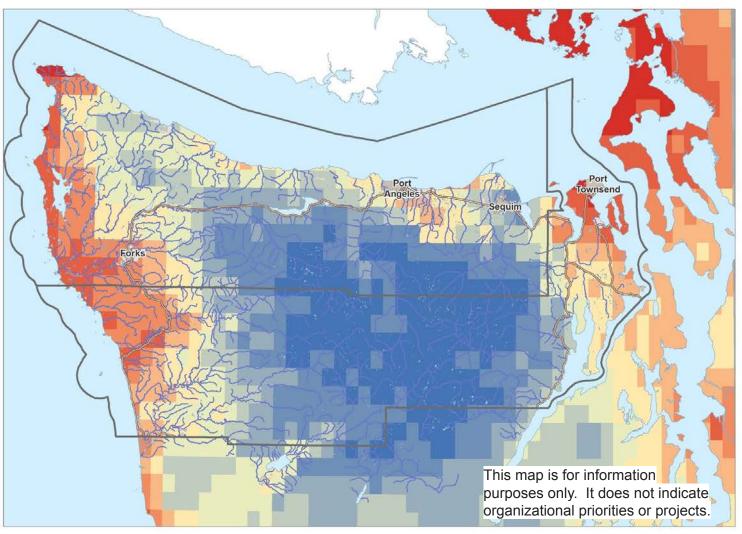
NorWeST model produced by USFS Rocky Mountain Research station



Sea Level Rise Projection

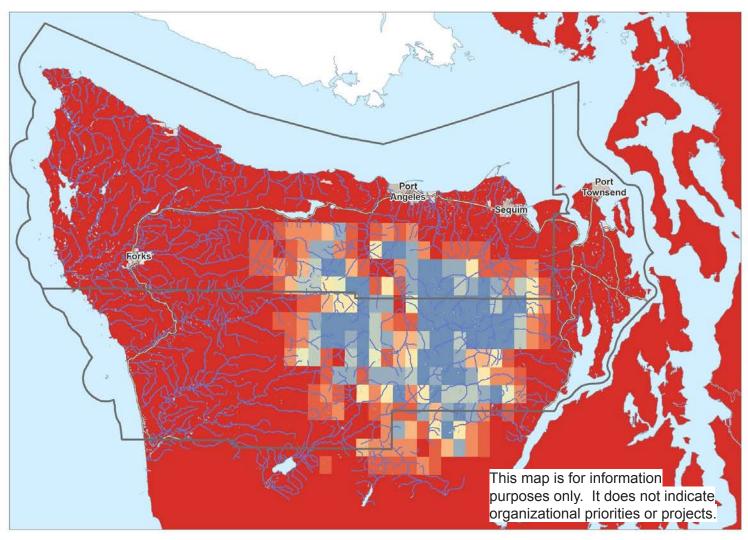
According to the Climate Impacts Group, by 2100 under the High (RCP 8.5) greenhouse gas scenario, there is a 2% chance the amount of relative sea level rise will meet or exceed 4' by 2100 at this location; storm surge and king tides may add another 2' of inundation under this scenario

Inundation data from NOAA 'bathtub' model



Date of Freeze, 1975-2005

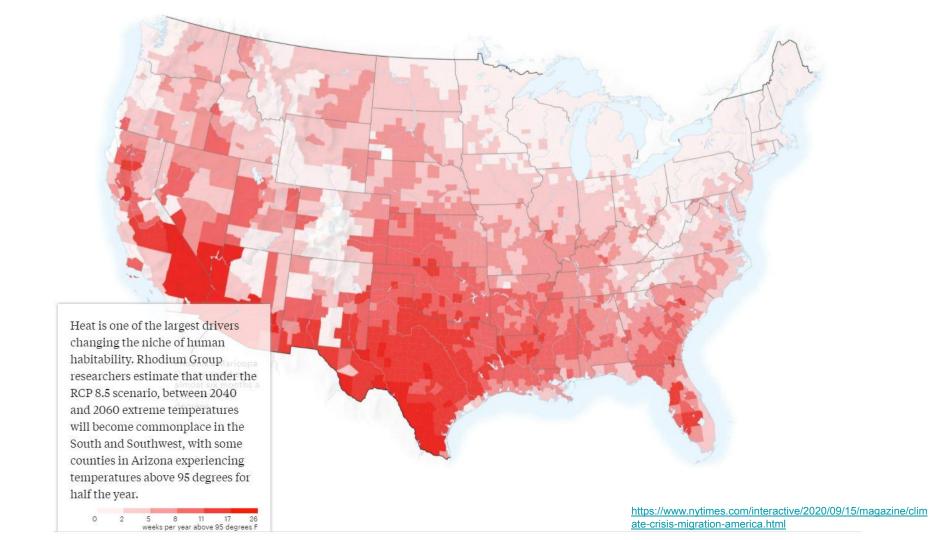


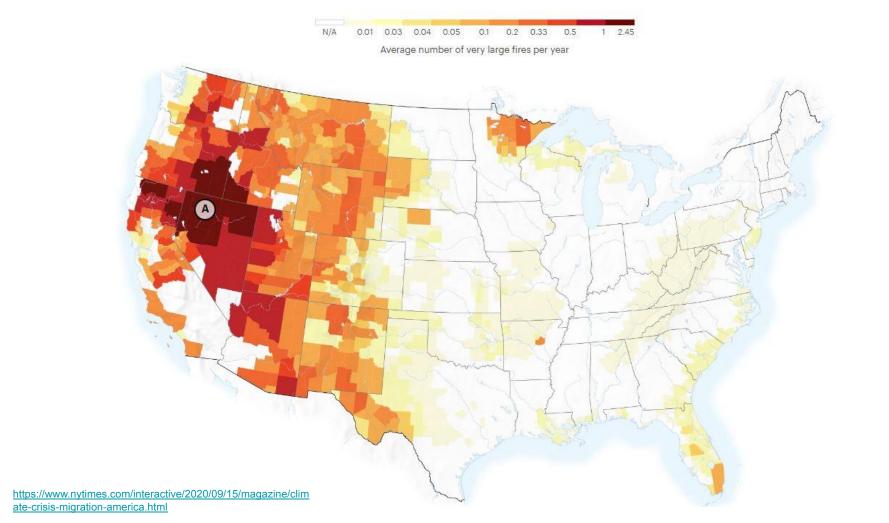


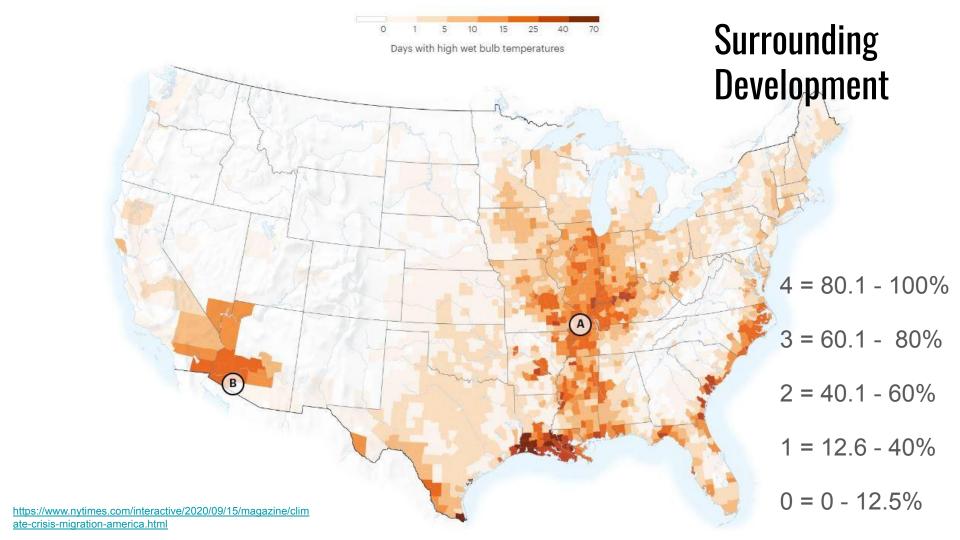
Date of Freeze, 2071-2090

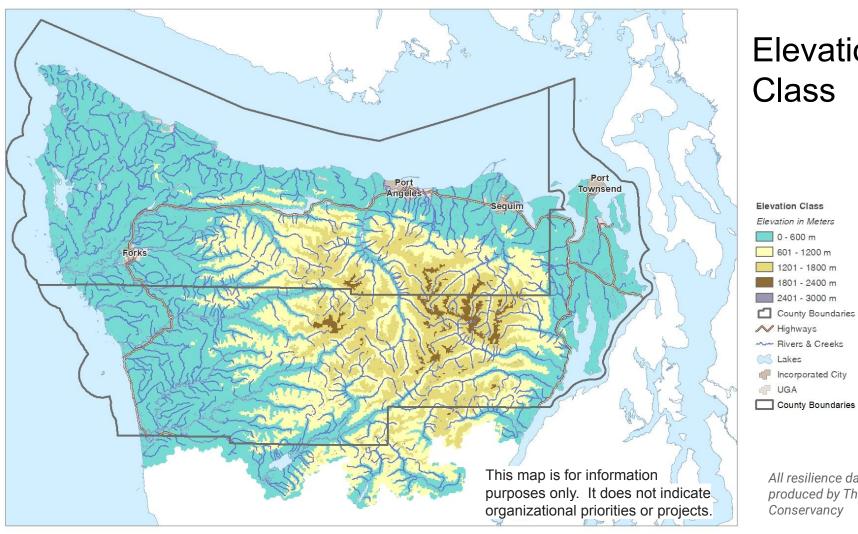
RCP 8.5 (High Emissions Scenario)







