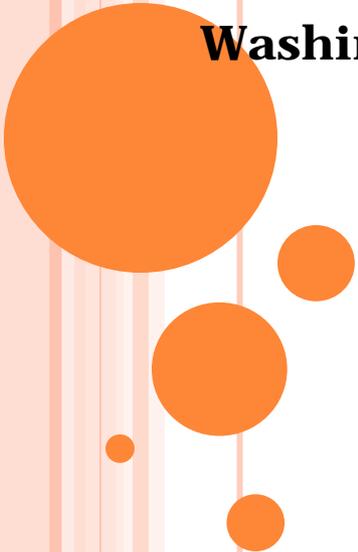


USDA NATURAL RESOURCES CONSERVATION SERVICE

Washington State Resource Assessment 2011



Washington State Resource Assessment 2011

- This statewide natural resource concern assessment project was initiated by a **National NRCS Directive** issued to all states on February 1st, 2011. The final products were to be completed and delivered by June 1st, 2011.
- The directive states that the State Resource Assessments will be used to assist national, regional and state leadership, including State Technical Committees, to establish priorities, achieve natural resource objectives, and improve agency technical and financial resources.

It goes on to say that the State Resource Assessments will provide critical information for resource-based performance planning, workforce planning, and budget and allocation formulation.

- The directive requires the following products:
 - A completed State Resource Concern Priorities worksheet
 - A geodatabase that spatially locates the worksheet's identified resource concerns.

Washington State Resource Assessment 2011

- Upon receipt of the directive, Washington State NRCS formed an inter-disciplinary team of NRCS State and Area resource specialists to begin addressing the directive.
- This included developing appropriate geospatial data, and providing additional maps and reports of resource information to assist the NRCS Areas in identifying their top resource concerns.
- The final National guidance and instruction was issued on April 1st, 2011. This included the Resource Concern Priorities worksheet.

The worksheet requires NRCS to address resource concerns on five landuse categories:

- Crop
- Range
- Pasture
- Forest
- Other Associated Ag Land

Washington State Resource Assessment 2011

- There are nine Major Resource Concerns in the worksheet. These are subdivided into thirty-one more specific Natural Resource Concerns.
- These thirty-one resource concerns are broad enough to provide the opportunity to address any natural resource concern on the identified landuses.

Acreages are to be determined for:

- Lands Potentially At Risk
- At Risk Lands Needing Treatment
- Priority Treatment Lands
- Priority Rankings are to be designated for each resource concern on a landuse.

The worksheet is replicated in the geodatabase. Below are the definitions of the four required data entry items:

- **Potential At Risk Acres** - land that is at risk or vulnerable to the resource concern regardless of whether conservation treatment has been applied and maintained.
- **Acres Needing Treatment** - the extent of the land that has not been treated for the resource concern according to FOTG criteria.
- **Priority Rank** - the priority value assigned to the resource concerns identified within each land use where a ranking of "1" = the highest priority resource concern for that land use. Resource concerns are to be ranked independently within each land use category (for example crop resource concerns 1-9; range resource concerns 1-9).
- **Priority Treatment Acres** - the land use acres identified for treatment for a specific resource concern during the 3 year period from FY 2012 through FY 2014.

Washington State Resource Assessment 2011

- The Resource Concern Priorities worksheet was distributed to each of the three NRCS Areas to begin identifying and prioritizing their top resource concerns.
- This NRCS Area identification and prioritization was based on the previous work completed in 2009 and 2010 through the Local Work Group (LWG) process and the NRCS State Resource Inventory.
- The NRCS Area worksheets were returned to the State Office where the identified Area resource concern priorities were compared, evaluated and ranked into State priorities.

The State worksheet was finalized on April 22nd, 2011, identifying **twenty-five state priorities**. The other NRCS Area priorities not on this state list are now documented and available for future use.

- At this point, the process of locating the spatial extent of the State Resource Concern Priority Areas was initiated.

Washington State Resource Assessment 2011

- The Resource Concern Priority Areas geospatial product is meant for use at the state and national level.
- Because of this, and the compressed timeline for completion (four weeks), the Priority Areas are relatively broad and general, and should be considered Statewide, or Area-wide, planning level data.
- The completed geospatial Priority Areas bound and group portions of the five NRCS landuse categories. The wide distribution of certain landuse categories and/or resource concerns necessitates large, general Priority Areas in some cases.

The acreages in the completed state worksheet are **estimates**, and have been purposely rounded so that there is no indication of precision.

- The acreage estimates are either based on the best available geospatial data, or local NRCS resource specialist knowledge.

Washington State Resource Assessment 2011

Below are the **landuse** datasets used to locate the five NRCS landuse categories. The NRCS target area is **non-urban private and tribal lands**.

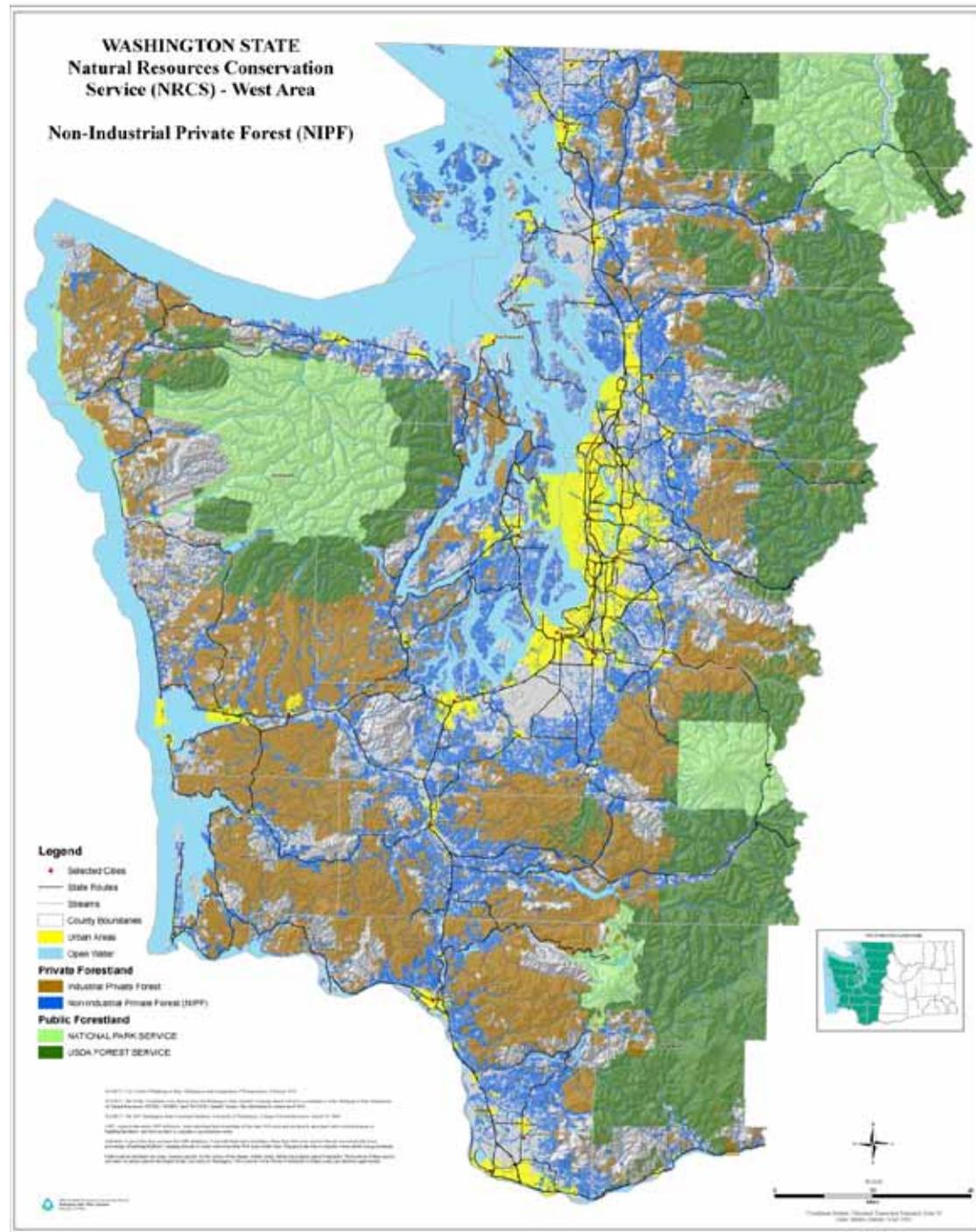
- **2010 USGS GAP Analysis Project (GAP) Landuse** – This raster dataset was vectorized and intersected with our version of the WDNR Public Lands dataset (this includes private lands). It was then reclassified into fourteen NRCS Primary Landuse Designations. This data was used to locate **Pasture and Range**.

2010 Washington State Department of Agriculture Croplands – This data was used for **Irrigated and Non-irrigated Cropland**.

- **2007 UW-College of Forest Resources/Rural Technology Institute Private Forestlands Database (parcels)** – This was used for **private Forest**. Private forest ownership for this assessment was based on all Tribal forest, all Non-Industrial Private Forest (NIPF), and participants in the non-industrial portion of the Designated Forest Land (DFL) program.

Washington State Resource Assessment 2011

The West Area **Non-Industrial Private Forestland (NIPF)** Map – Includes Industrial Private Forestland, Urban Areas and Public Parks and Forests.



Washington State Resource Assessment 2011

Below are the geospatial datasets used as **resource concern indicators**. It should be noted that these datasets only indicate the **potential** or **probability** for the resource concern to be present on the landuse.

