The Nevada Conservation Credit System (CCS)

A Background Story

Sagebrush Ecosystem Technical Team (SETT)

February 7, 2025

Sagebrush Ecosystem Technical Team (SETT)

- Kathleen Steele – Program Manager
- Cheyenne Acevedo – Department of Wildlife
- Sarah Hale – Division of State Lands
- Casey Adkins – Division of Forestry
- Skyler Monaghan – Department of Agriculture

Sagebrush Ecosystem Technical Team (SETT)

- Kathleen Steele – Program Manager
  - NRS/NAC Development
  - LUPA/ARMPA/State Plan
  - Clearinghouse
  - SEC Administration
  - Financial Assurance Instruments
  - Budget
  - Collaboration with Partners
  - Regional Meetings Coordination
  - Website Maintenance
  - Organization and Filing Follow-up
  - USGS Sub-Contracting
  - IT Sub-Contracting
  - Training
  - Assist with CCS Projects and Updates as needed

Sagebrush Ecosystem Technical Team (SETT)

- Cheyenne Acevedo – Department of Wildlife
  - Debit Projects Point of Contact
  - Manage Debit Projects
  - Strategic Action Plan
  - Collaboration –WAFWA
  - Debit Projects End of Life (Closure/Rehabilitation)
  - Update User's Guide/HQT/Data Package (Debit)
  - Annual Layers Updates
  - CCS Tools Science Updates

Sagebrush Ecosystem Technical Team (SETT)

- Sarah Hale – Division of State Lands
  - CCS Overseer
  - Manage Credit/Debit Projects
  - NRS/NAC Development
  - CCS Maintenance
  - Semi-Annual Reporting
  - Verifier Training Coordination
  - Project Mngmt Actions Implementation and Alternative Mitigation
  - Collaboration (Creeks and Communities)

Sagebrush Ecosystem Technical Team (SETT)

- Casey Adkins – Division of Forestry
  - Public Lands Credits Lead
  - Manage Debit Projects
  - Semi-Annual Reporting
  - Collaboration (CDs/Shared Stewardship)
  - Alternative Mitigation on Public Lands
  - Public Information Officer Outreach
  - Adaptive Management
  - Debit End of Life (Closure/Rehabilitation)

Sagebrush Ecosystem Technical Team (SETT)

- Skyler Monaghan – Department of Agriculture
  - Credit Projects Point of Contact
  - Manage Credit Projects
  - Adaptive Management
  - Adaptive Management Report
  - Seed Grants/Solicitation
  - Collaboration (ROGER/Shoesole)
  - Update User's Guide/HQT/Data Package (Credit)
  - Project Mngmt Actions Implementation on Private Lands

Background

- March 2010 – FWS determined sage-grouse was “warranted but precluded” from ESA listing – sage-grouse became a candidate species
- Secretary Salazar invited states to develop EIS alternatives
- September 22, 2015 FWS determined the Greater Sage-grouse were not warranted for listing
- Future FWS status reviews will assess whether conservation efforts are moving in the right direction and if the 2015 not warranted finding requires re-visitation if it is determined that regulatory status of the species is necessary

Background – Nevada Response

- March 2012 – Governor created the Sage-grouse Advisory Committee (EO 2012-09)
- November 2012 – Governor established Sagebrush Ecosystem Council (EO 2012-19)
  - "The Sagebrush Ecosystem Council's mission is to maintain and restore a functional and resilient sagebrush ecosystem to benefit all species while allowing for various land uses. This will be accomplished by working through a diverse coalition of public and private stakeholders."

Background – Nevada Response

- November 2012 – Governor established Sagebrush Ecosystem Council (EO 2012-19)
  - NRS 232.162 - The Council shall:

(a) Consider the best science available in its determinations regarding and conservation of the greater sage grouse (Centrocercus urophasianus) and sagebrush ecosystems in this State;

(b) Establish and carry out strategies for:

(1) The conservation of the greater sage grouse and sagebrush ecosystems in this State; and

(2) Managing land which includes those sagebrush ecosystems, taking into consideration the importance of those sagebrush ecosystems and the interests of the State;

(c) Establish and carry out a long-term system for carrying out strategies to manage sagebrush ecosystems in this State using an adaptive management framework and providing for input from interested persons and governmental entities;

(d) Oversee any team within the Division of State Lands of the Department which provides technical services concerning sagebrush ecosystems;

(e) Establish a program to mitigate damage to sagebrush ecosystems in this State by authorizing a system that awards credits to persons, federal and state agencies, local governments and nonprofit organizations to protect, enhance or restore sagebrush ecosystems