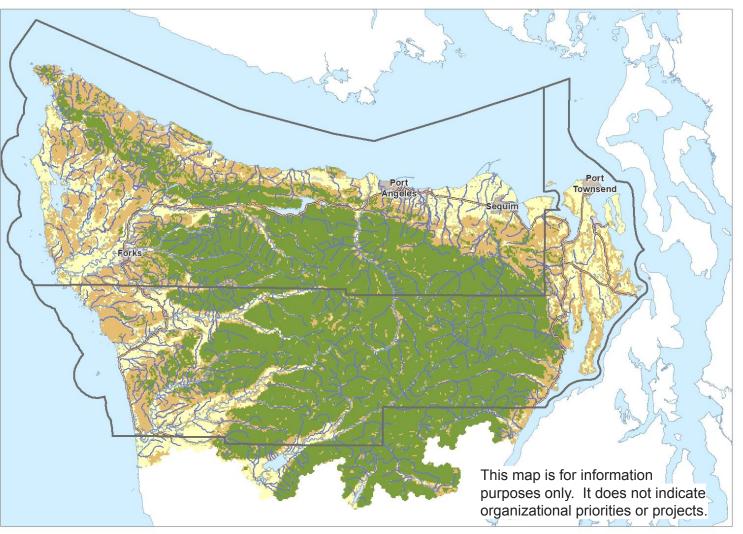




Elevation

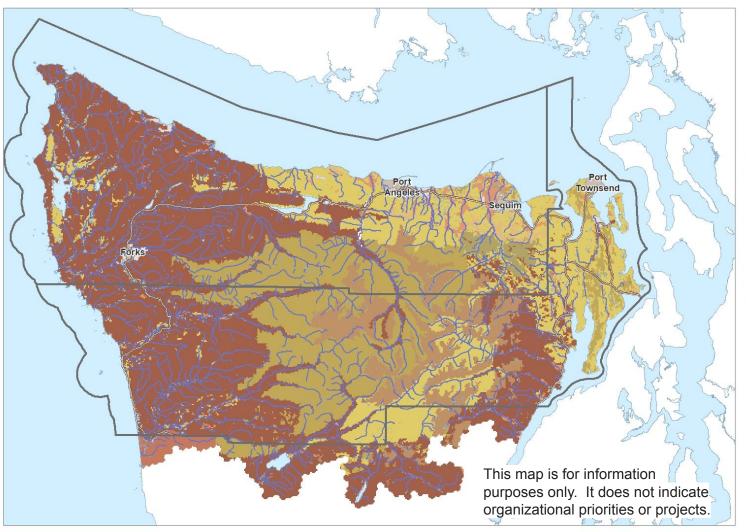


All resilience data produced by The Nature



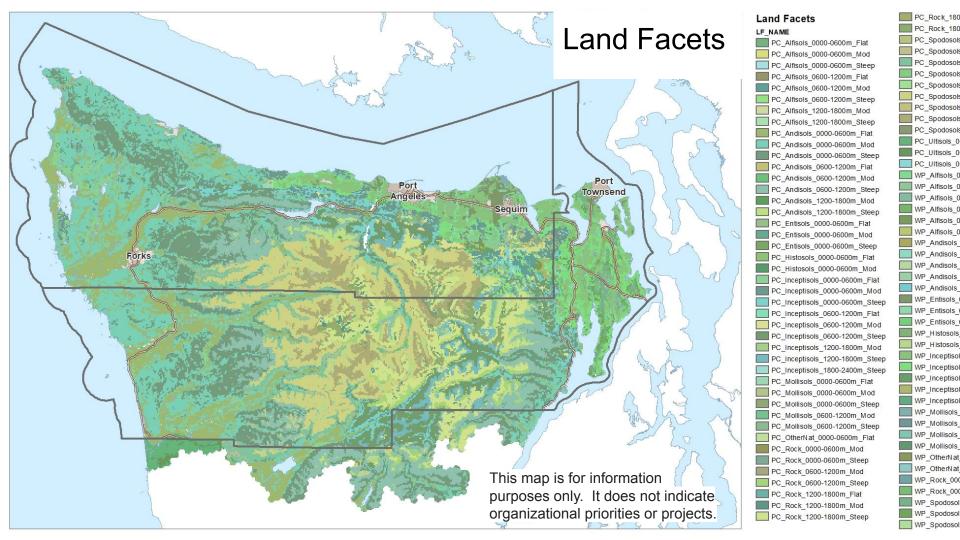
Slope Class

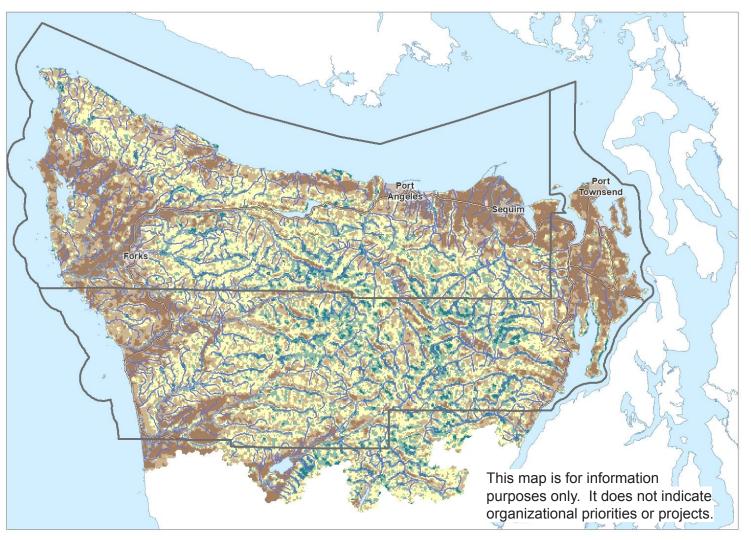




Soil Order

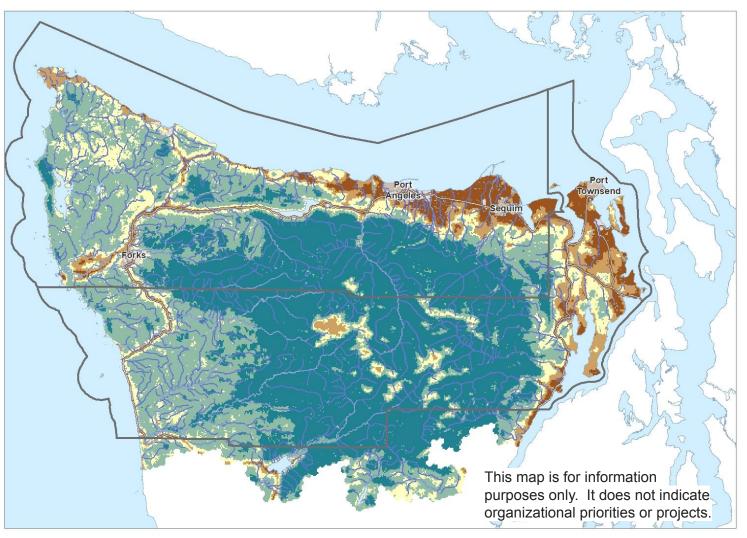






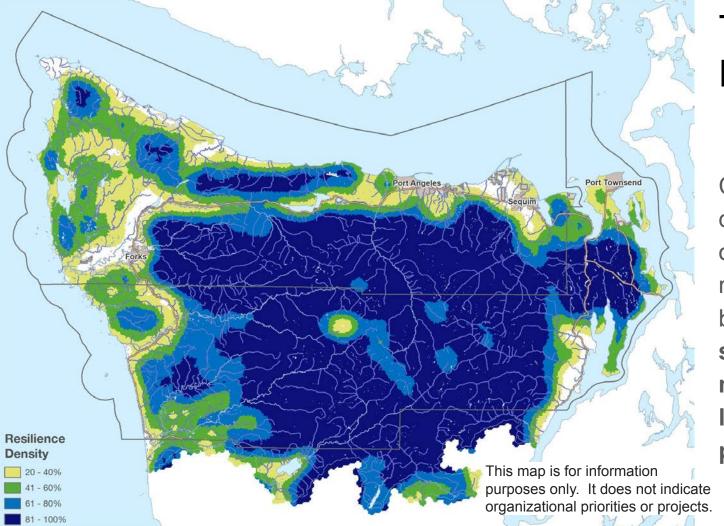
Topoclimate Diversity





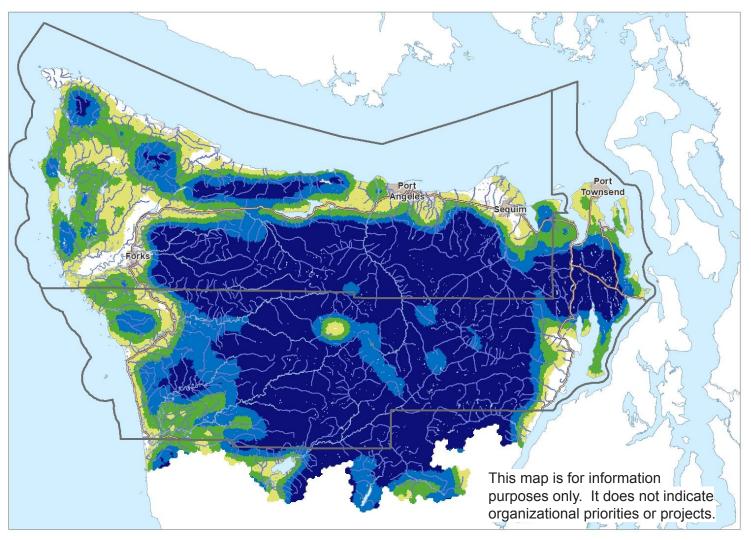
Landscape Permeability





TNC Climate Resilience

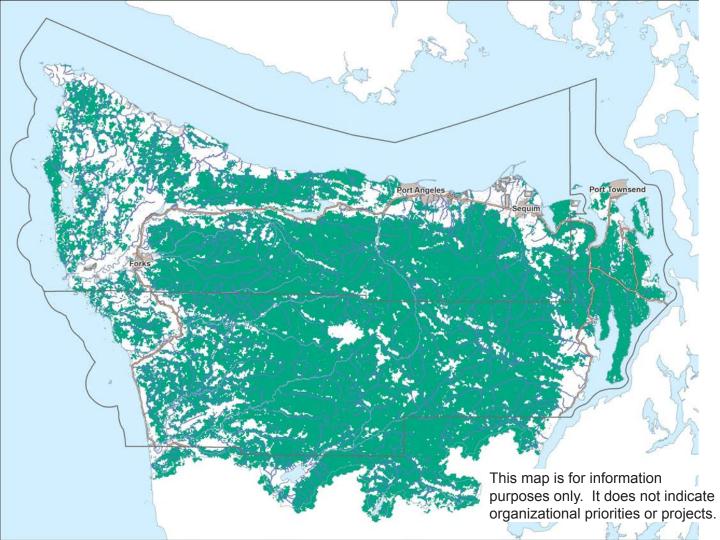
Climate resilience is determined based on the spatial relationships between elevation, slope, soil order, microclimate, and landscape permeability



Resilience Density

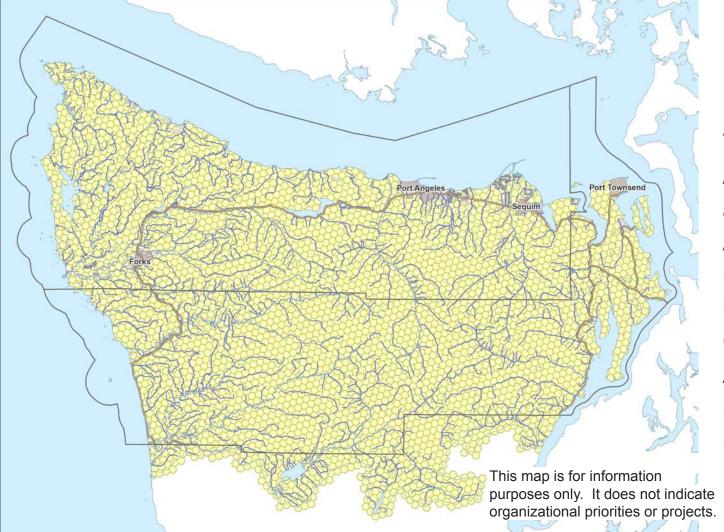


UGA



TNC Resilient Lands

The area in green represents the top two quintiles of resilience density

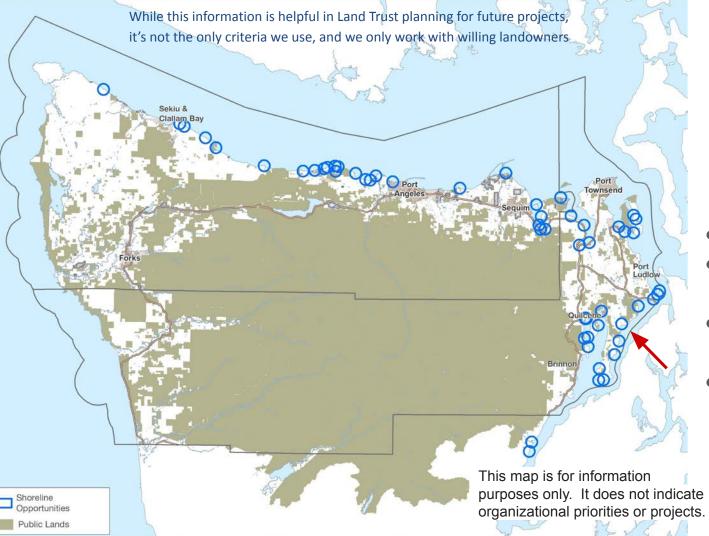


Hexagons

The Western Association of Fish and Wildlife Agencies (WAFWA) uses 1 sq mi hexagons for their **Crucial Habitat Assessment Tool** (CHAT) which is used by the WDFW



Percentage of Each Hex Covered by Resilient Lands



Shoreline Conservation Opportunities

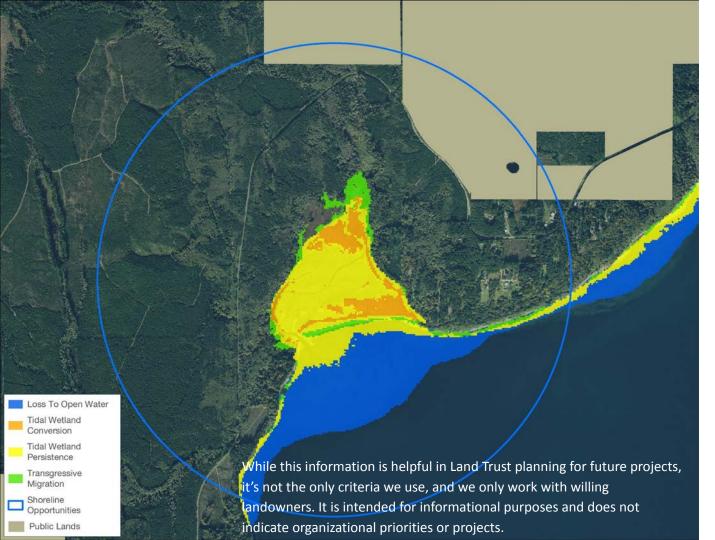
Blue circles indicate shorelines that are:

- Private
- Undeveloped/low % modification
- Contain important marine habitats
- Are adjacent to resilient lands

While this information is helpful in Land Trust planning for future projects, it's not the only criteria we use, and we only work with willing landowners. It is intended for informational purposes and does not indicate organizational priorities or projects. Public Lands

Thorndyke Bay

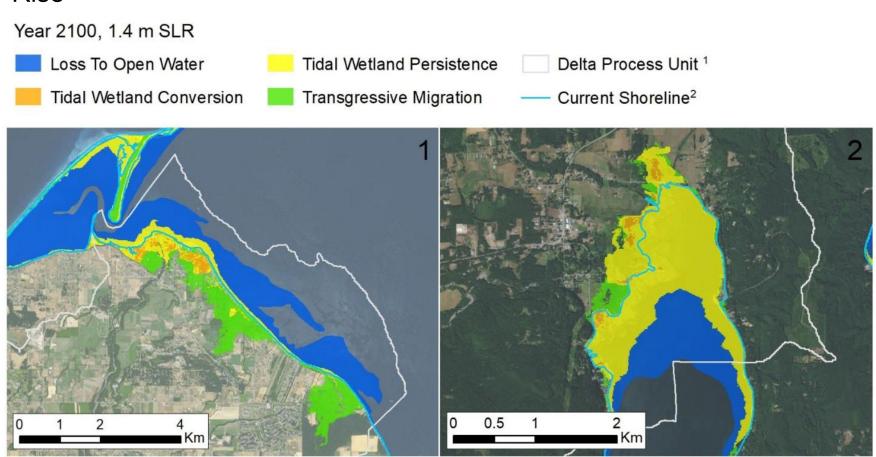
This is an area of Salt Marsh that has high resilience, is privately owned, and is forecasted to maintain tidal wetland conditions and expand northward as a consequence of sea level rise

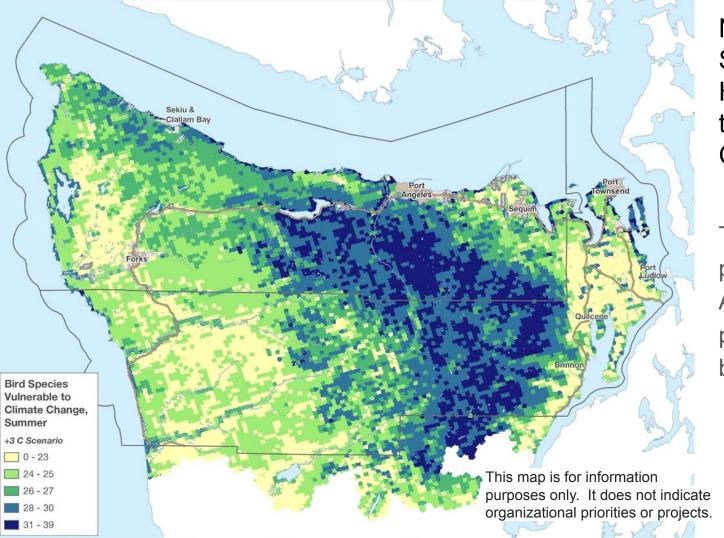


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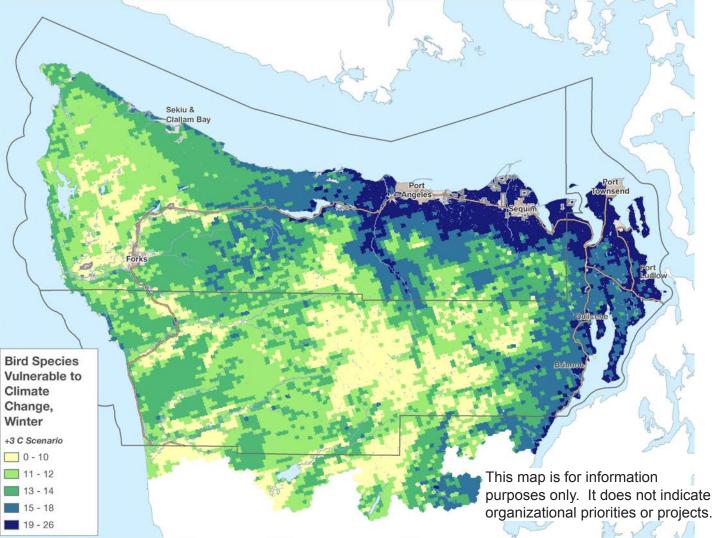
Changes to Tidal Wetlands and Nearshore Habitats Due to Sea Level Rise