- **NRCS Statewide Soil Survey derivatives:**

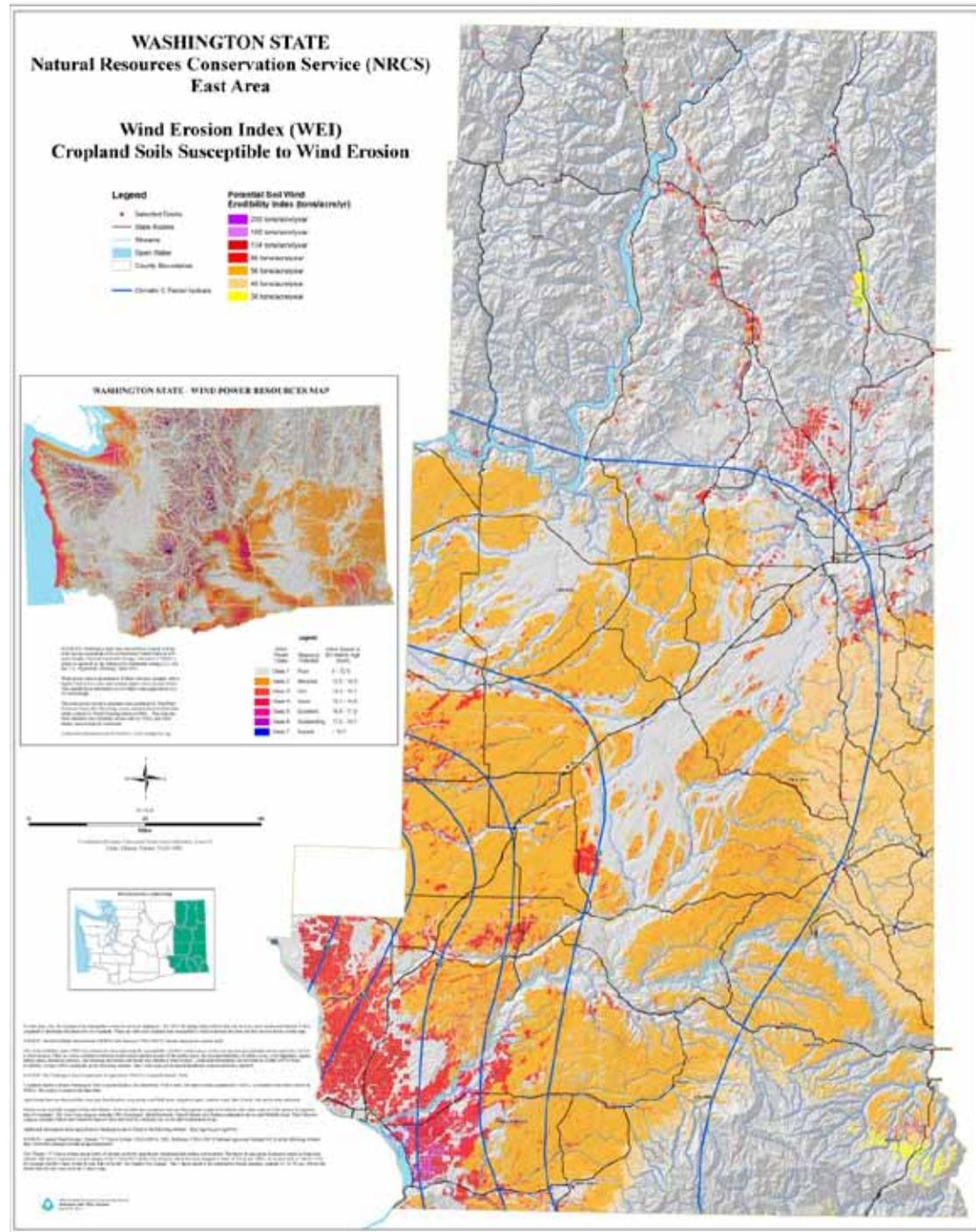
- Wind Erodibility Index - cropland
- Sheet and Rill Erosion Risk - cropland
- Compaction Resistance - pasture

NRCS Climatic C Factor isobars – index of climatic erosivity, specifically wind speed and soil moisture - cropland

- **NRCS Range Similarity Index** – Reclassification of the 2010 GAP Rangeland. Indicates Range condition and impacts by noxious and invasive species - range

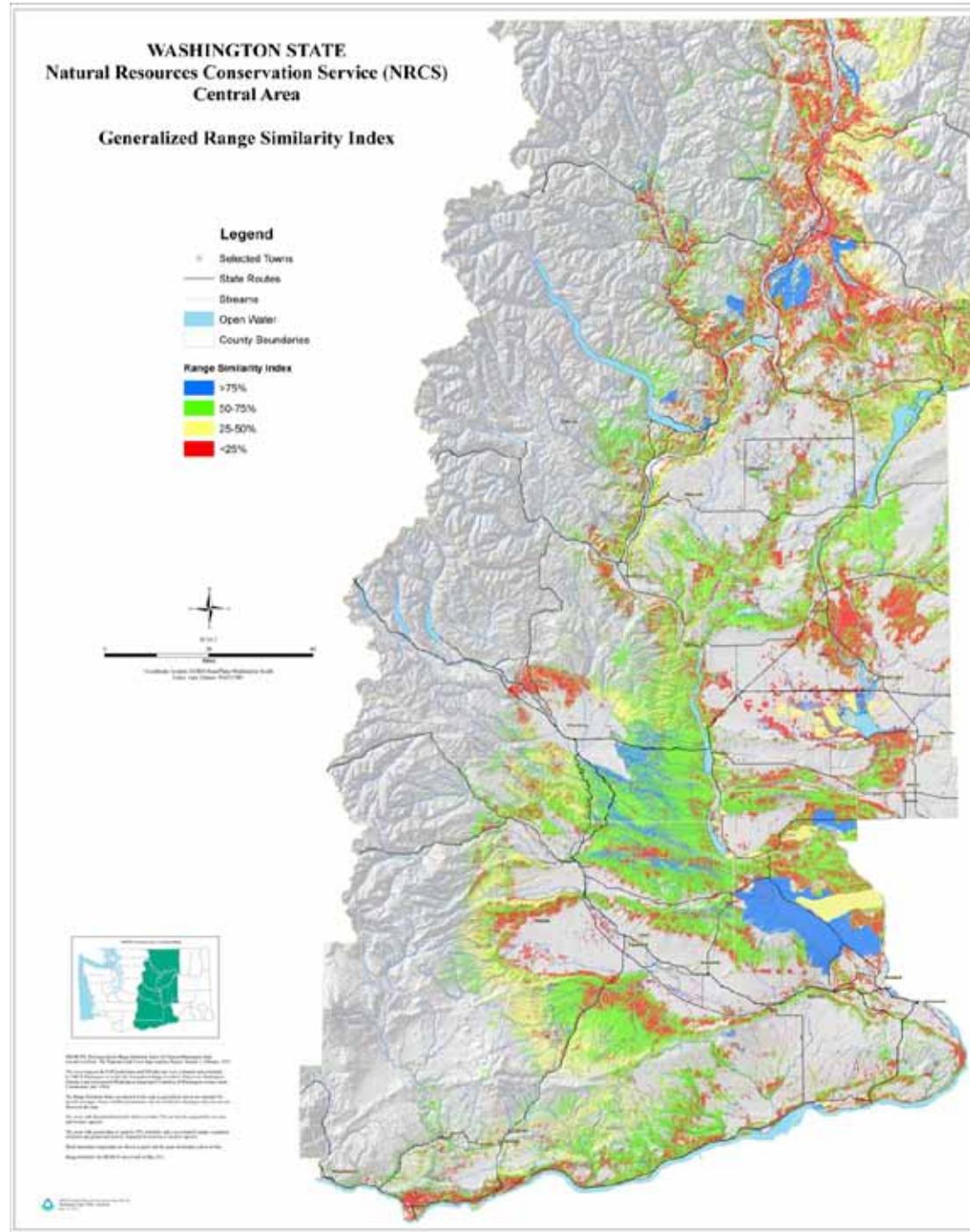
Washington State Resource Assessment 2011

The East Area NRCS
**Cropland Soils
Susceptible to Wind
Erosion Map** – Soil
Survey Wind Erosion
Index, WSDA
Croplands, and the
NRCS Climatic C
Factor isobars.



Washington State Resource Assessment 2011

The Central Area
**NRCS Range
Similarity Map** –
reclassified from the
2010 GAP Landuse
dataset



Washington State Resource Assessment 2011

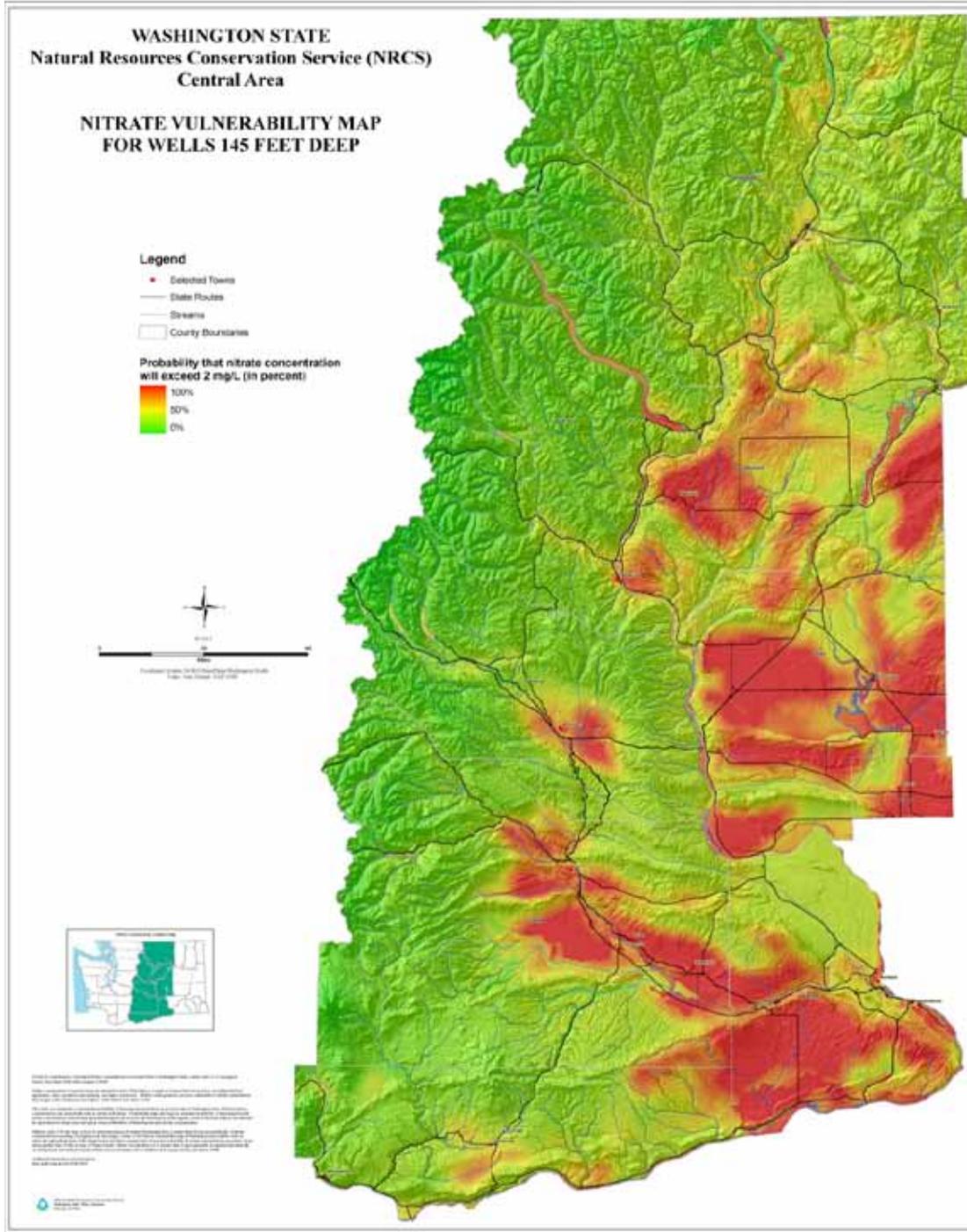
- **Washington State Department of Natural Resources (WDNR) and US Forest Service (USFS) Forest Damage Aerial Detection Survey 1980-2009 (Bugs and Crud).** Tree mortality due to disease, insects and animals. Used a subset of the data for the 1999-2009 period - forest
- **US Geological Survey (USGS) Distribution of Elevated Nitrate Concentrations in Ground Water in Washington State 2008 –** Nitrate concentration probability areas – cropland, pasture

US Forest Service (USFS) Fire Regime Condition Class (LANDFIRE) – landscape scale fire, ecosystem, and fuel assessment – forest

- **Washington State Department of Ecology (WDOE) Dairy Farms 2003** - locations of dairy farms in Washington State that are holders of a Milk Producers License issued by Washington State's Department of Agriculture – cropland, pasture, other associated ag lands

Washington State Resource Assessment 2011

The Central Area Nitrate Vulnerability Map



Washington State Resource Assessment 2011

- **Farm Service Agency (FSA) Conservation Reserve Enhancement Program (CREP) Streams** - spatial segments of fish bearing streams eligible for conservation enhancement - pasture, other associated ag lands
- **NRCS Sage Grouse Focus Areas and NRCS Sage Grouse Potential Connectivity Area** – range
- **Washington State Department of Agriculture (WSDA) Croplands Subsets** - Various Cropland type subsets in combination with, or proximity to, other natural features or resource concern indicators – croplands, other associated ag lands
 - Example: WSDA Center Pivot Irrigation intersected with Farm Service Agency Common Land Unit (CLU) fields to model idle center pivot corners – other associated ag lands
- Where no geospatial indicator datasets existed for a particular resource concern/landuse combination, the local knowledge and expertise of the NRCS Area specialists was used to identify the Priority Area.