(f) Solicit suggestions and information and, if necessary, prioritize projects concerning the enhancement of the landscape, the restoration of habitat, the reduction of nonnative grasses and plants and the mitigation of damage to or the expansion of scientific knowledge of sagebrush ecosystems;

(g) If requested, provide advice for the resolution of any conflict concerning the management of the greater sage grouse or a sagebrush ecosystem in this State;

(h) Coordinate and facilitate discussion among persons, federal and state agencies and local governments concerning the maintenance of sagebrush ecosystems and the conservation of the greater sage grouse;

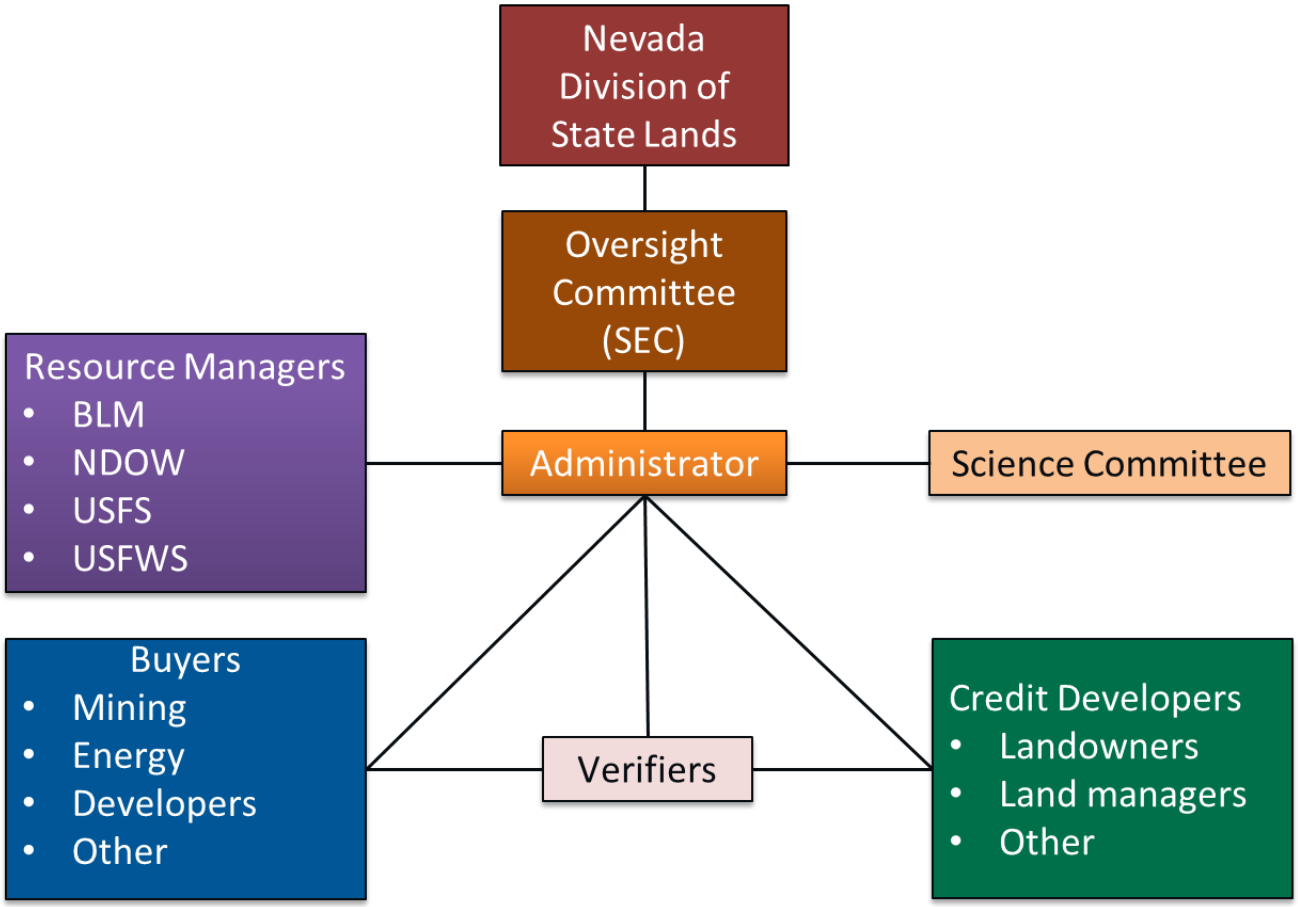
(i) Provide information and advice to persons, federal and state agencies and local governments concerning any strategy, system, program or project carried out pursuant to this section or NRS 321.592 or 321.594; and

(j) Provide direction to state agencies concerning any strategy, system, program or project carried out pursuant to this section or NRS 321.592 or 321.594 and resolve any conflict with any direction given by another state board, commission or department jointly with that board, commission or department, as applicable.