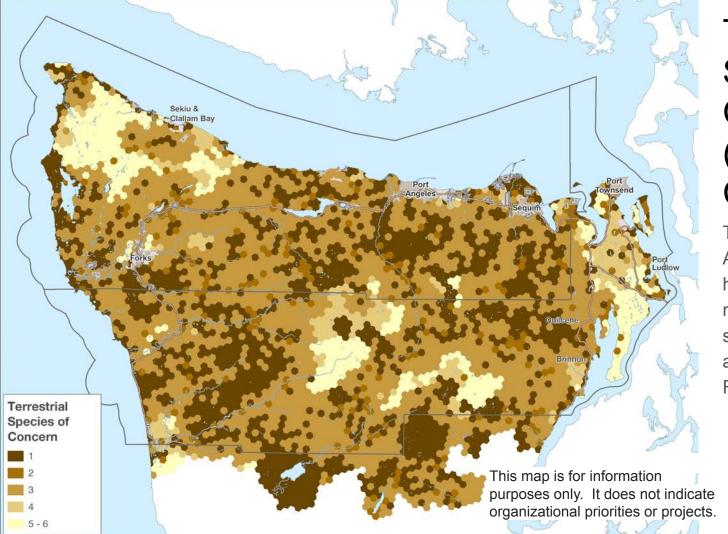
Number of Bird Species That are Highly Susceptible to Climate Change, Summer

These data were produced by the Audubon Society as part of their Survival by Degrees project



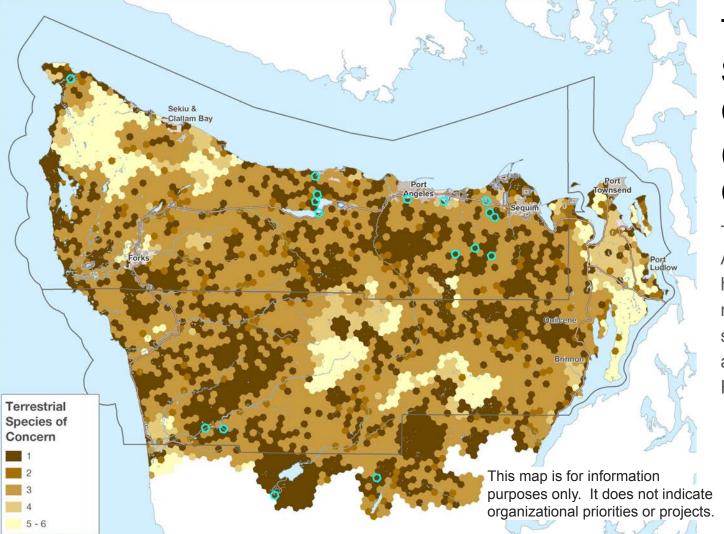
Number of Bird Species That are Highly Susceptible to Climate Change, Winter

These data were produced by the Audubon Society as part of their Survival by Degrees project



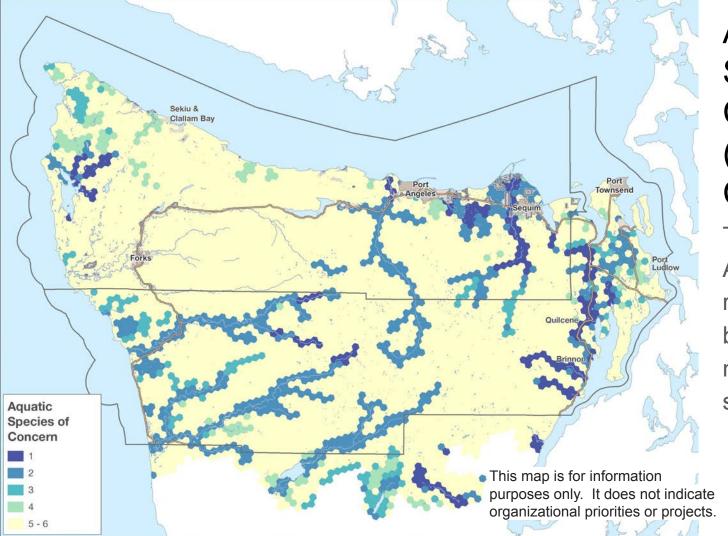
Terrestrial Species of Concern (WDFW CHAT)

The Crucial Habitat
Assessment Tool ranks
hexagons based on the
number of terrestrial
species of concern. Data
are current as of
February, 2019



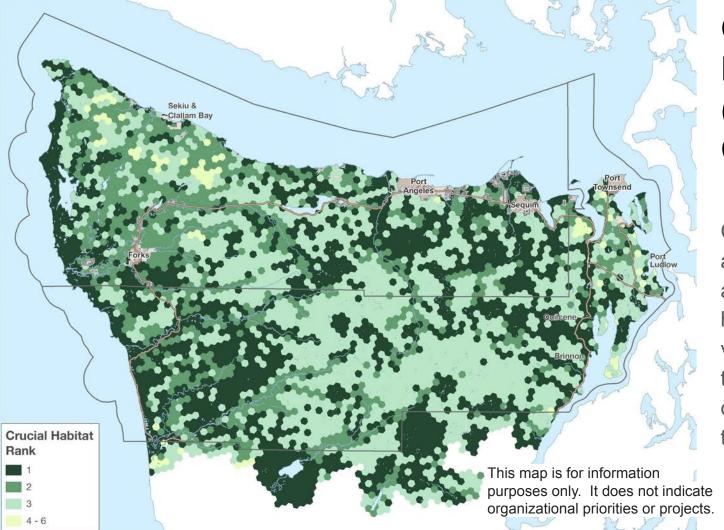
Terrestrial Species of Concern (WDFW CHAT)

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are current as of
February, 2019



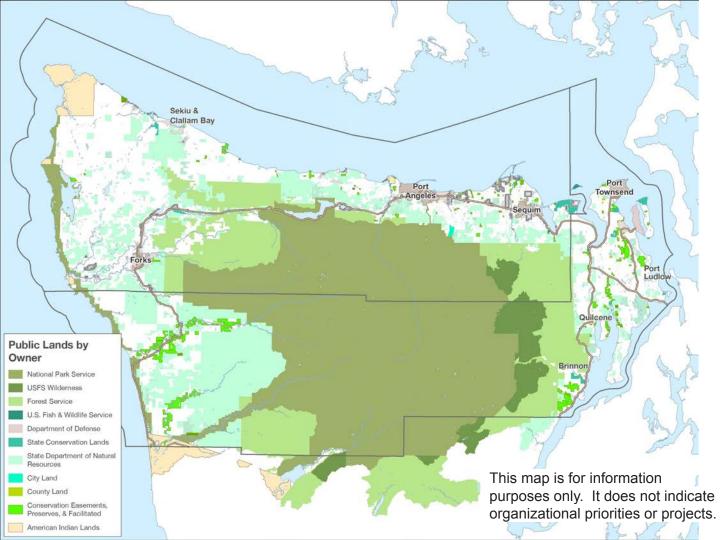
Aquatic Species of Concern (WDFW CHAT)

The Crucial Habitat
Assessment Tool
ranks hexagons
based on the
number of aquatic
species of concern



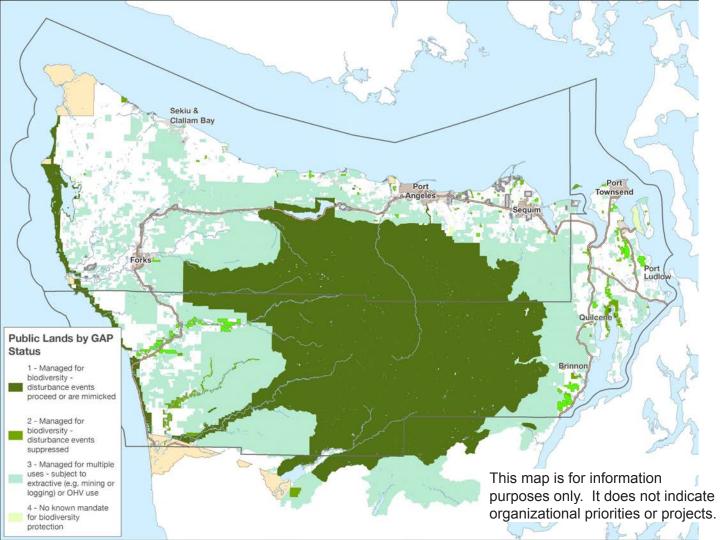
Crucial Habitat Rank (WDFW CHAT)

Combined terrestrial and freshwater analysis, assigning the highest crucial habitat value from both terrestrial and aquatic crucial habitat layer to the hexagon



What is the Distribution of Public Lands?

GAP Status 1, 2, 3 lands

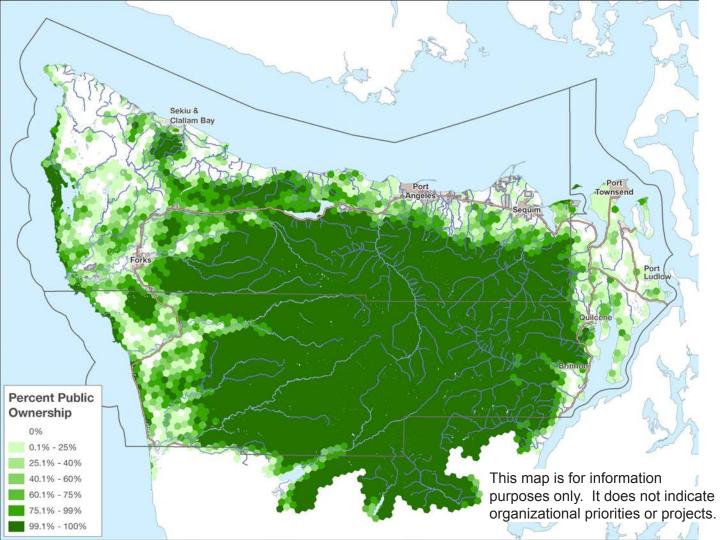


What is the Protection Level of Public Lands?

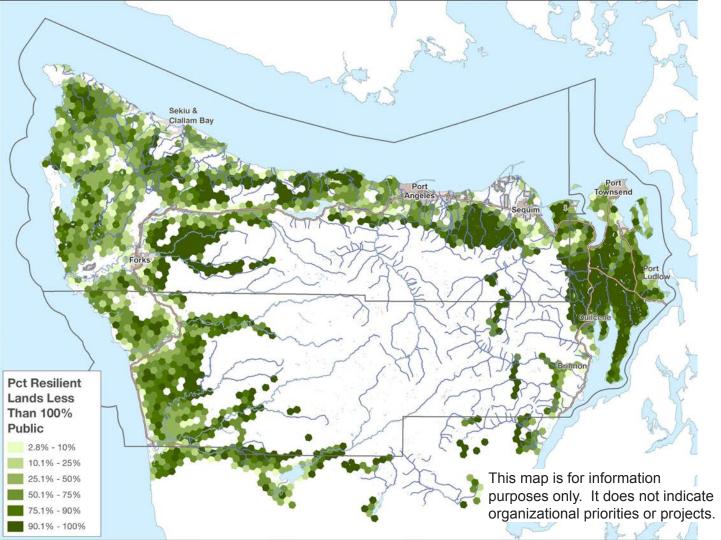


What is Already in Public Ownership?

Limiting public lands to GAP Status 1, 2, 3 lands

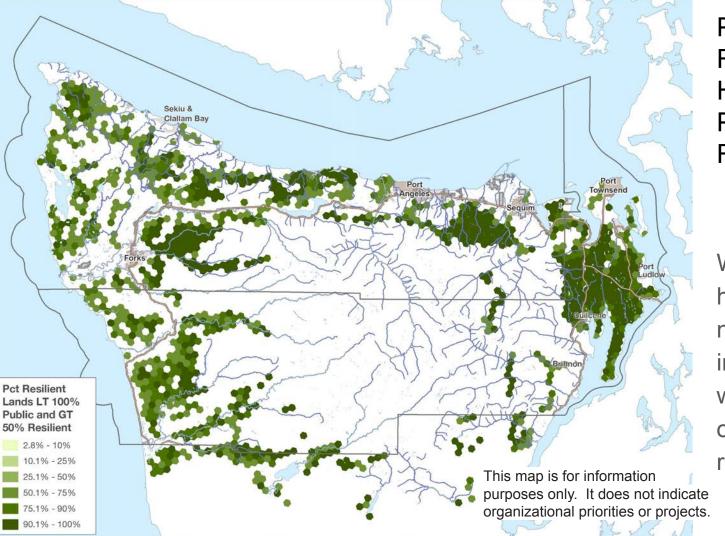


Percentage of Each Hex in Public Ownership



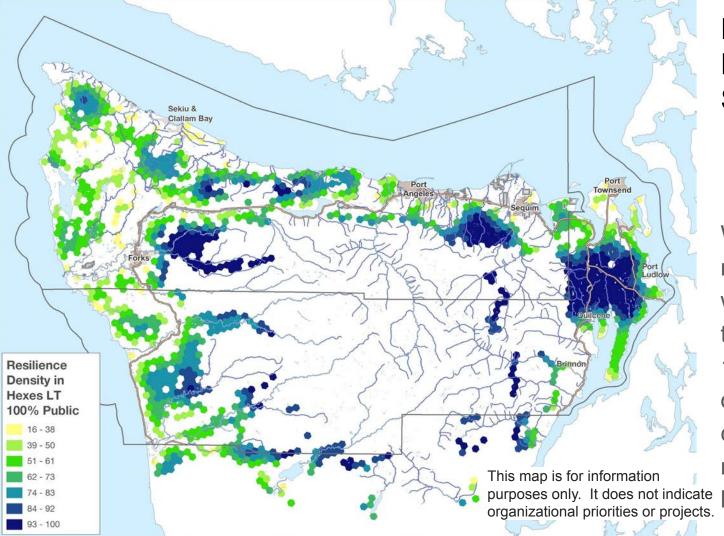
Percentage
Resilient Lands
in Hexes <
100% Public

Where are the hexagons that are not currently 100% in public ownership?