Washington State Resource Assessment 2011

- Each NRCS Area had its own requirements for the development of their Priority Areas. Some were very specific.
- This necessitated developing the twenty-five State Priority Areas on an NRCS Area basis and then merging the common Resource Concern Priority Areas into a statewide feature.
- This meant that there were forty separate Priority Areas initially developed, each a combination of a landuse and a resource concern:
 - East Area – 11
 - Central Area – 25
 - West Area – 14

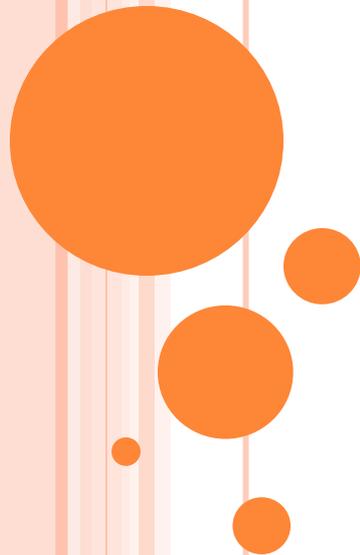
• At various stages of the development process, the NRCS Area specialists were consulted and provided guidance as to their intent for the Priority Areas.

- Below are maps showing the distribution of the final Resource Concern Priority Areas. They are displayed by landuse.

CROP

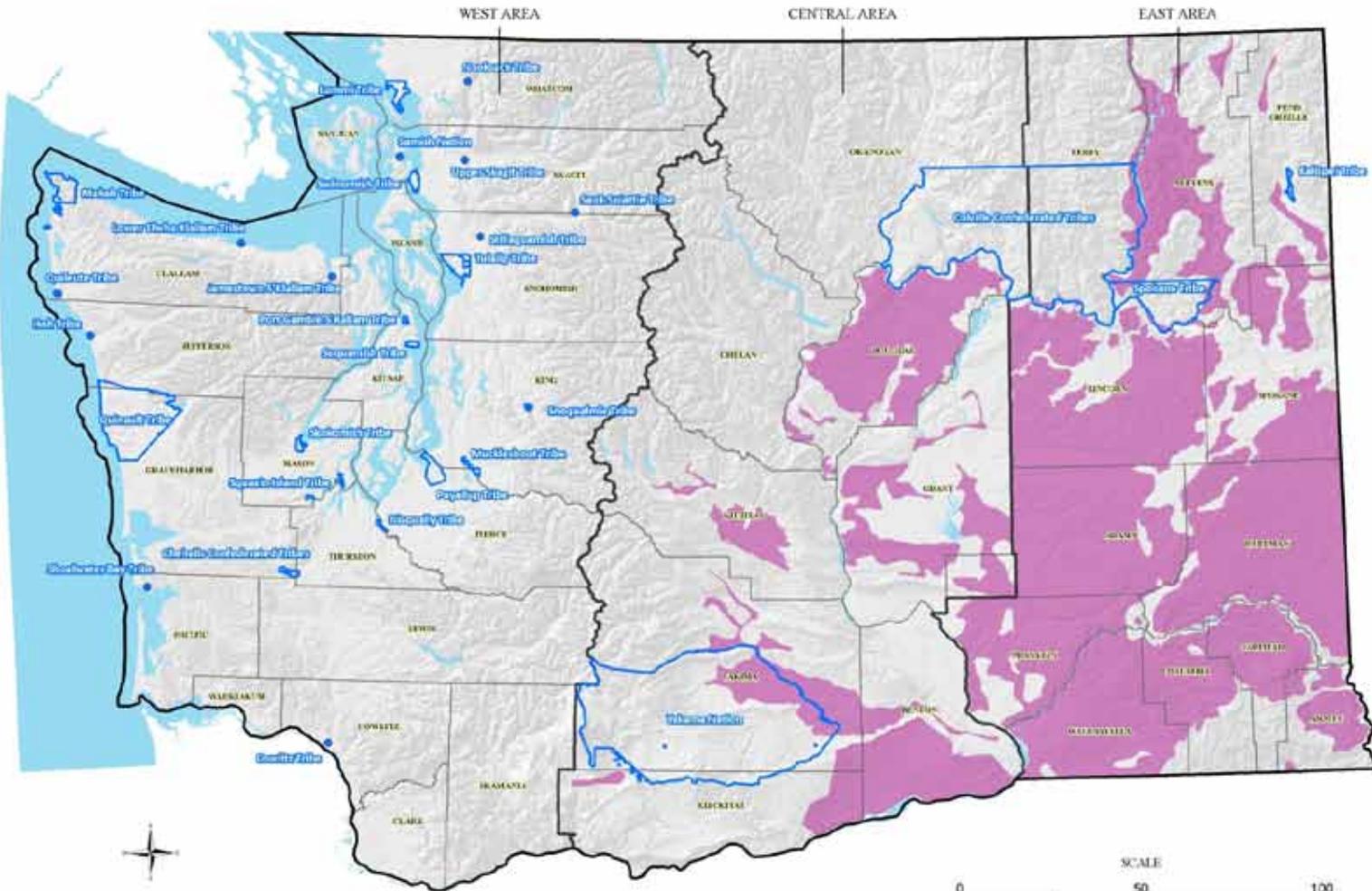
NRCS Land Use Definitions

Crop - Land used primarily for the production and harvest of annual or perennial field, forage, food, fiber, horticultural and/or energy crops.



CROP – SHEET, RILL AND WIND EROSION

NRCS Washington State Resource Assessment 2011



USDA
NATURAL RESOURCES
CONSERVATION
SERVICE (NRCS)

RESOURCE CONCERN
PRIORITY TREATMENT
AREA

NRCS LANDUSE:
Crop

RESOURCE CONCERN:
Soil Erosion

Sheet, Rill, and
Wind Erosion

Legend

- Tribal Locations
- ▭ Tribal Boundaries
- ▭ Resource Concern Priority Areas
- ▭ NRCS Area Boundaries
- ▭ County Boundaries
- ▭ Open Water

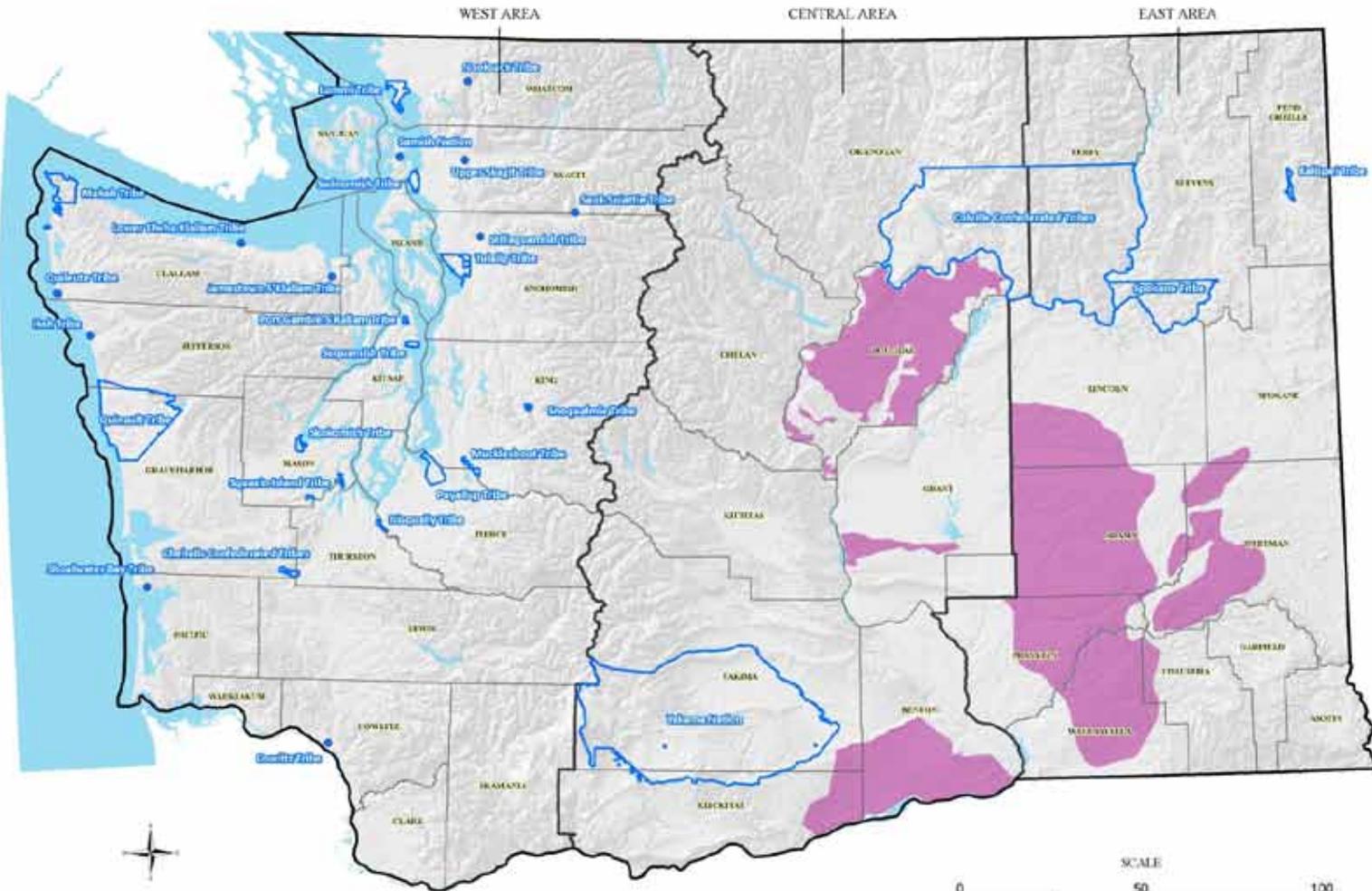


Coordinate System: HARN StatePlane Washington South
Units: Feet, Datum: NAD 1983



CROP – WIND EROSION ONLY

NRCS Washington State Resource Assessment 2011



USDA
NATURAL RESOURCES
CONSERVATION
SERVICE (NRCS)