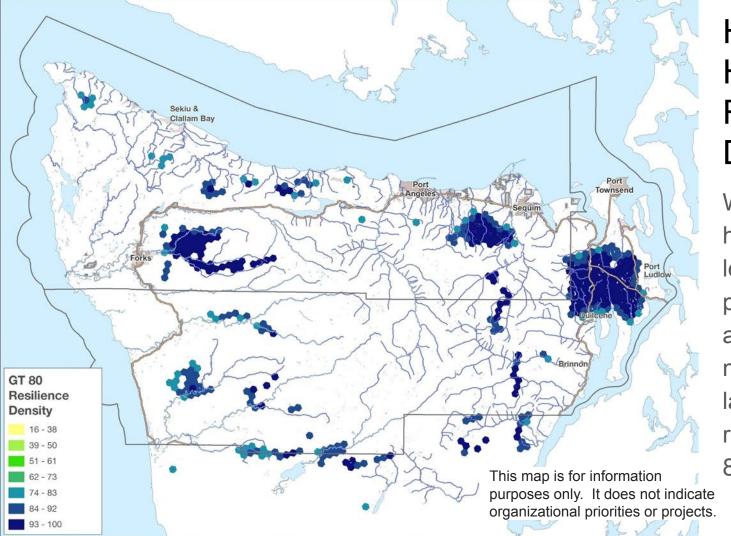
Percentage
Resilient Lands in
Hexes < 100%
Public, > 50%
Resilient Lands

Where are the hexagons that are not currently 100% in public ownership, which are also 50% or more covered by resilient lands?



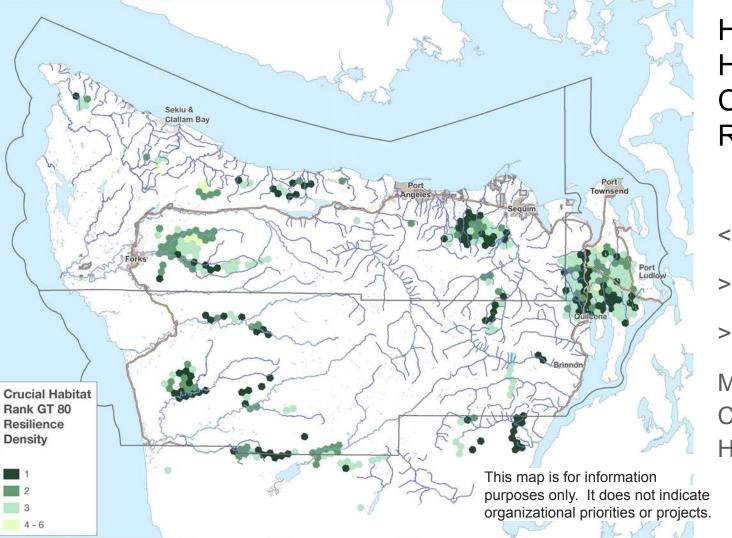
Resilience Density Within Selected Hexes

What is the resilience density within hexagons that are less than 100% in public ownership and covered 50% or more by resilient lands?



Hexes with High Resilience Density

Where are hexagons that are less than 100% in public ownership and covered 50% or more by resilient lands that have a resilience density of 80 or higher?



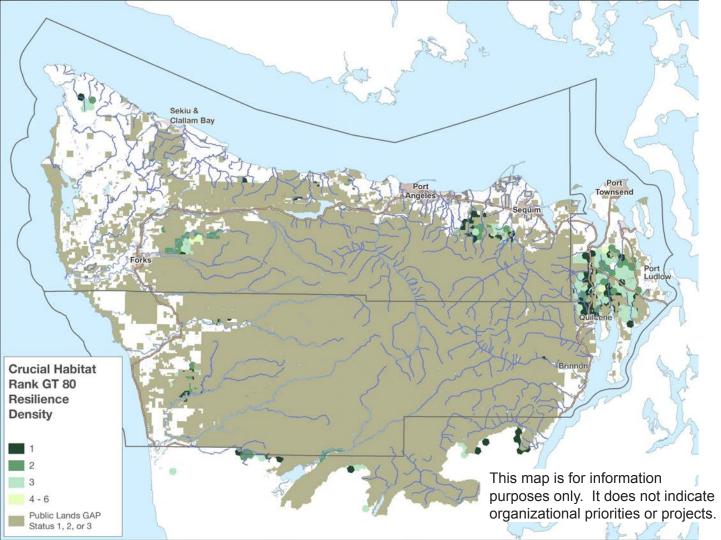
Hexes that Also Have High Crucial Habitat Ranking

< 100% Public

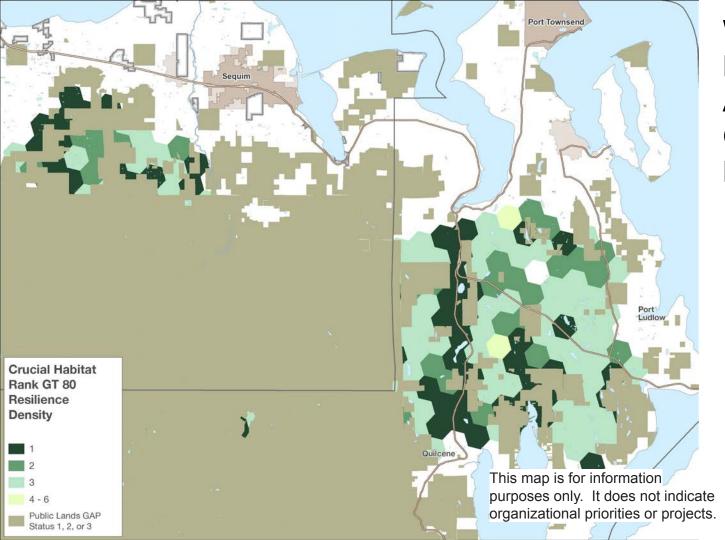
>= 50% Resilient

>= 80 Resilience

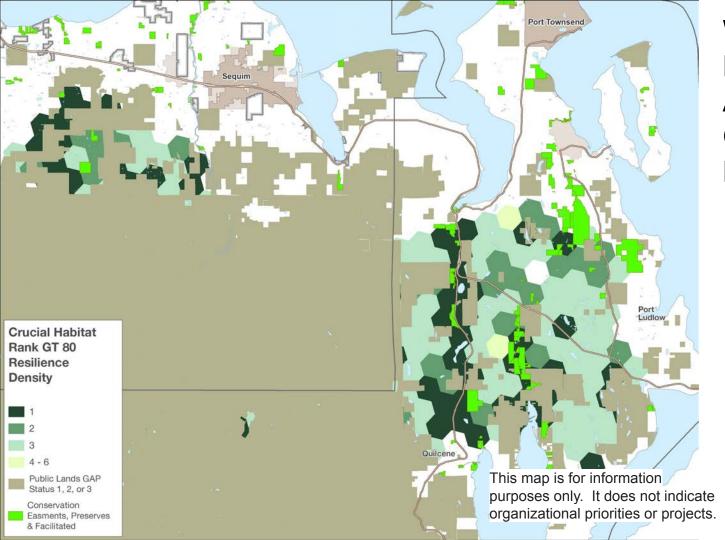
Mapped by WDFW CHAT Crucial Habitat Rank



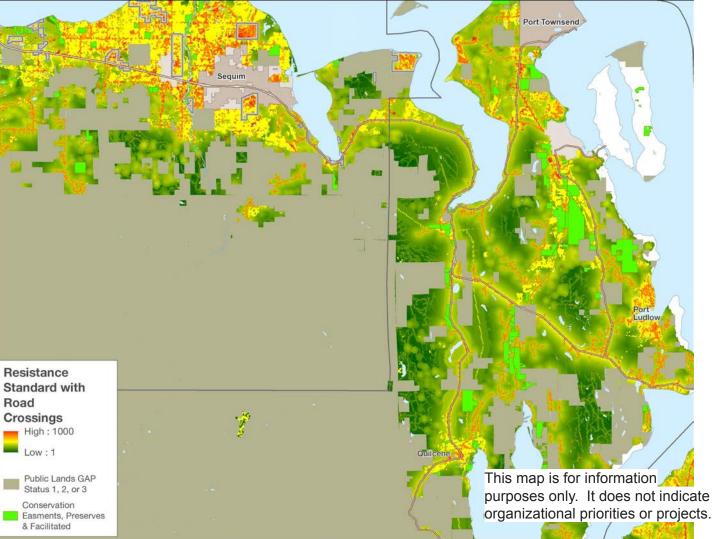
How Does it Relate to Existing Public Land?



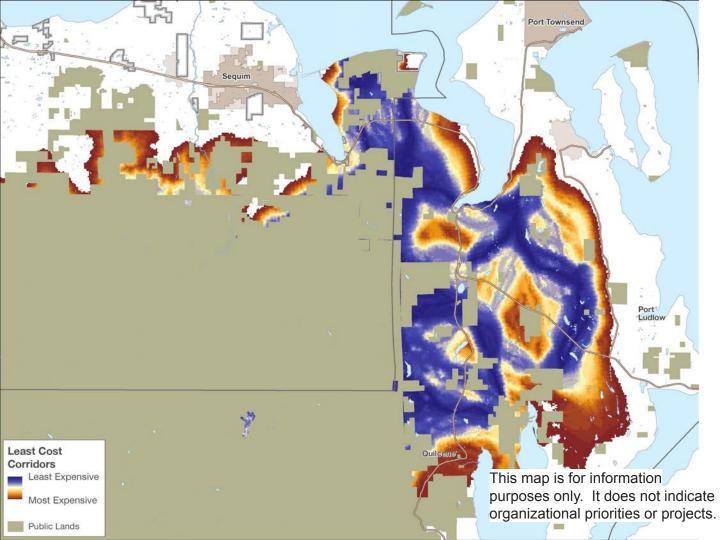
Where Have the Land Trusts
Already
Conserved
Land?



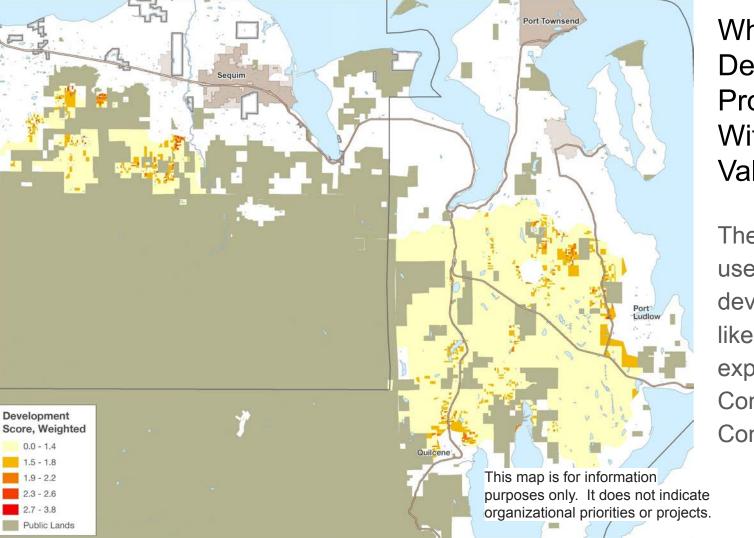
Where Have the Land Trusts
Already
Conserved
Land?



Where are
Areas Important
for Habitat
Connectivity and
Migration?

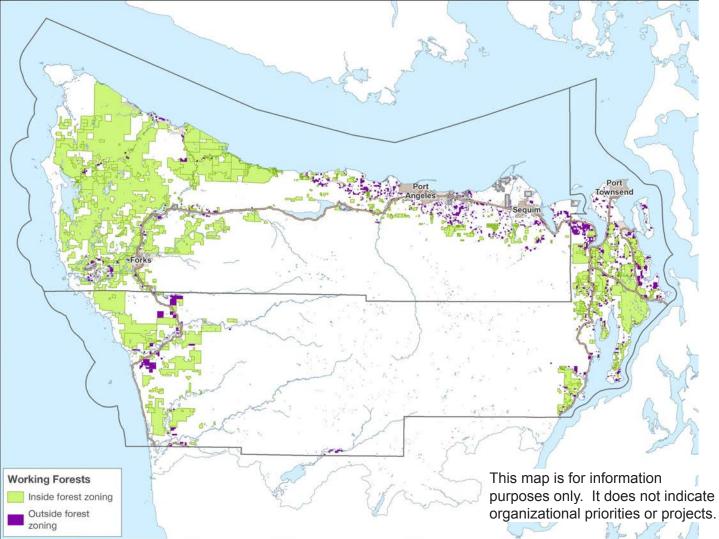


Where are
Areas Important
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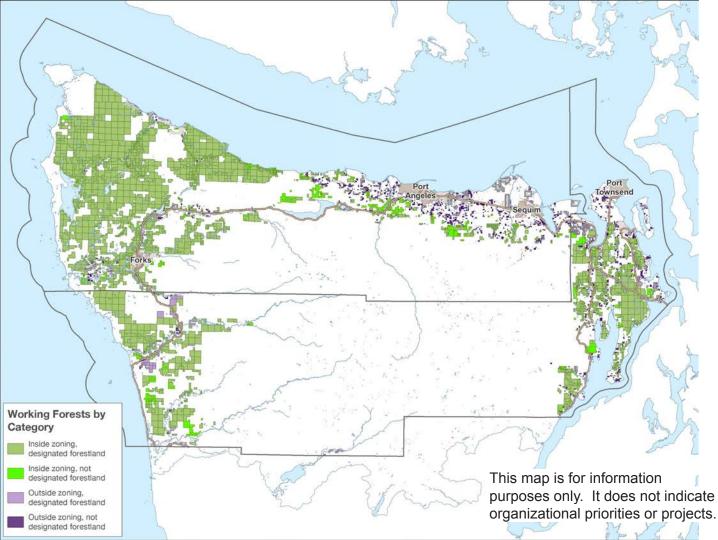
What is the Development Probability Within High Value Hexes?