RESOURCE CONCERN
PRIORITY TREATMENT
AREA

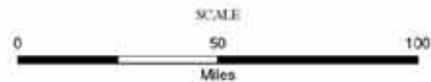
NRCS LANDUSE:
Crop

RESOURCE CONCERN:
Soil Erosion

Wind Erosion

Legend

- Tribal Locations
- ▭ Tribal Boundaries
- ▭ Resource Concern Priority Areas
- ▭ NRCS Area Boundaries
- ▭ County Boundaries
- ▭ Open Water

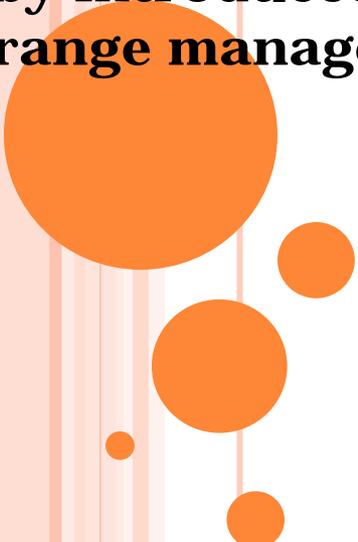


Coordinate System: HARN StatePlane Washington South
Units: Feet, Datum: NAD 1983

RANGE

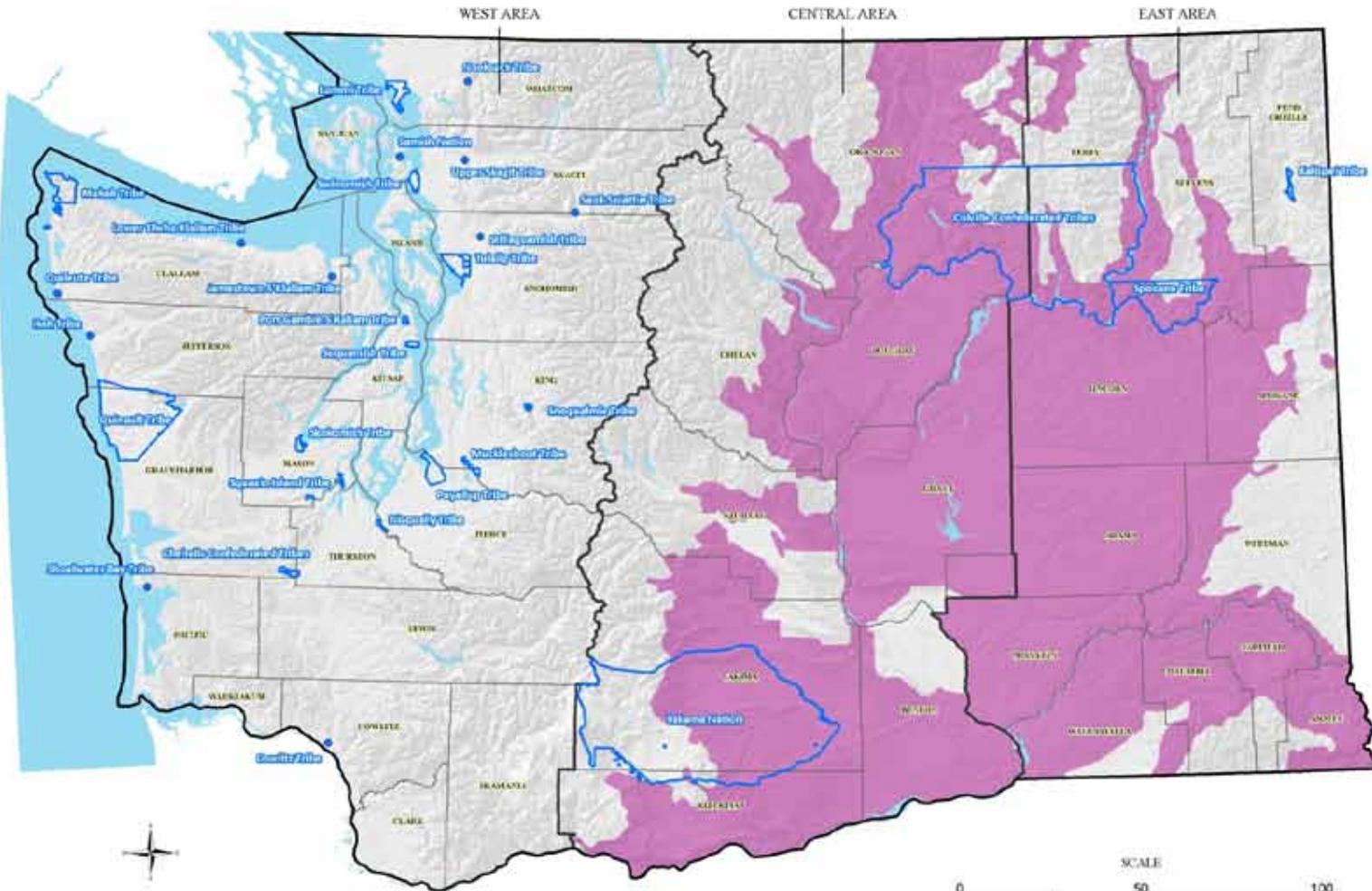
NRCS Land Use Definitions

Range - Land used primarily for the production of grazing animals and wildlife. Includes native plant communities and those seeded to native or introduced species, or naturalized by introduced species, that are ecologically managed using range management principles.



RANGE – UNDESIRABLE PLANT PRODUCTIVITY AND HEALTH

NRCS Washington State Resource Assessment 2011



USDA
NATURAL RESOURCES
CONSERVATION
SERVICE (NRCS)

RESOURCE CONCERN
PRIORITY TREATMENT
AREA

NRCS LANDUSE:
Range

RESOURCE CONCERN:
Degraded Plant
Condition:

Undesirable Plant
Productivity and Health

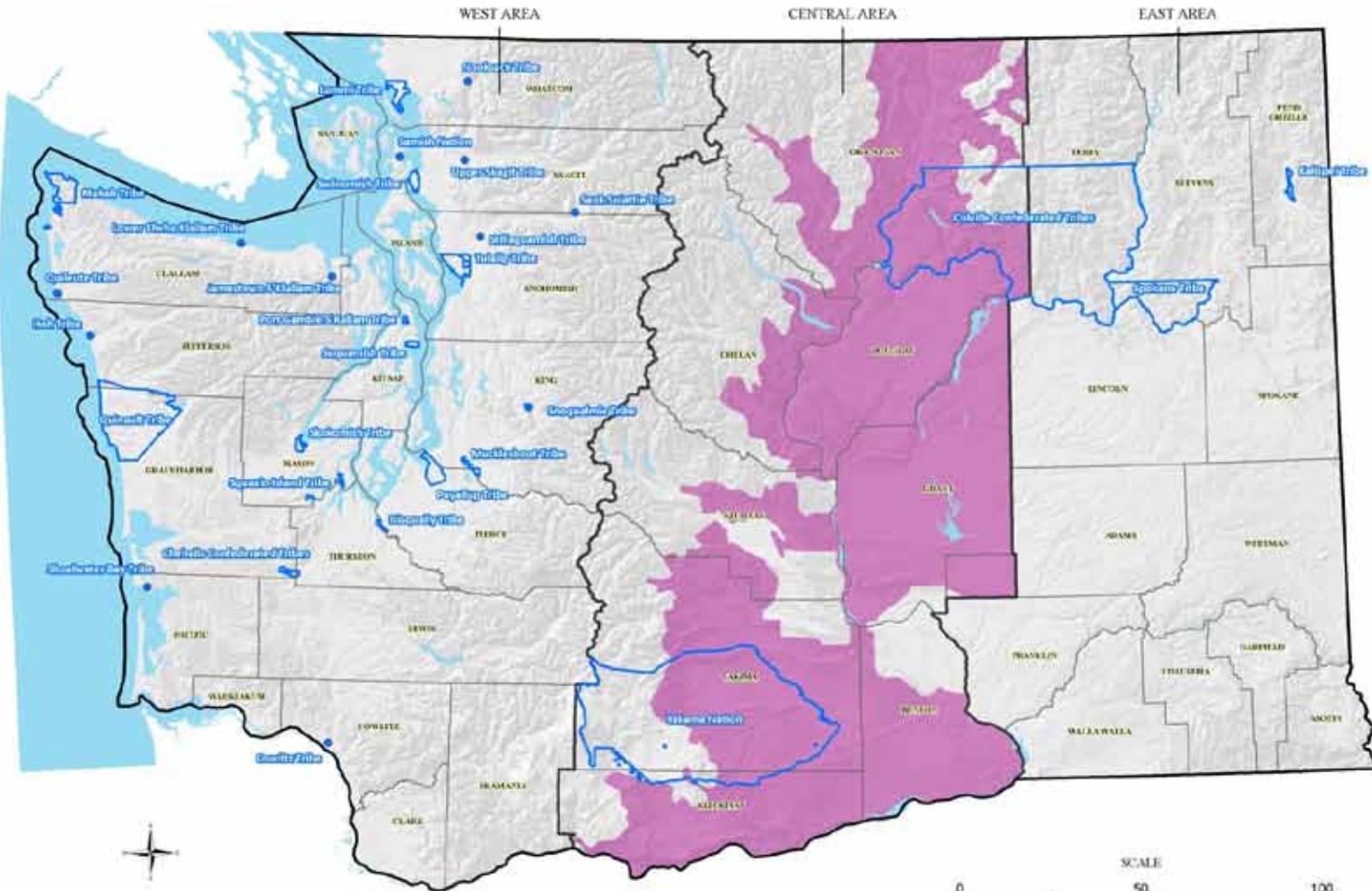
Legend

- Tribal Locations
- ▭ Tribal Boundaries
- ▭ Resource Concern Priority Areas
- ▭ NRCS Area Boundaries
- ▭ County Boundaries
- ▭ Open Water

SCALE
0 50 100
Miles
Coordinate System: HARN StatePlane Washington South
Units: Feet, Datum: NAD 1983

RANGE – INADEQUATE STRUCTURE AND COMPOSITION

NRCS Washington State Resource Assessment 2011



USDA
NATURAL RESOURCES
CONSERVATION
SERVICE (NRCS)

RESOURCE CONCERN
PRIORITY TREATMENT
AREA

NRCS LANDUSE:
Range

RESOURCE CONCERN:
Degraded Plant
Condition:

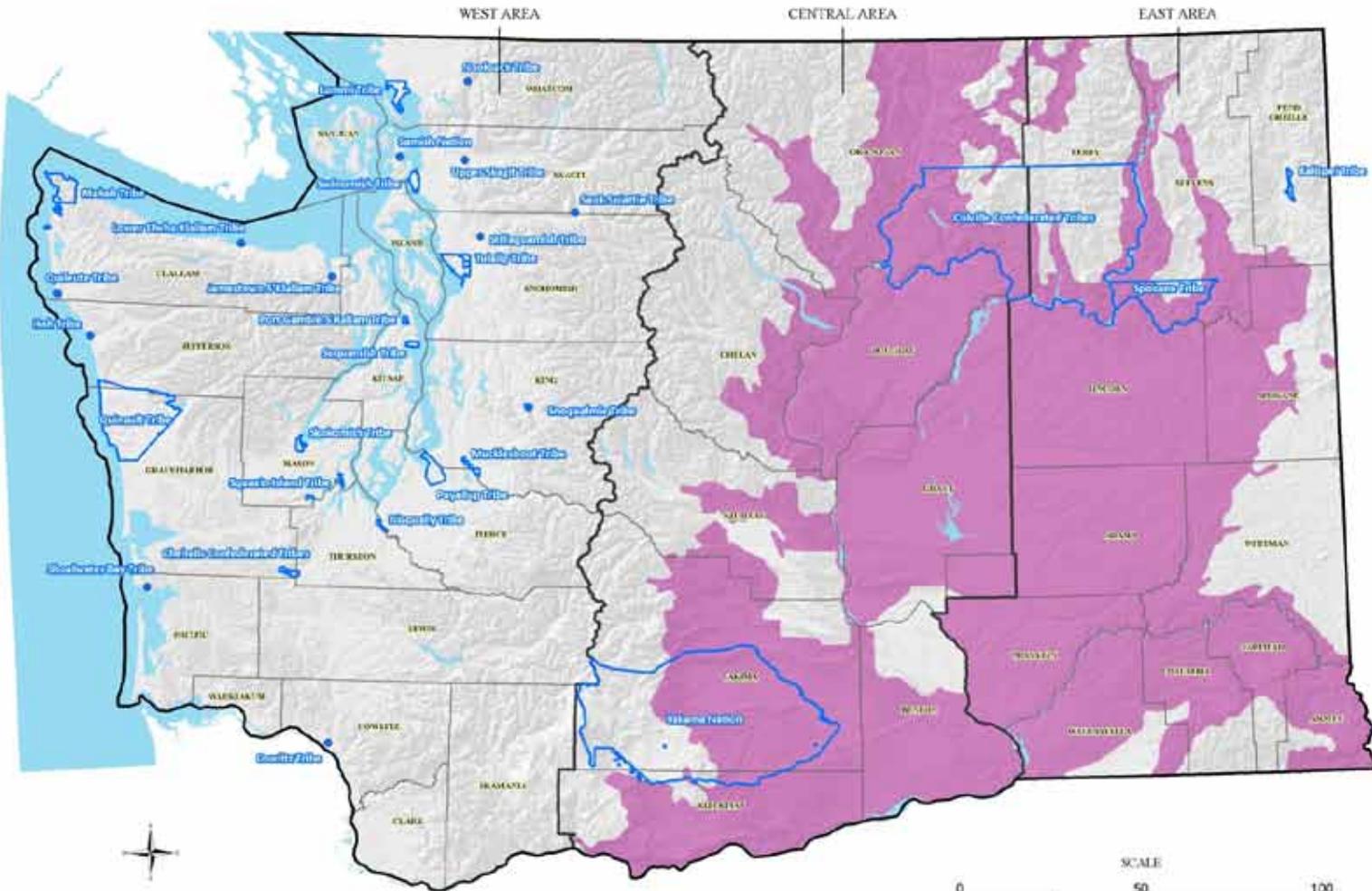
Inadequate Structure
and Composition

Legend

- Tribal Locations
- ▭ Tribal Boundaries
- ▭ Resource Concern Priority Areas
- ▭ NRCS Area Boundaries
- ▭ County Boundaries
- ▭ Open Water

RANGE – EXCESSIVE PLANT PEST PRESSURE

NRCS Washington State Resource Assessment 2011



USDA
NATURAL RESOURCES
CONSERVATION
SERVICE (NRCS)

RESOURCE CONCERN
PRIORITY TREATMENT
AREA

NRCS LANDUSE:
Range

RESOURCE CONCERN:
Degraded Plant
Condition:

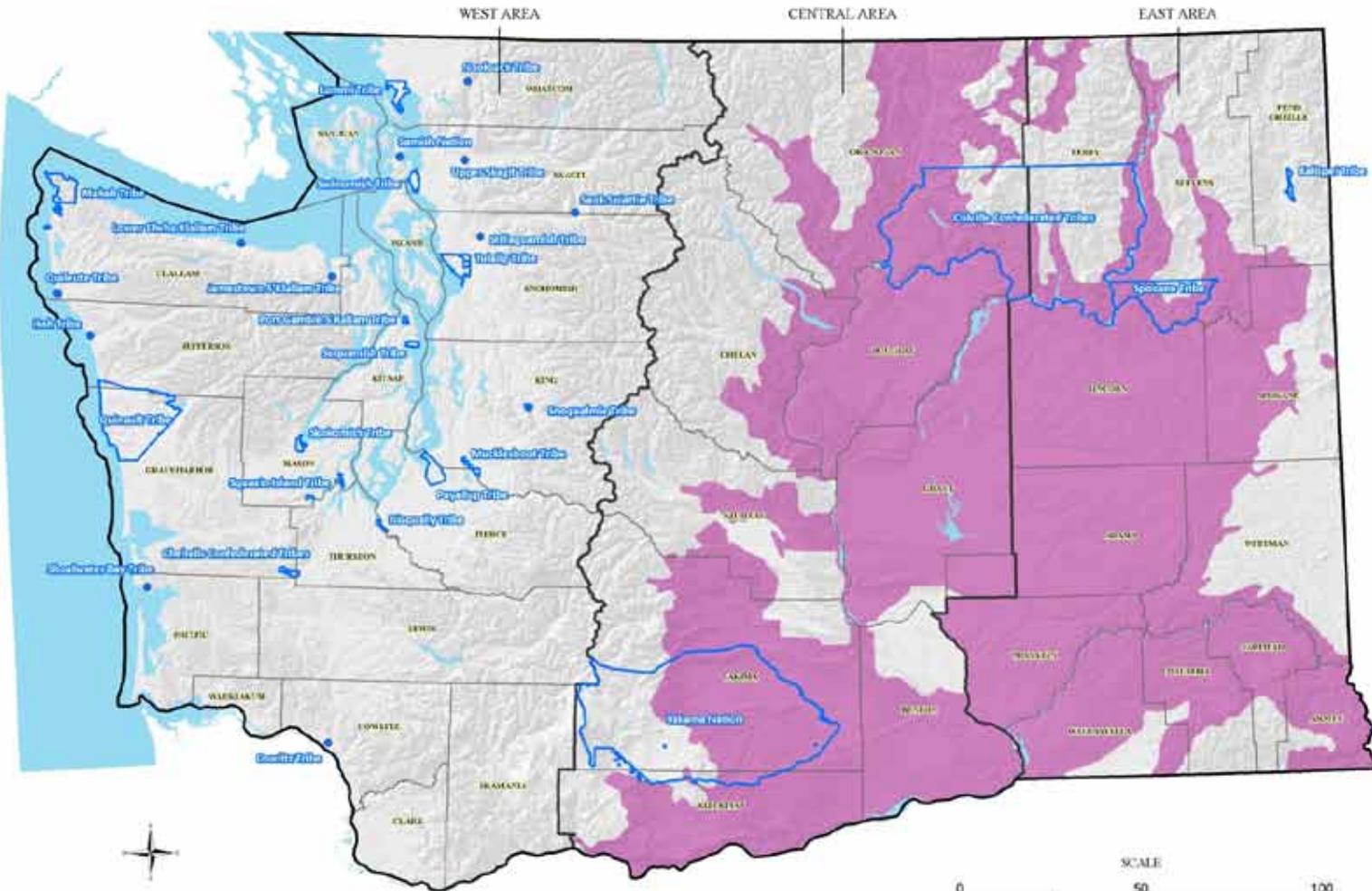
Excessive Plant
Pest Pressure

Legend

- Tribal Locations
- ▭ Tribal Boundaries
- ▭ Resource Concern Priority Areas
- ▭ NRCS Area Boundaries
- ▭ County Boundaries
- ▭ Open Water

RANGE – INADEQUATE LIVESTOCK WATER

NRCS Washington State Resource Assessment 2011



USDA
NATURAL RESOURCES
CONSERVATION
SERVICE (NRCS)

RESOURCE CONCERN
PRIORITY TREATMENT
AREA

NRCS LANDUSE:
Range

RESOURCE CONCERN:
Livestock Production
Limitation:

Inadequate Livestock
Water

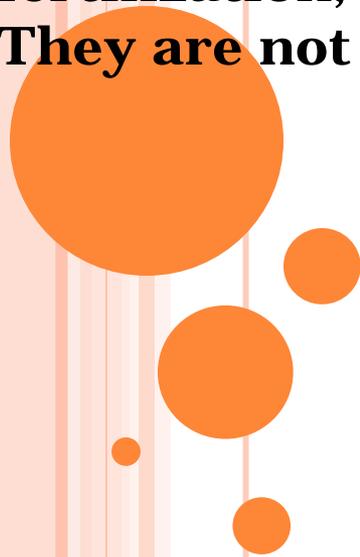
Legend

- Tribal Locations
- ▭ Tribal Boundaries
- ▭ Resource Concern Priority Areas
- ▭ NRCS Area Boundaries
- ▭ County Boundaries
- ▭ Open Water