The methodology used to map development likelihood will be explained under the Community Conservation Pillar



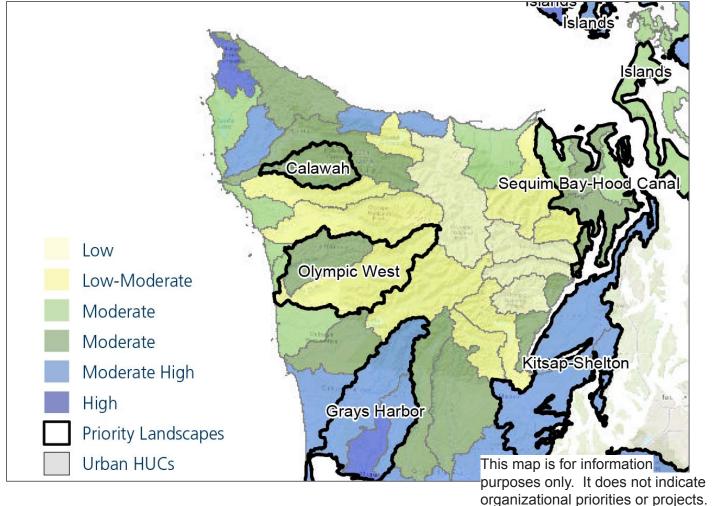
Working Forests

These are blocks of contiguous private ownership located within forest zoning, and parcels located outside current forest zoning that intersect FPAs

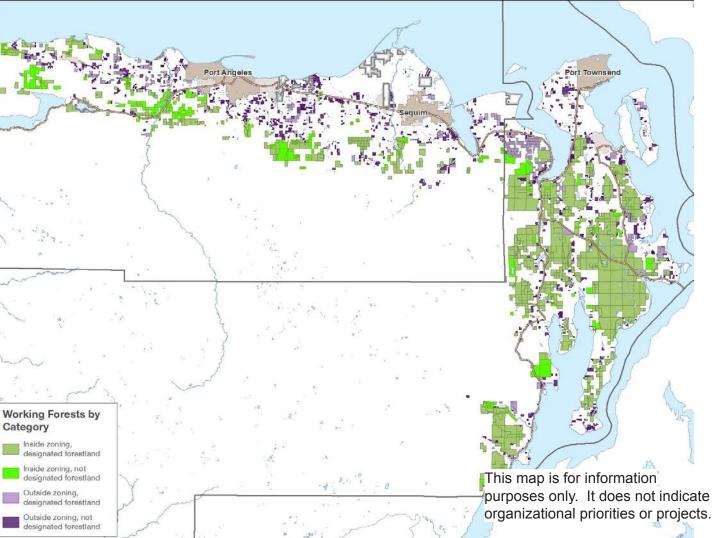


Designated Forestland

Working forests
are divided into
Designated
Forestland and
Not Designated
Forestland, both
within and outside
of forest zoning

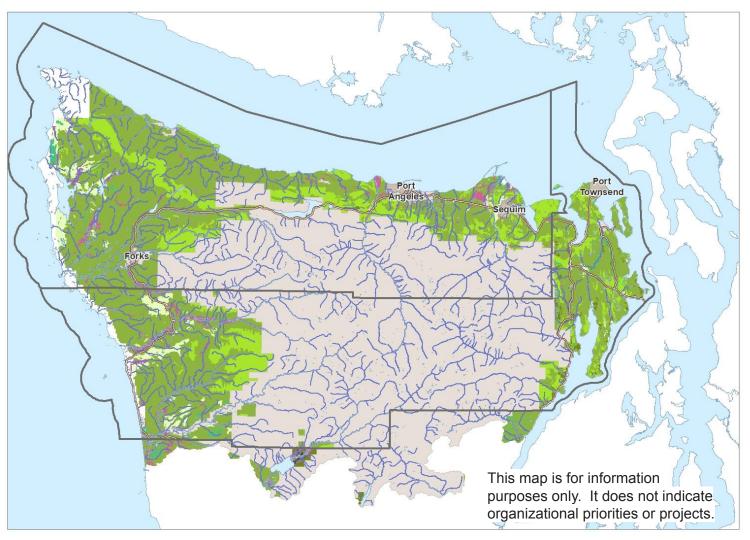


Western
Washington
Forest Health
Priority
Watersheds
(DNR)



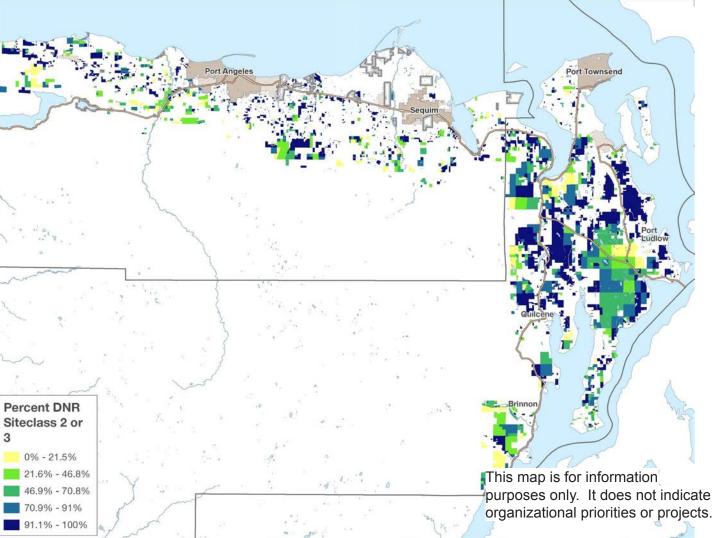
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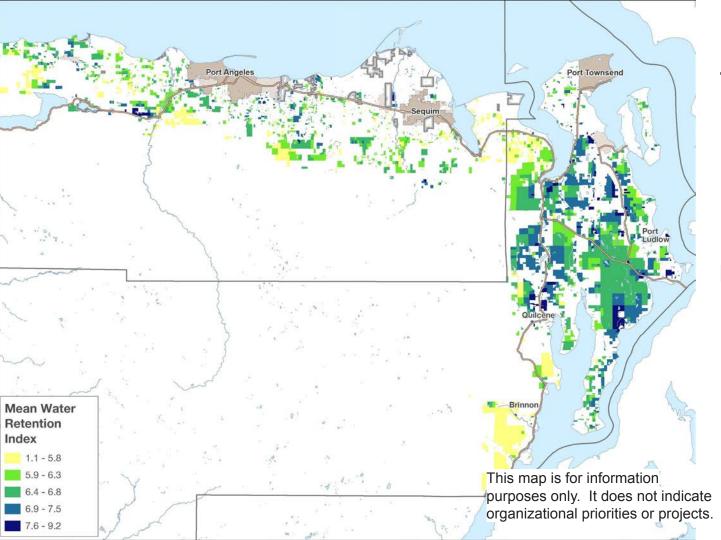
WA DNR Siteclass





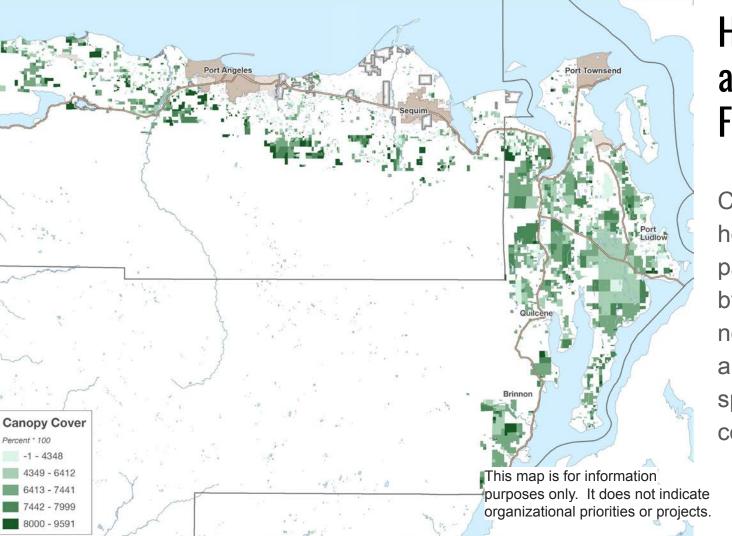
How Suitable is the Land for Growing Trees?

Percentage of each parcel covered by WA DNR Site Class 2 or 3



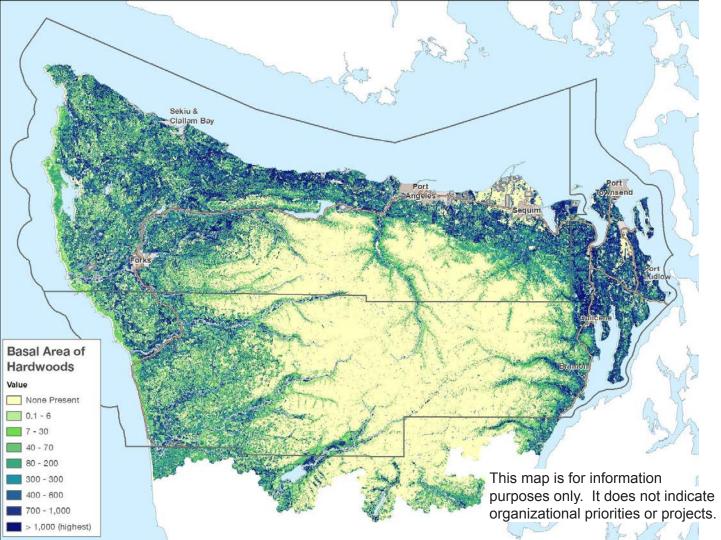
How Well Does the Land Retain Water?

Mean Water Retention Index per parcel



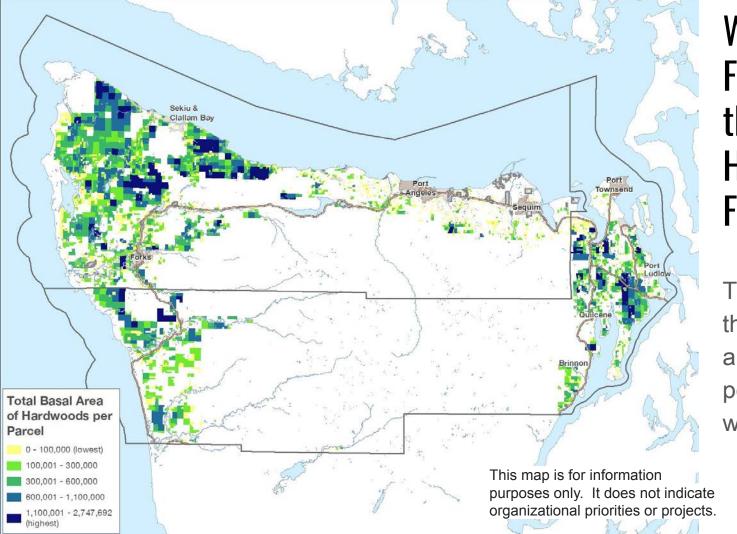
How Forested are the Working Forest Parcels?

Canopy cover tells how much of each parcel is covered by trees, but does not tell us anything about size/age or species composition



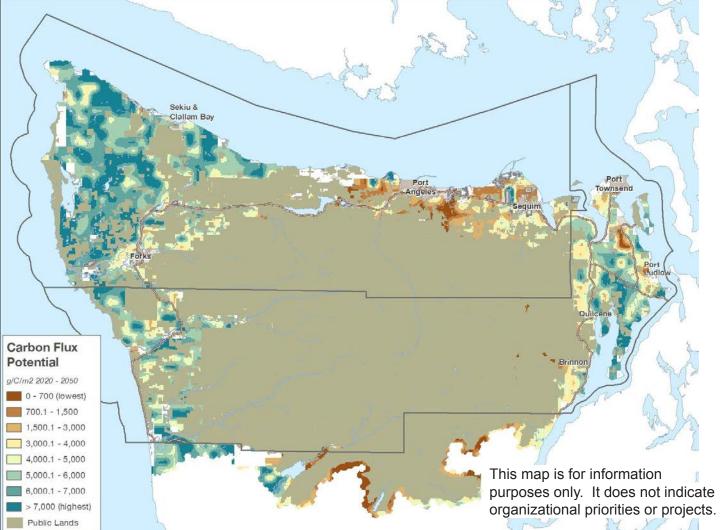
Where Are Hardwoods Located?

This map shows the estimated basal area of hardwoods per pixel



Where Working Forests Contain the Most Hardwood Forest?

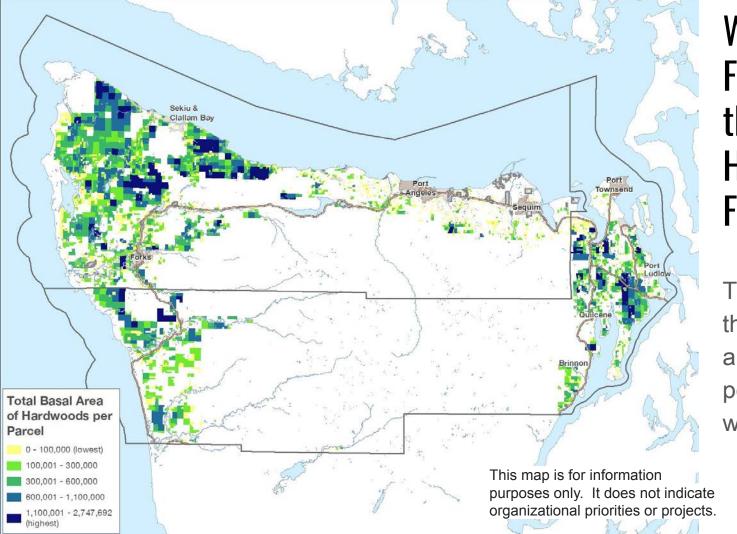
This map shows the total basal area of hardwoods per parcel within working forests



Carbon Sequestration Opportunities

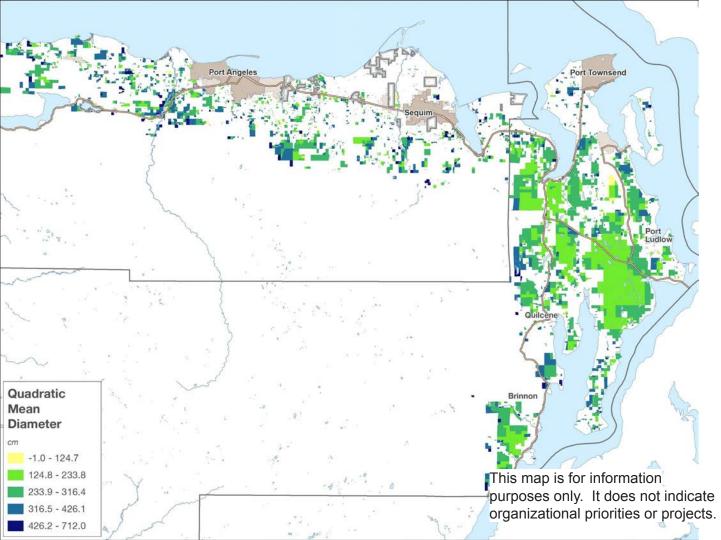
From USGS:

https://www.usgs.g
ov/apps/landcarbo
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n/categories/landcarbo
n/categories/landcarbo
n/categories/net-e
cosystem-c-balanc
e/download/



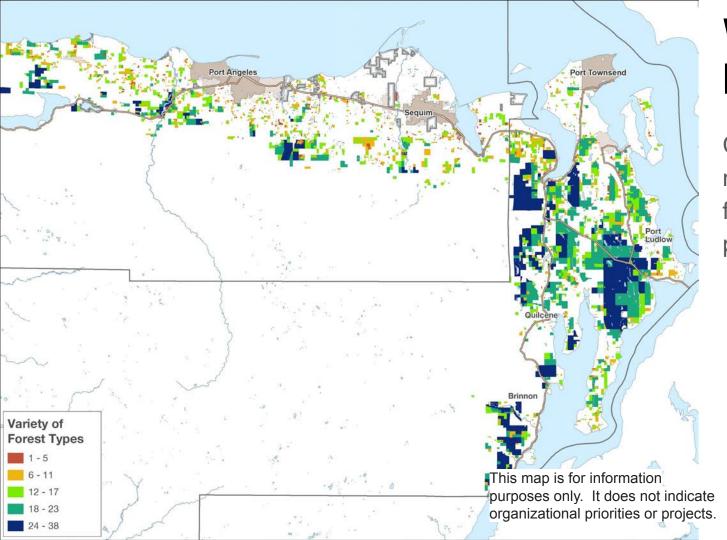
Where Working Forests Contain the Most Hardwood Forest?