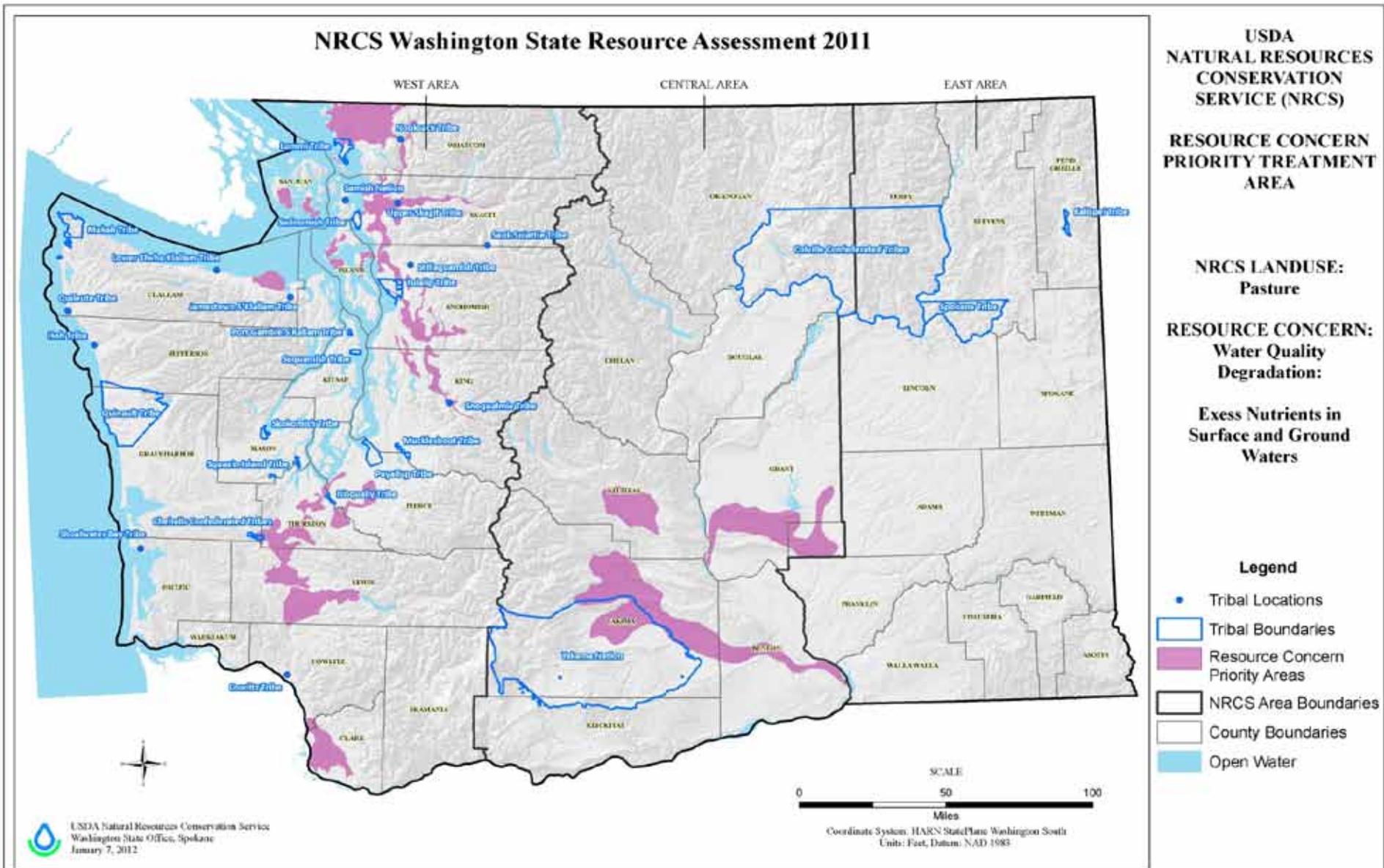
PASTURE

NRCS Land Use Definitions

Pasture - Lands compose of introduced or domesticated native forage species that is used primarily for the production of domestic livestock. They receive periodic renovation and/or cultural treatments, such as tillage, fertilization, mowing, weed control, and may be irrigated. They are not in rotation with crops.

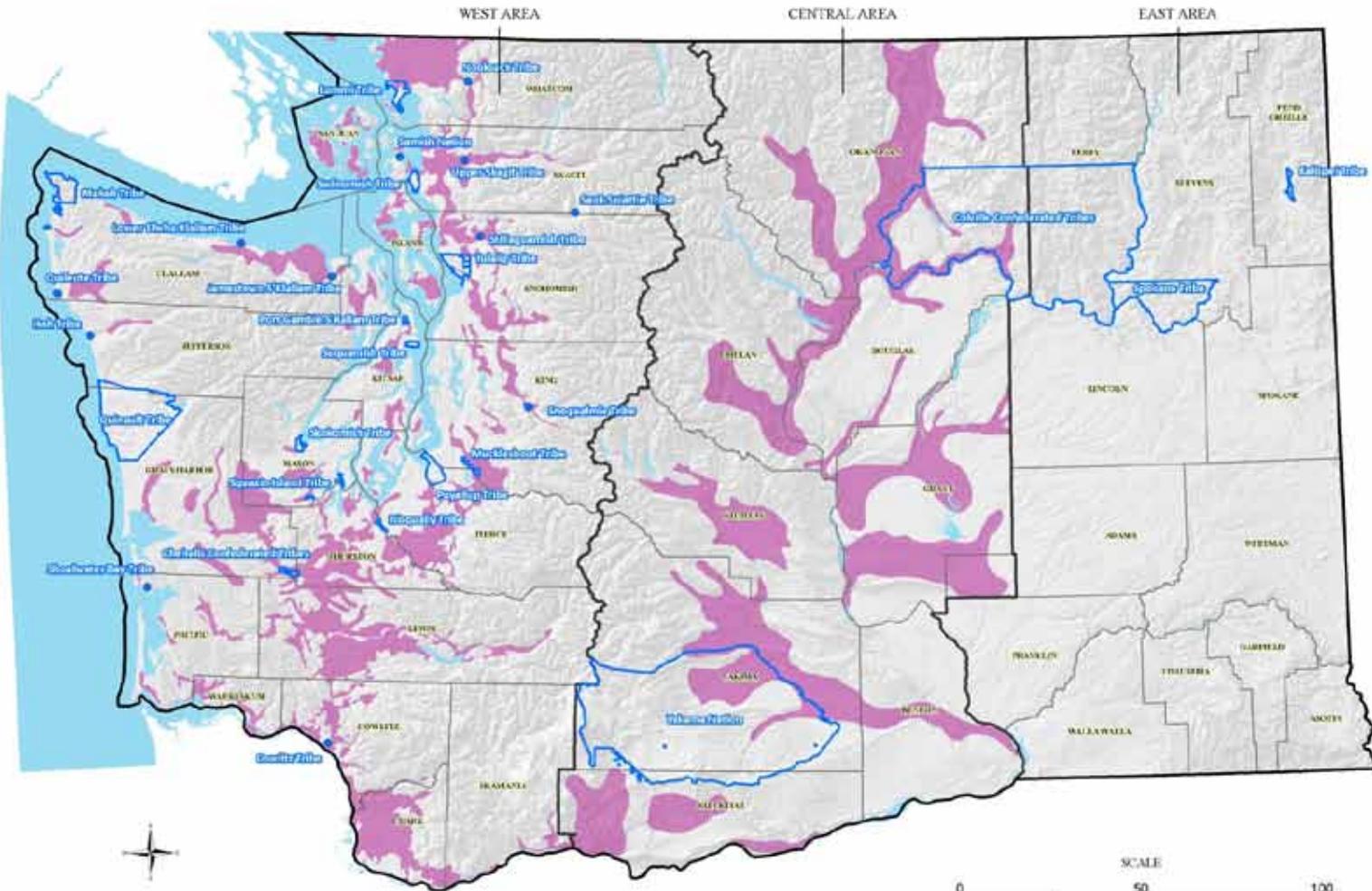


PASTURE – EXCESS NUTRIENTS IN SURFACE AND GROUND WATERS



PASTURE – HABITAT DEGRADATION

NRCS Washington State Resource Assessment 2011



USDA
NATURAL RESOURCES
CONSERVATION
SERVICE (NRCS)

RESOURCE CONCERN
PRIORITY TREATMENT
AREA

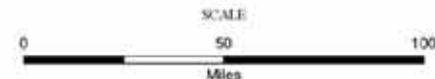
NRCS LANDUSE:
Pasture

RESOURCE CONCERN:
Inadequate Habitat for
Fish and Wildlife:

Habitat Degradation

Legend

- Tribal Locations
- ▭ Tribal Boundaries
- ▭ Resource Concern Priority Areas
- ▭ NRCS Area Boundaries
- ▭ County Boundaries
- ▭ Open Water



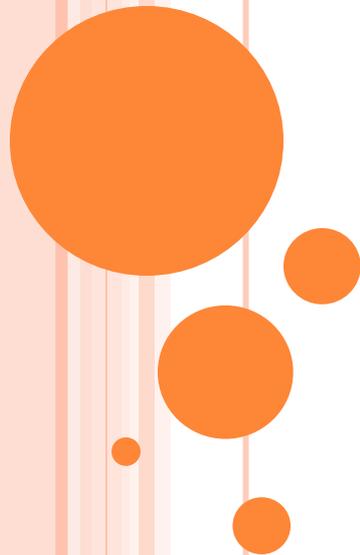
Coordinate System: HARN StatePlane Washington South
Units: Feet, Datum: NAD 1983



FOREST

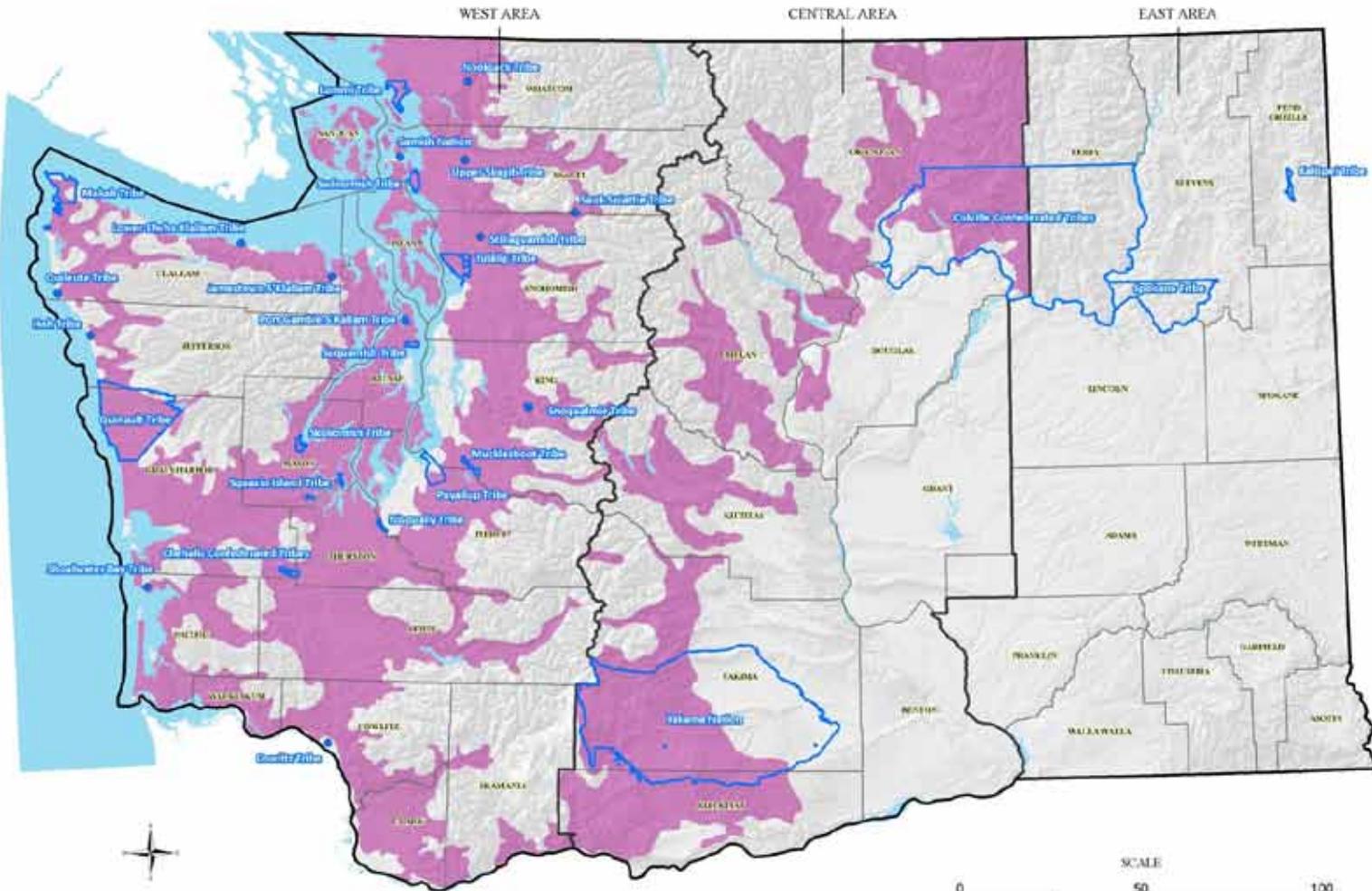
NRCS Land Use Definitions

Forest - Land on which the primary vegetation is forest (climax, natural or introduced plant community) and use is primarily for production of wood products and/or non-timber forest products.



FOREST – EXCESSIVE SEDIMENT IN SURFACE WATERS

NRCS Washington State Resource Assessment 2011



USDA
NATURAL RESOURCES
CONSERVATION
SERVICE (NRCS)

RESOURCE CONCERN
PRIORITY TREATMENT
AREA

NRCS LANDUSE:
Forest

RESOURCE CONCERN:
Water Quality
Degradation:

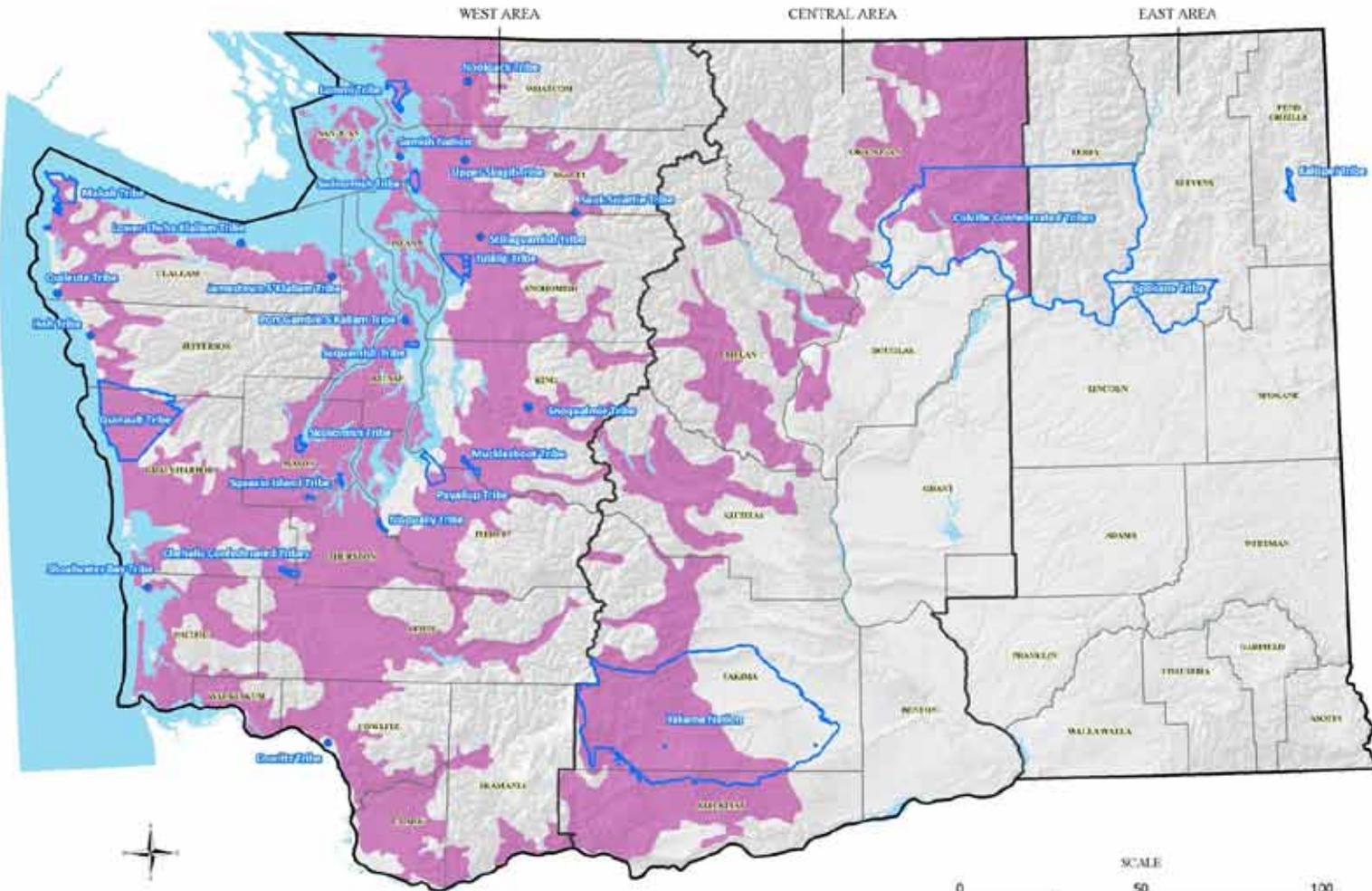
Excessive Sediment in
Surface Waters

Legend

- Tribal Locations
- ▭ Tribal Boundaries
- ▭ Resource Concern Priority Areas
- ▭ NRCS Area Boundaries
- ▭ County Boundaries
- ▭ Open Water

FOREST – HABITAT DEGRADATION

NRCS Washington State Resource Assessment 2011



USDA
NATURAL RESOURCES
CONSERVATION
SERVICE (NRCS)

RESOURCE CONCERN
PRIORITY TREATMENT
AREA

NRCS LANDUSE:
Forest

RESOURCE CONCERN:
Inadequate Habitat for
Fish and Wildlife:

Habitat Degradation

Legend

- Tribal Locations
- ▭ Tribal Boundaries
- ▭ Resource Concern Priority Areas
- ▭ NRCS Area Boundaries
- ▭ County Boundaries
- ▭ Open Water



OTHER ASSOCIATED AG LAND

NRCS Land Use Definitions

Other Associated Ag Land - Land associated with farms and ranches that are not purposefully managed for food, forage or fiber and are typically associated with nearby production and/or conservation lands.

This could include incidental areas such as: idle center pivot corners, odd areas, draws, hedgerows, riparian areas, field edges, seasonal and permanent wetlands, rocky outcrop, and other similar areas.

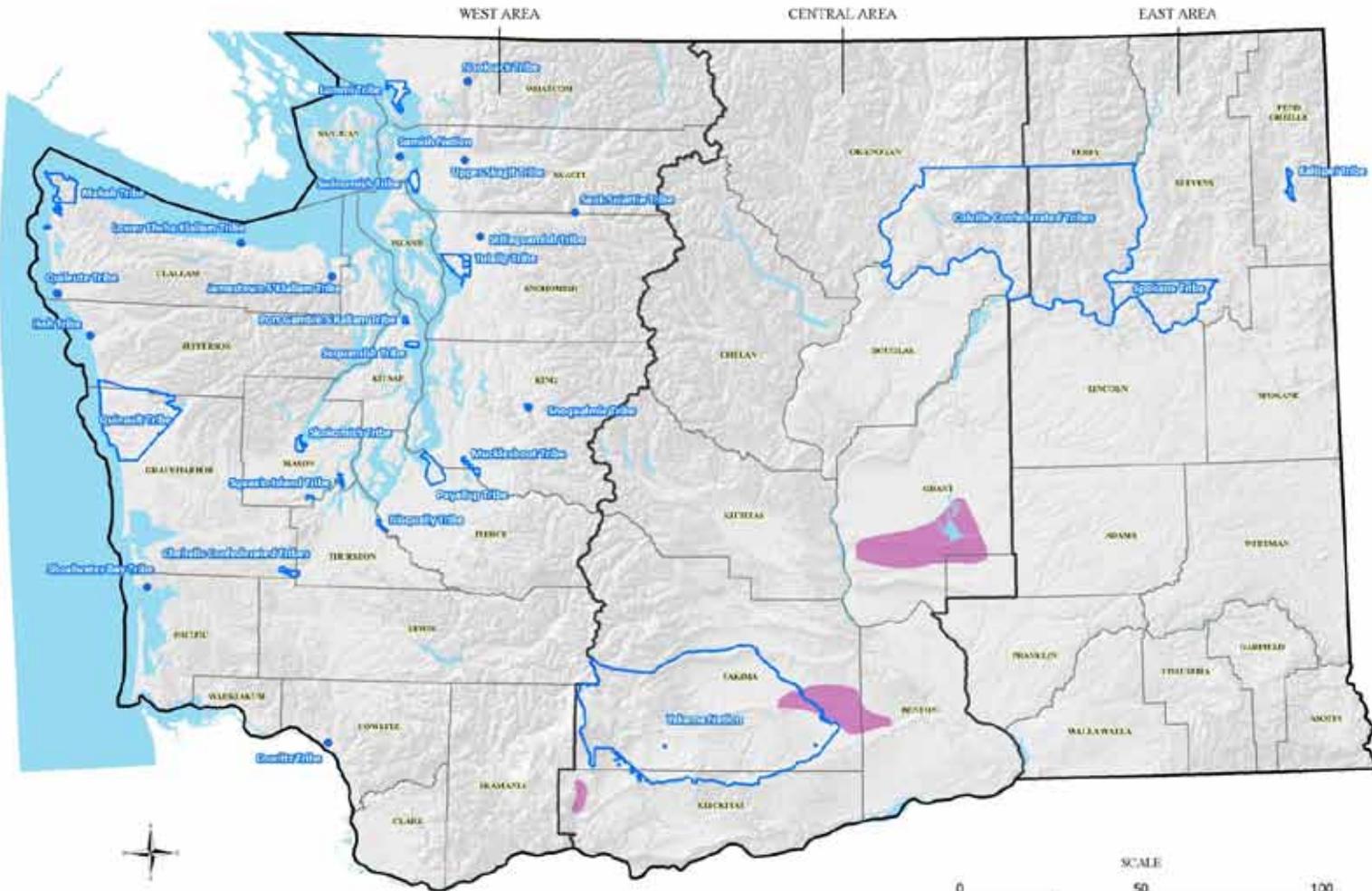
It also includes the headquarters area used for facilities and supporting infrastructure where farming, forestry, animal husbandry and ranching activities are often initiated. This may include dwellings, equipment storage plus farm input and output storage and handling facilities.