This map shows the total basal area of hardwoods per parcel within working forests



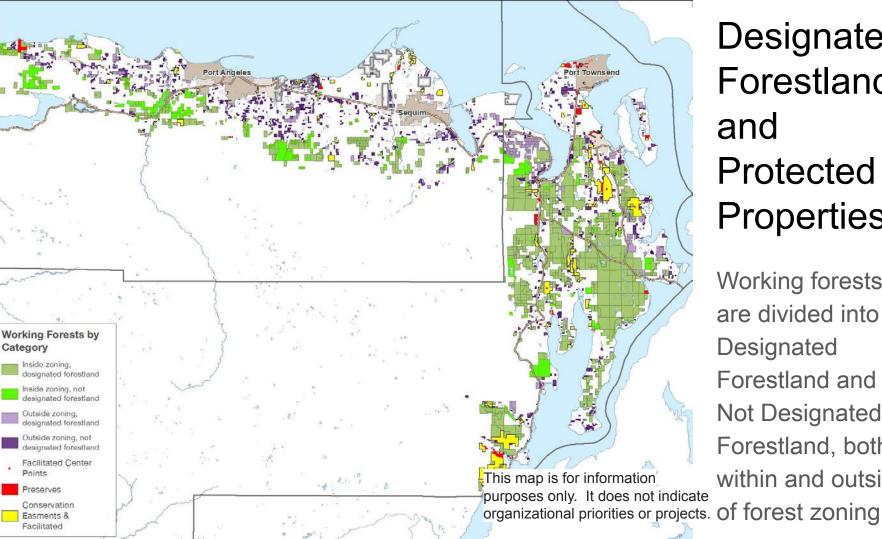
Size of Trees

Quadratic Mean
Diameter of
dominant tree
species per pixel,
expressed as
mean within each
parcel



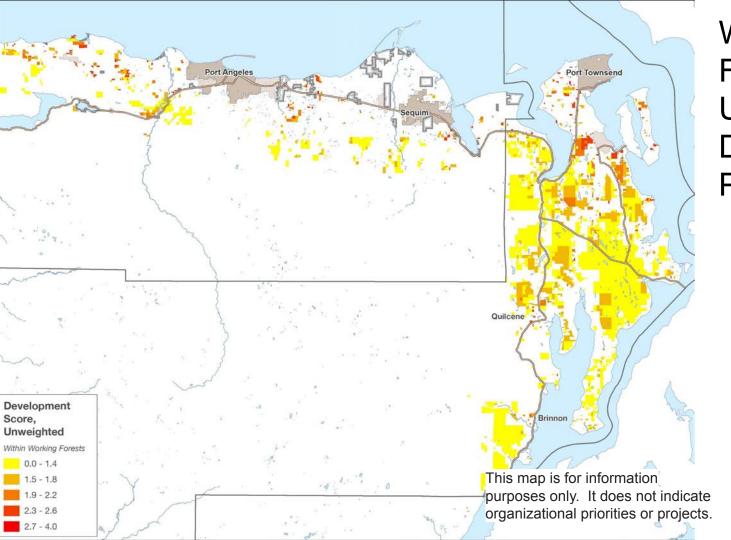
Variety of Forest Types

Count of the number of distinct forest types per parcel

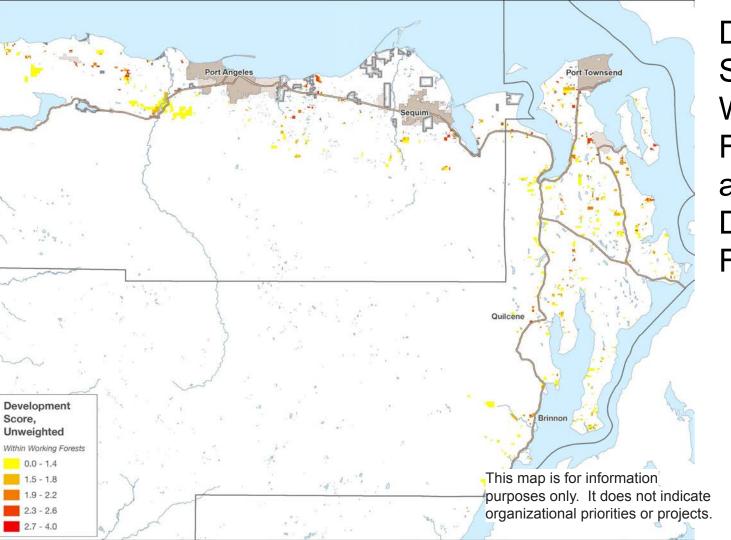


Designated Forestland and **Protected Properties**

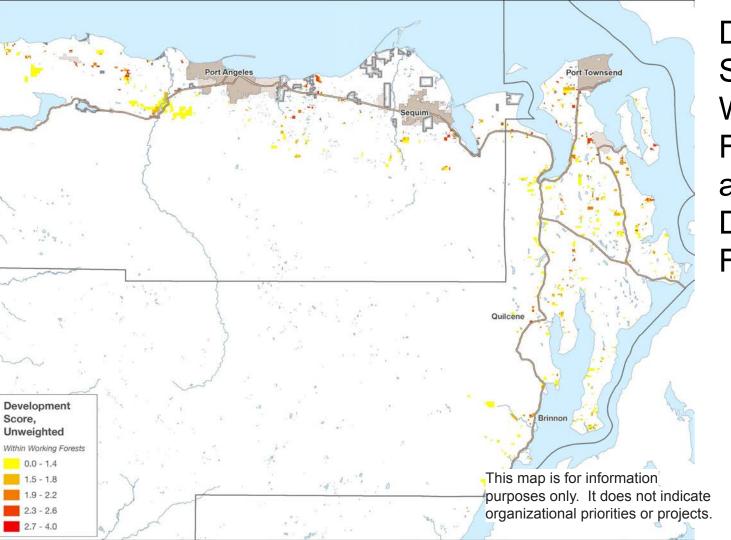
Working forests are divided into Designated Forestland and Not Designated Forestland, both within and outside



Working
Forests by
Unweighted
Development
Potential Score

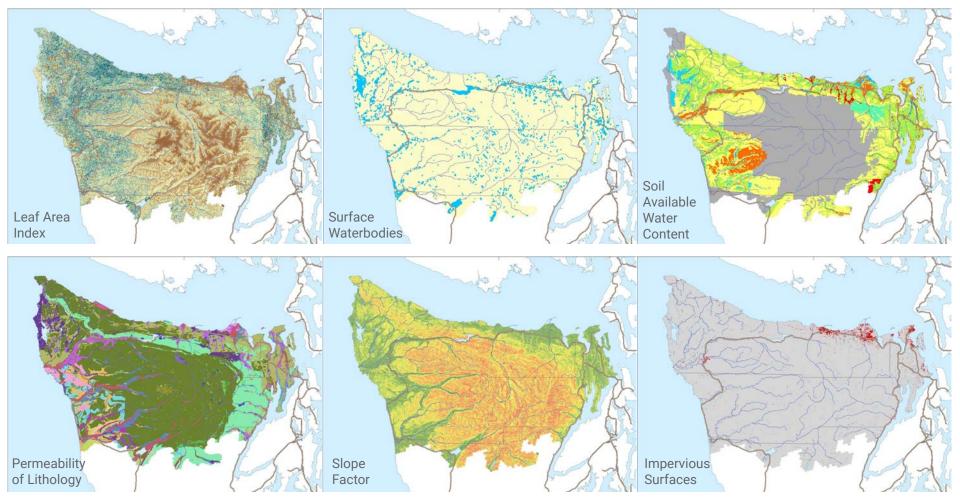


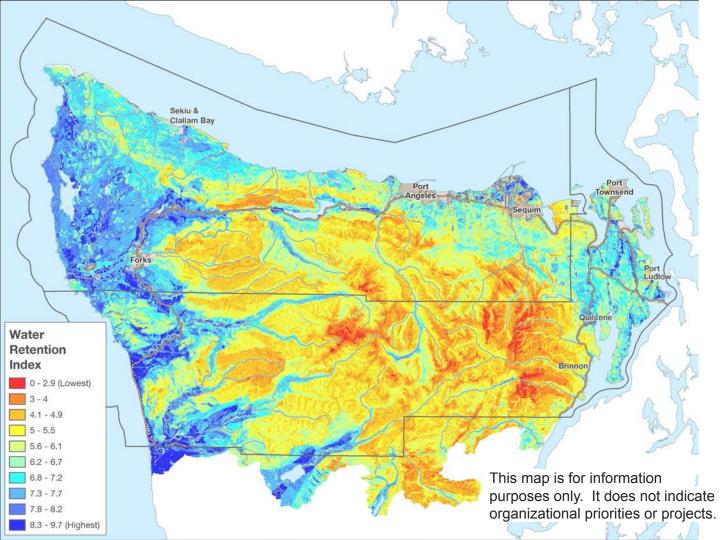
Development
Score of
Working
Forests That
are Not
Designated
Forestland



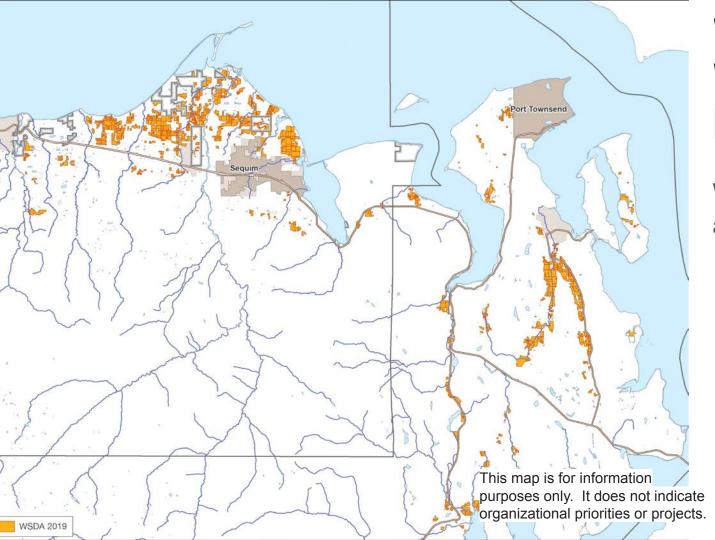
Development
Score of
Working
Forests That
are Not
Designated
Forestland

Water Retention Index



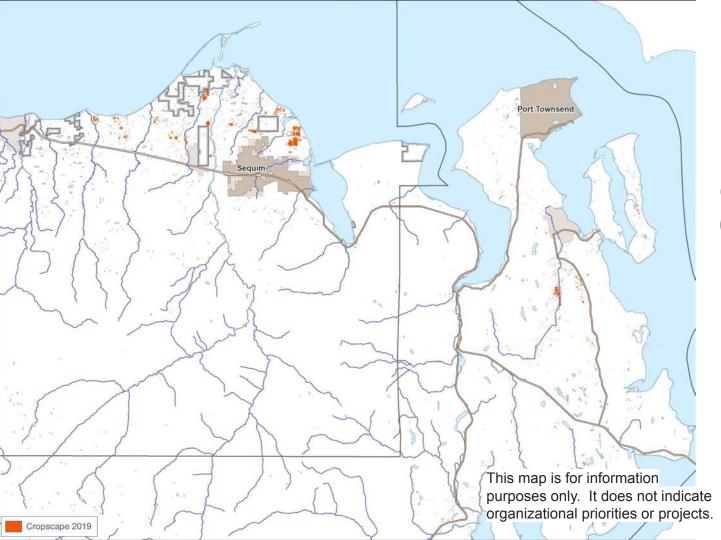


Water
Retention
Index--Draft
Results



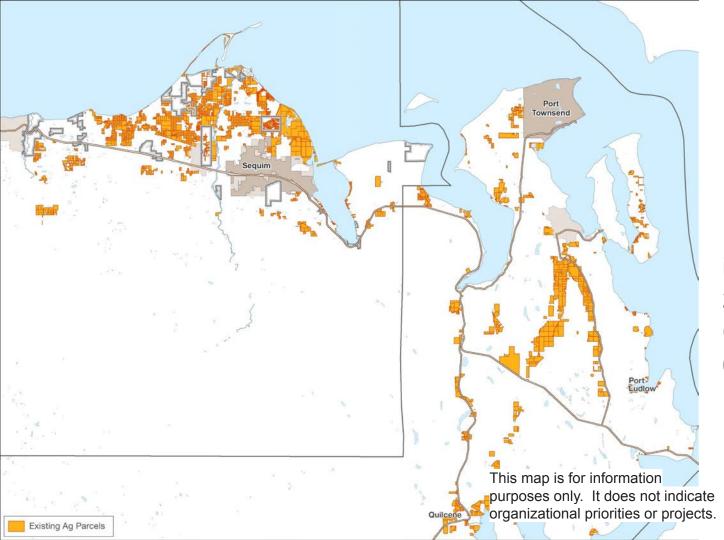
Where Are Working Farms?

WSDA mapped agricultural parcels



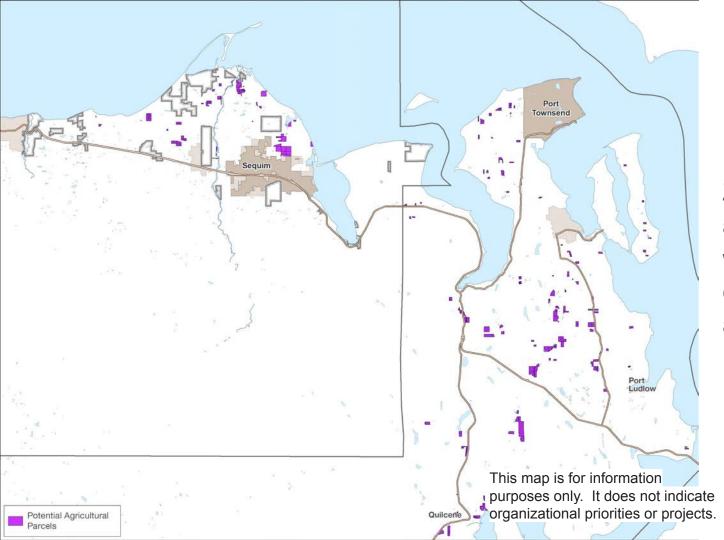
Where Are Working Farms?

Cropscape 2019 > 0.5 acre



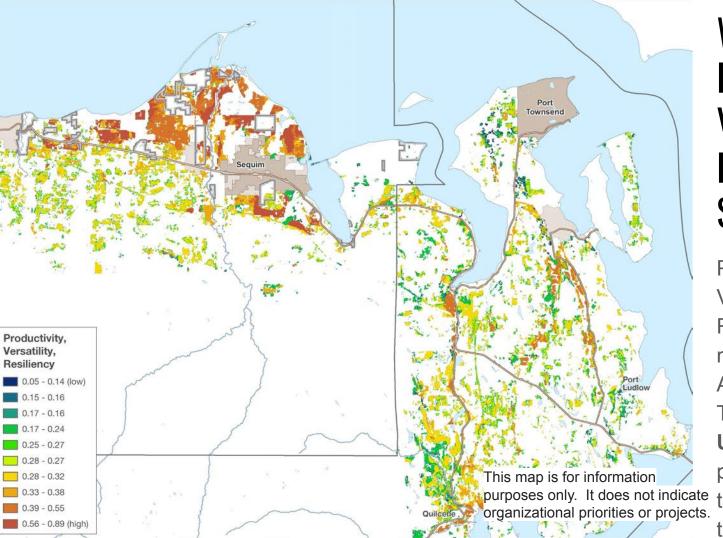
What is the Extent of Current Ag Parcels?

Parcels that either intersect WSDA 2019 or contain Cropscape 2019 (> 0.5 acre)



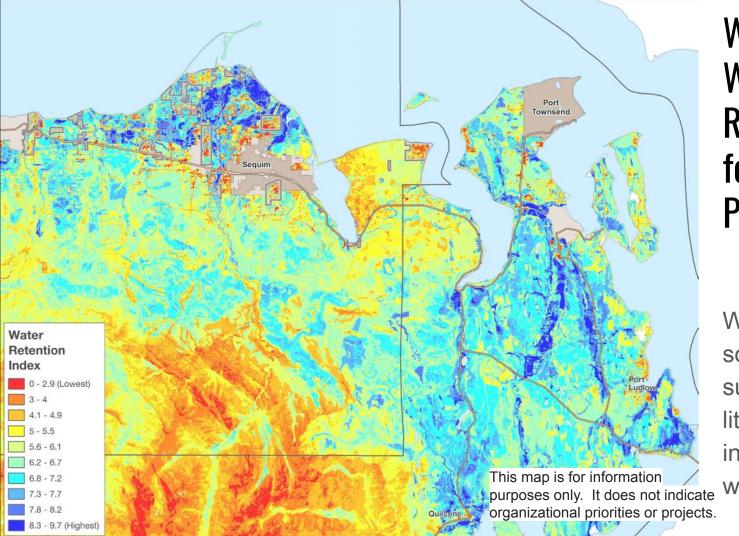
Where is Potential Ag Land?

Zoned for agriculture but not within WSDA or containing > 0.5 acres in Cropscape



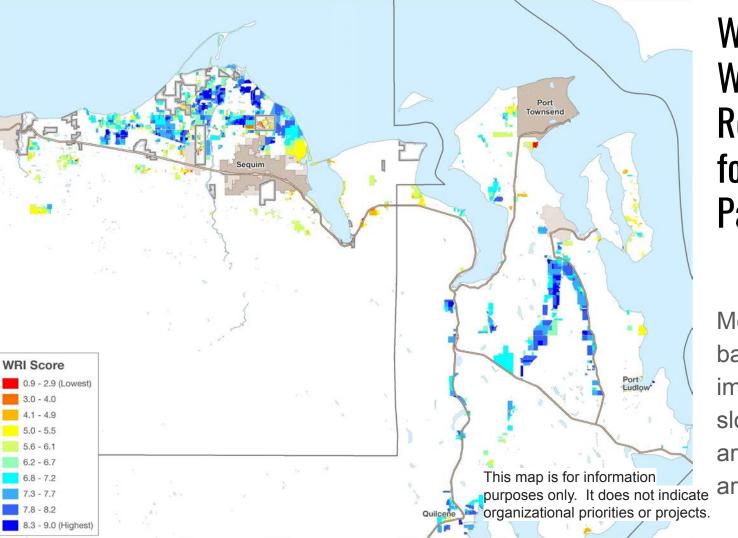
What is the Productivity, Versatility, and Resilience Score?

Productivity, Versatility, and Resilience was mapped by the American Farmland Trust for the **Farms Under Threat** program; the higher the number, the higher the PVR



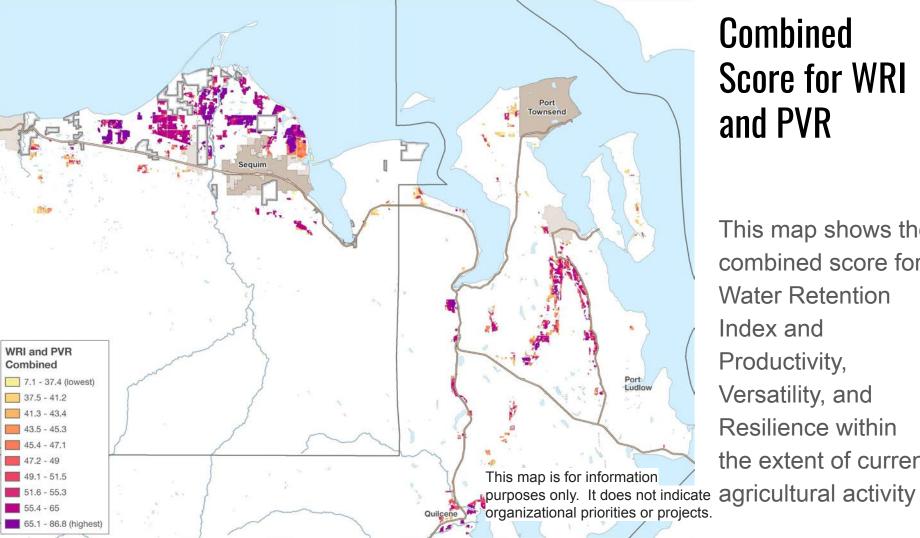
What is the Water Retention Index for Current Ag Parcels?

WRI score based on soils, impervious surface, slope, lithology, leaf area index, and area of waterbodies



What is the Water Retention Index for Current Ag Parcels?

Mean WRI score based on soils, impervious surface, slope, lithology, leaf area index, and area of waterbodies



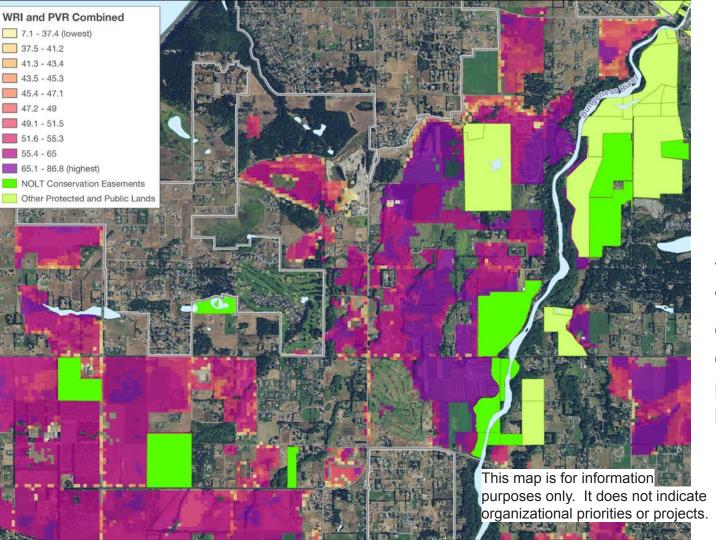
Combined Score for WRI and PVR

This map shows the combined score for Water Retention Index and Productivity, Versatility, and Resilience within the extent of current

WRI and PVR Combined 7.1 - 37.4 (lowest) 37.5 - 41.2 41.3 - 43.4 45.4 - 47.1 65.1 - 86.8 (highest) This map is for information purposes only. It does not indicate organizational priorities or projects.

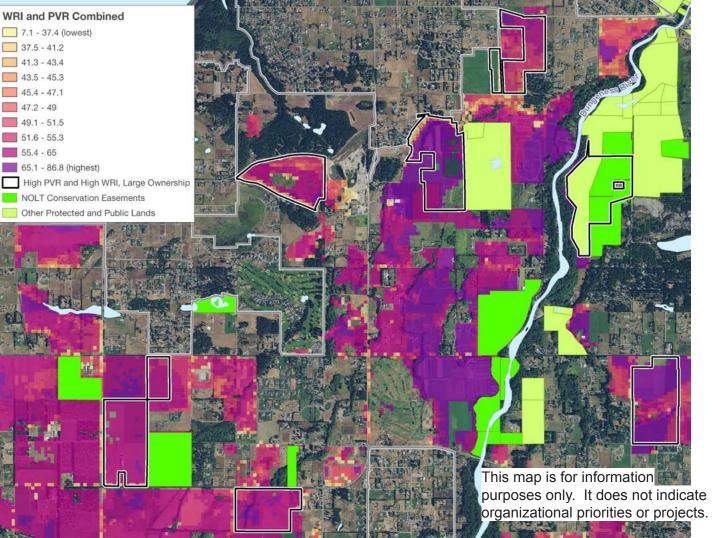
Combined Score for WRI and PVR

This map shows the combined score for Water Retention Index and Productivity, Versatility, and Resilience within the extent of current agricultural activity



Combined Score for WRI and PVR with Conservation Easements

This map shows high WRI and PVR with existing conservation easements and other protected and public lands



Ag Land with High WRI/PVR, Large Combined Ownerships, Small Parcels

WRI and PVR Combined 7.1 - 37.4 (lowest) 37.5 - 41.2 41.3 - 43.4 43.5 - 45.3 45.4 - 47.1 This map is for information purposes only. It does not indicate organizational priorities or projects. 65.1 - 86.8 (highest)

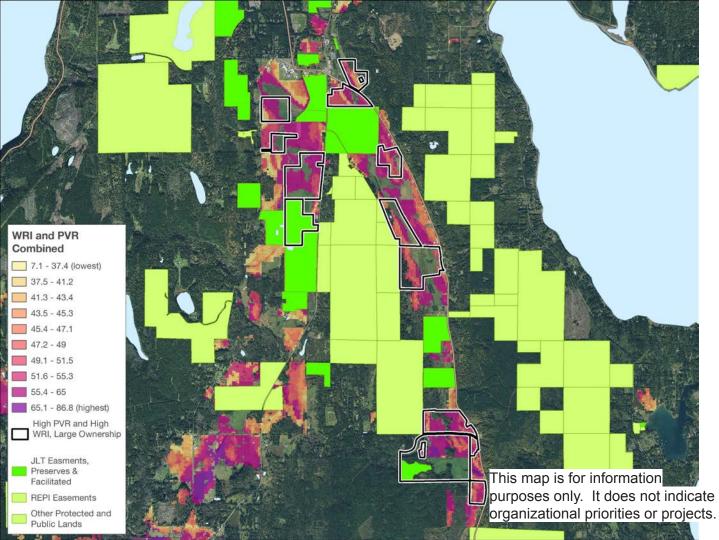
Combined Score for WRI and PVR

This map shows the combined score for Water Retention Index and Productivity, Versatility, and Resilience within the extent of current agricultural activity

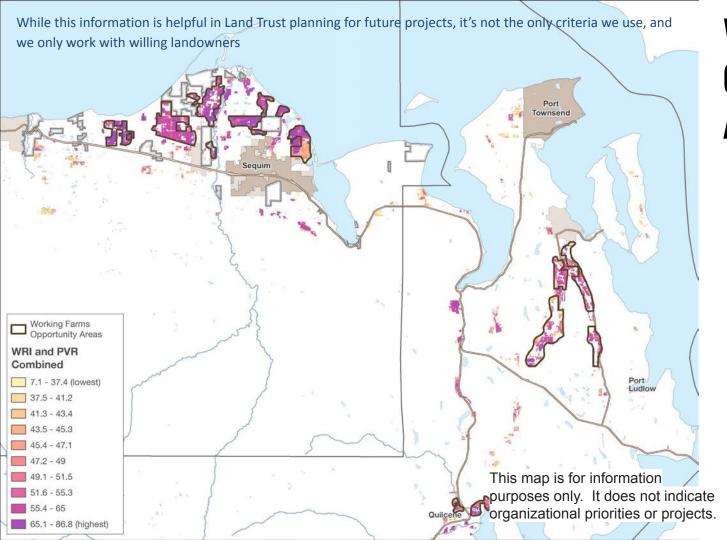
WRI and PVR Combined 7.1 - 37.4 (lowest) 45.4 - 47.1 51.6 - 55.3 65.1 - 86.8 (highest) JLT Easments. Preserves & This map is for information Facilitated purposes only. It does not indicate REPI Easements organizational priorities or projects. Other Protected and

Combined Score for WRI and PVR with Conservation Easements

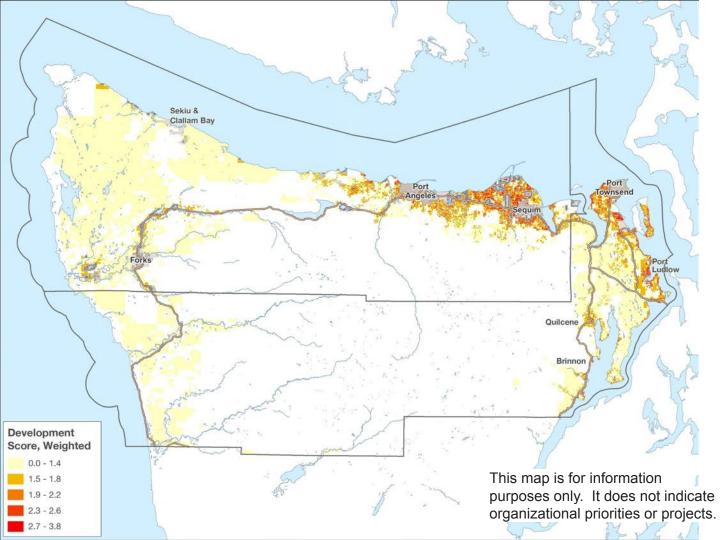
This map shows high WRI and PVR with existing conservation easements and other protected and public lands