In addition land dedicated to the facilitation and production of high intensity animal agriculture in a confinement facility (Includes areas such as milking barns, holding lots, heavy use areas, waste treatment and storage facilities, composting facilities, feed mixing facilities, poultry houses, farrowing houses, fish production facilities and other equipment or feed storage facilities essential to the production of confined animals).

This may include land enrolled in USDA easement programs that is not used for the production of food, forage, or fiber.

OTHER ASSOCIATED AG LAND – EXCESS PATHOGENS AND CHEMICALS FROM MANURE, BIOSOLIDS OR COMPOST APPLICATIONS

NRCS Washington State Resource Assessment 2011



USDA
NATURAL RESOURCES
CONSERVATION
SERVICE (NRCS)

RESOURCE CONCERN
PRIORITY TREATMENT
AREA

NRCS LANDUSE:
Other Associated
Agriculture Lands

RESOURCE CONCERN:
Water Quality
Degradation:

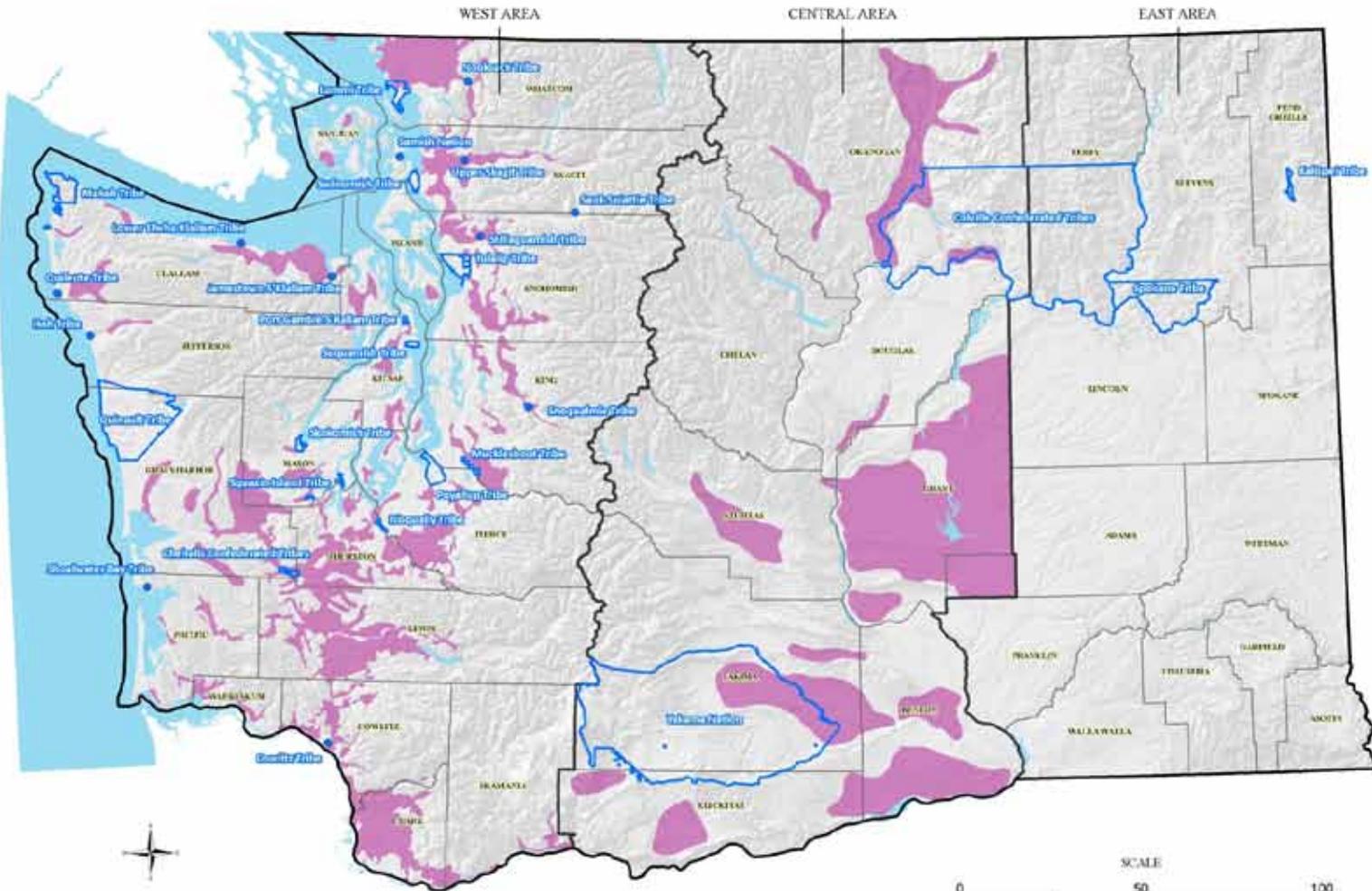
Excess Pathogens and
Chemicals from Manure,
Biosolids or Compost
Applications

Legend

- Tribal Locations
- ▭ Tribal Boundaries
- ▭ Resource Concern Priority Areas
- ▭ NRCS Area Boundaries
- ▭ County Boundaries
- ▭ Open Water

OTHER ASSOCIATED AG LAND – HABITAT DEGRADATION

NRCS Washington State Resource Assessment 2011



USDA
NATURAL RESOURCES
CONSERVATION
SERVICE (NRCS)

RESOURCE CONCERN
PRIORITY TREATMENT
AREA

NRCS LANDUSE:
Other Associated
Agriculture Lands

RESOURCE CONCERN:
Inadequate Habitat for
Fish and Wildlife:

Habitat Degradation

Legend

- Tribal Locations
- ▭ Tribal Boundaries
- ▭ Resource Concern Priority Areas
- ▭ NRCS Area Boundaries
- ▭ County Boundaries
- ▭ Open Water



PUGET SOUND CONSERVATION INITIATIVE (PSCI)

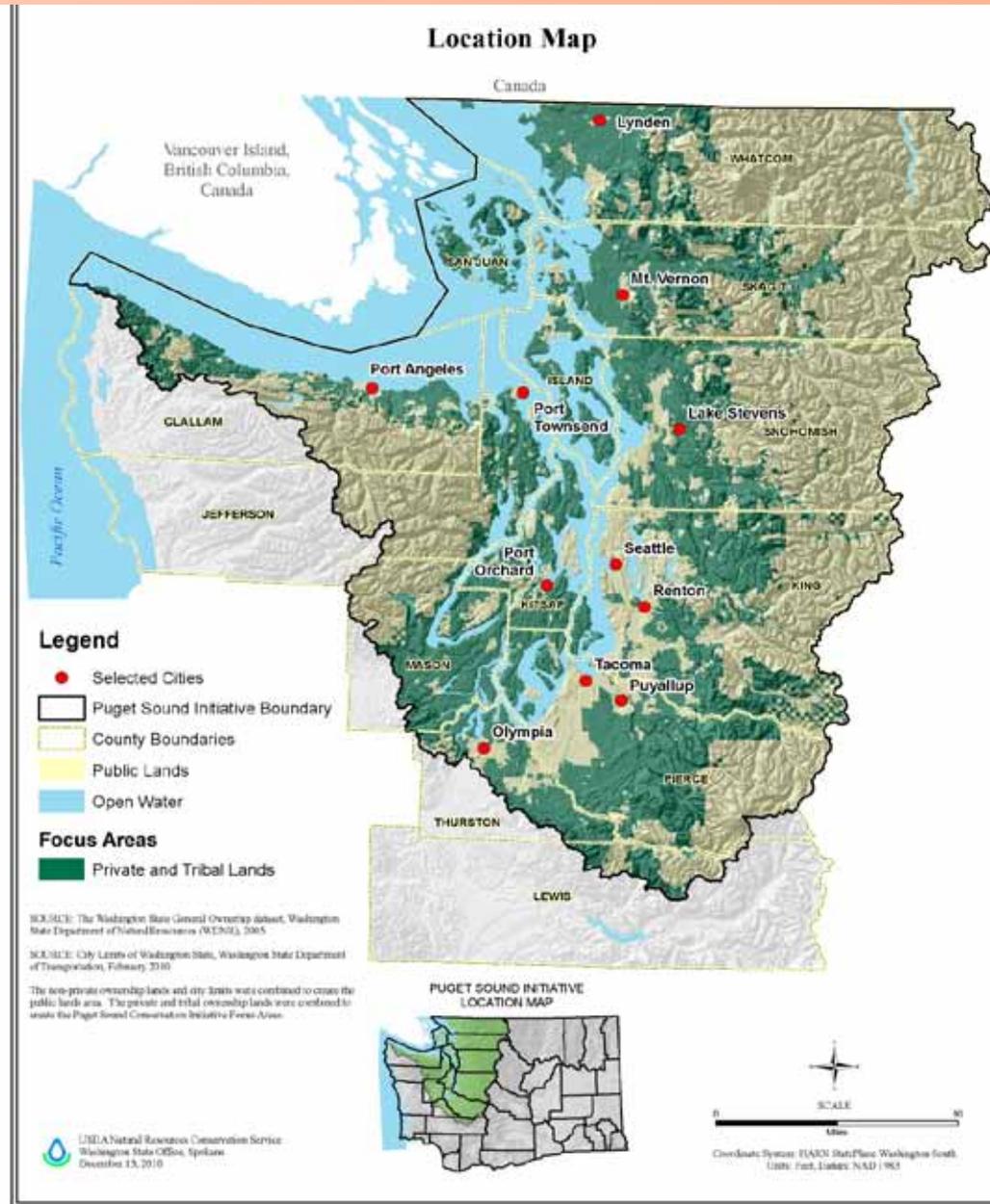
The Puget Sound Conservation Initiative proposal has requested funding over the next five years for NRCS financial incentives and easement programs to implement conservation practices on private and tribal lands in the Puget Sound Watershed. The PSCI focuses on land uses where the typical operation is located adjacent to surface water; primarily Crop, Pasture/Hay, Forest, and Headquarters.

Proposed NRCS Solutions to Address the Resource Concerns

The draft proposal focuses on four areas that can immediately address significant regional resource concerns in twelve counties that impact on the Puget Sound:

- 1. Water quality treatments on non-commercial livestock farms, primarily small acreage pastureland operations, which do not typically qualify for traditional NRCS programs**
- 2. Water quality treatments related to excessive suspended sediment and turbidity in surface water on non-industrial forestland, primarily related to forest roads and fish passage**
- 3. Water quality treatments related to existing at-risk waste storage structures, primarily on dairies**
- 4. Improvements in air quality by replacing aging diesel engines for irrigation with electric or high-efficiency motors, using manure injection practices, and developing comprehensive nutrient management plans**

Puget Sound Conservation Initiative (PSCI) Project Area



Washington State Resource Assessment 2011

QUESTIONS?