Ag Land with High WRI/PVR, Large Combined Ownerships, Small Parcels



Working Farms Opportunity Areas



Weighted Development Score, v3

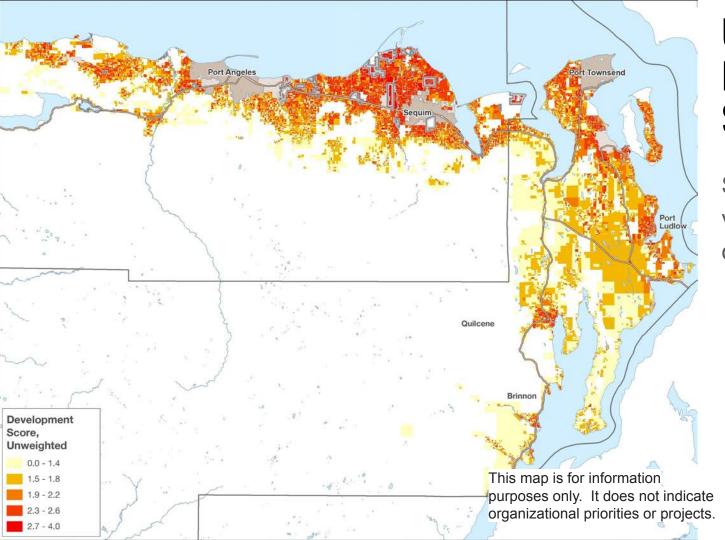
Assessed Land Value per Acre [0.35]

Percent Surrounding
Developed Parcels [0.25]

Presence within/Proximity to UGAs [0.2]

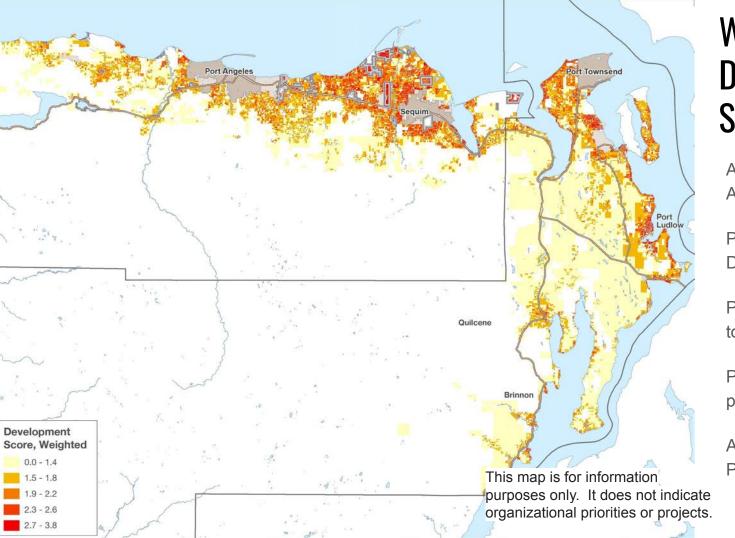
Potential Development per Parcel [0.15]

Average Slope within Parcel [0.05]



Unweighted Development Score, v3

Simply adding all 5 variables and dividing by 5



Weighted Development Score, v3

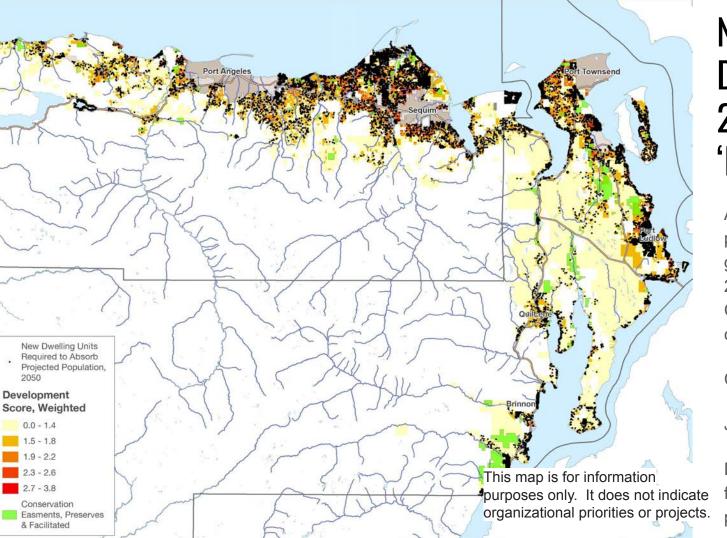
Assessed Land Value per Acre [0.35]

Percent Surrounding
Developed Parcels [0.25]

Presence within/Proximity to UGAs [0.2]

Potential Development per Parcel [0.15]

Average Slope within Parcel [0.05]



New Development by 2050, OFM 'High' Series

Assume highest population projection generated by OFM for 2050 and hold ratios of City/UGA/Unincorporated constant:

Clallam +8,363 units

Jefferson +8,353

Distributing by avg ppl/du from highest to lower probability

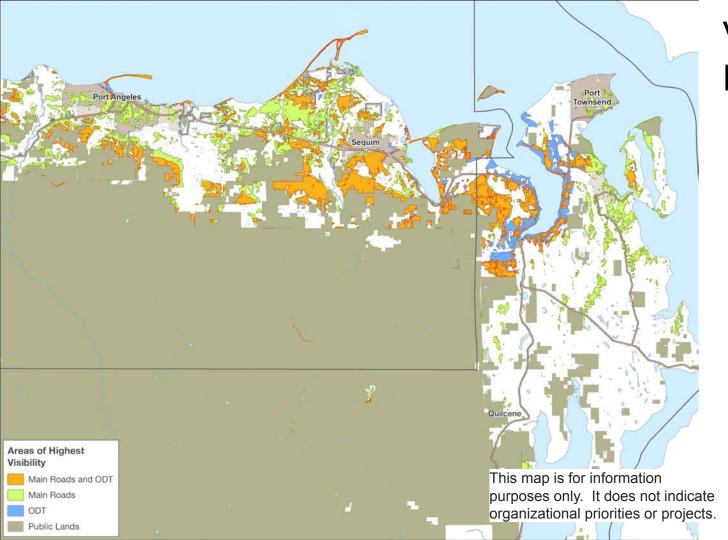


Observer Locations

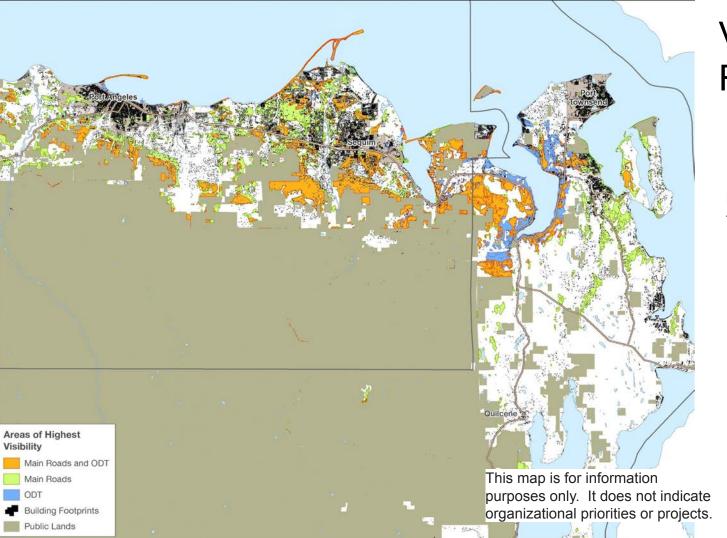
269 observer locations on major roads, 154 on ODT in Clallam

487 observer locations on major roads, 51 on ODT in Jefferson

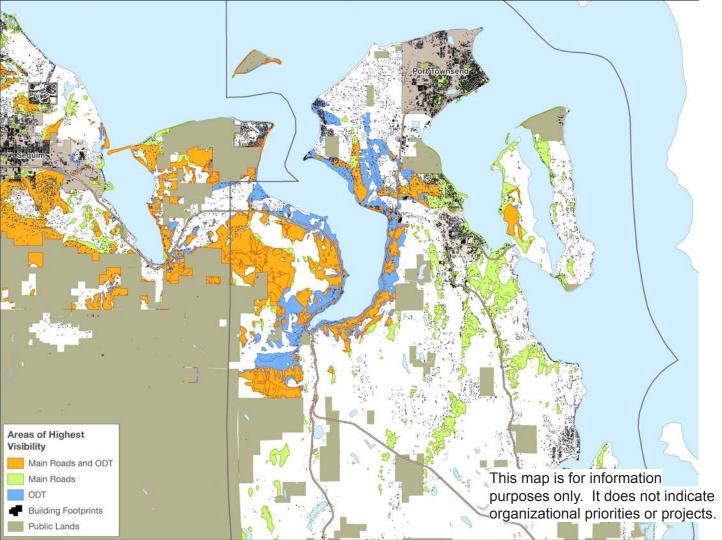
961 separate viewshed rasters, summed within the two extents



Highly visible areas on private land



Highly visible areas on private land with building footprints



Highly visible areas on private land with building footprints

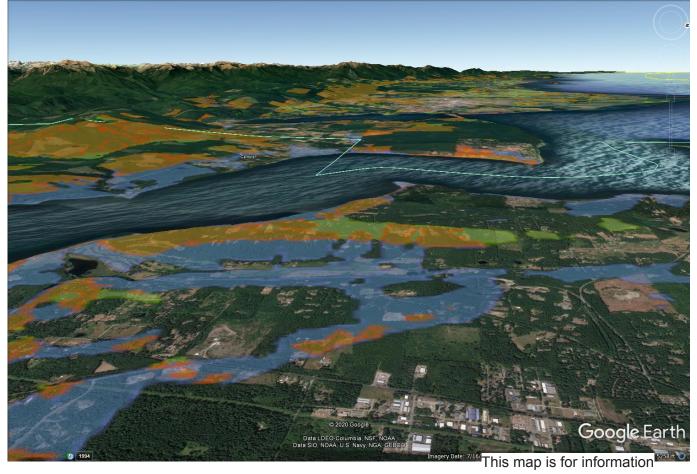
Areas of Highest Visibility Main Roads and ODT This map is for information Main Roads purposes only. It does not indicate ODT Building Footprints organizational priorities or projects. Public Lands

Viewshed Results

Highly visible areas on private land with building footprints



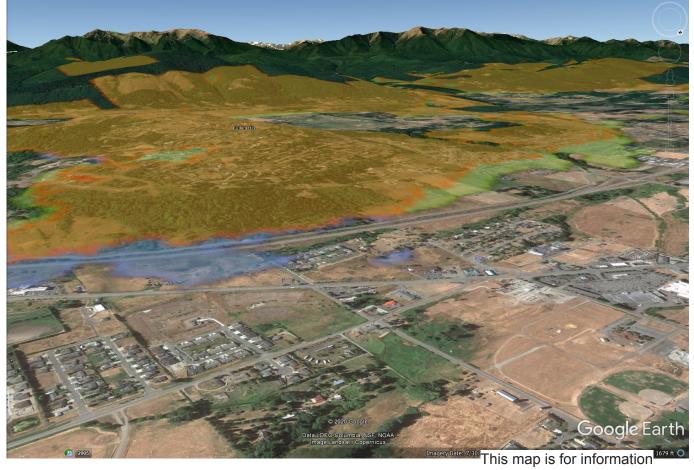
Highly visible areas in Google Earth



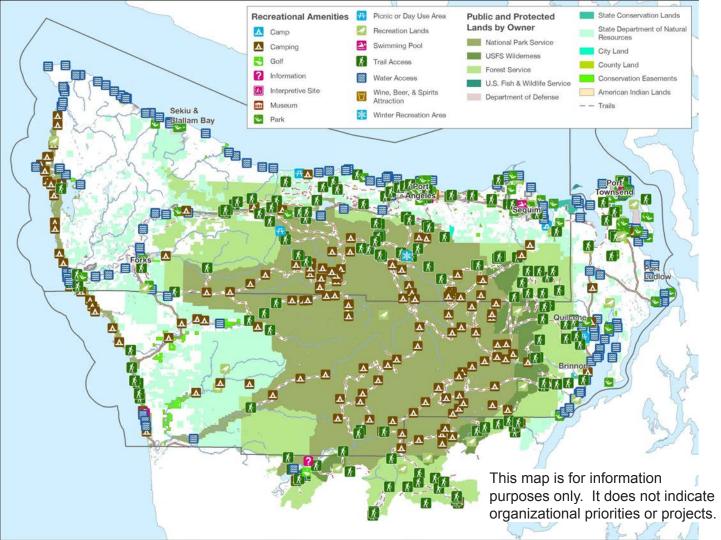
Highly visible areas in Google Earth



Highly visible areas in Google Earth



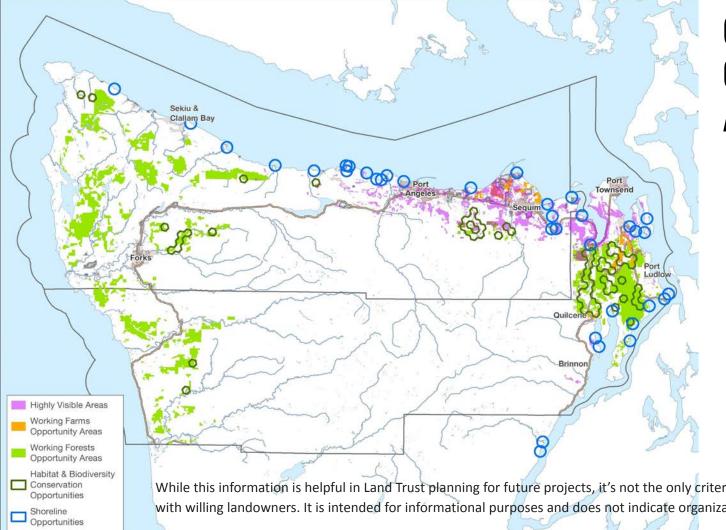
Highly visible areas in Google Earth



Recreational Amenities

This map shows the distribution of recreational facilities, trails, museums, and other attractions

These data were compiled by Washington Hometown and donated to NOLT & JLT



Combining All Opportunity Areas

- Shoreline and Habitats
- **Working Forests**
- Working Farms
- Viewsheds

While this information is helpful in Land Trust planning for future projects, it's not the only criteria we use, and we only work with willing landowners. It is intended for informational purposes and does not indicate organizational priorities or projects.