Background – Nevada Response

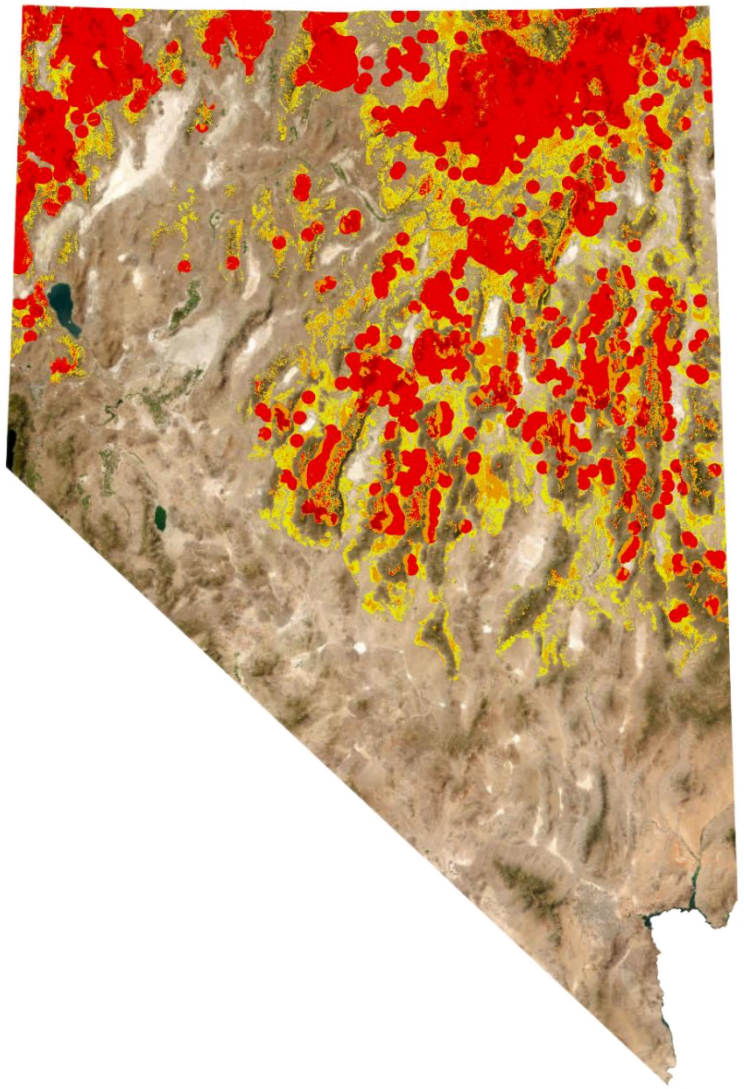
- February 2014 – Conservation Credit System adopted as the mitigation system; voluntary participation for debit proponents
- December 2018 – Executive Order 2018-32: Certain new anthropogenic disturbances on public lands in Nevada may require compensatory mitigation using the CCS
- October 2019 – Mitigation of disturbance to GRSG habitat on public lands through CCS became law; mandatory participation for debit proponents (NAC 232.400-232.480)

Organizational Structure



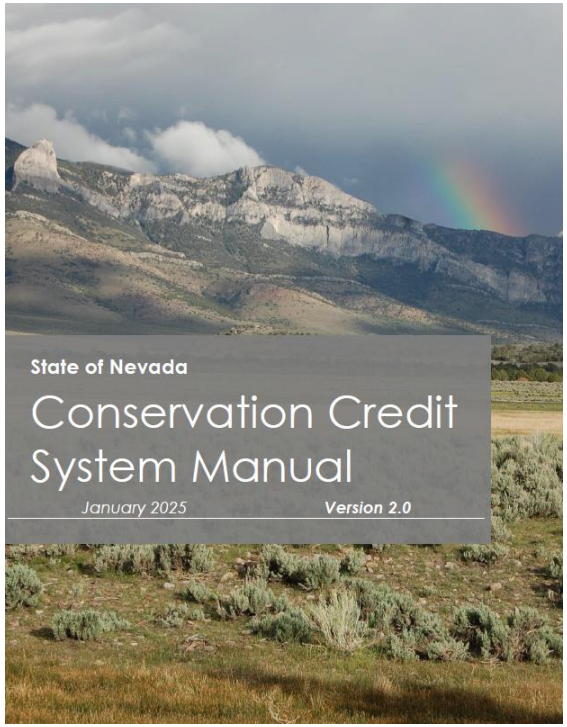
Goal of the CCS

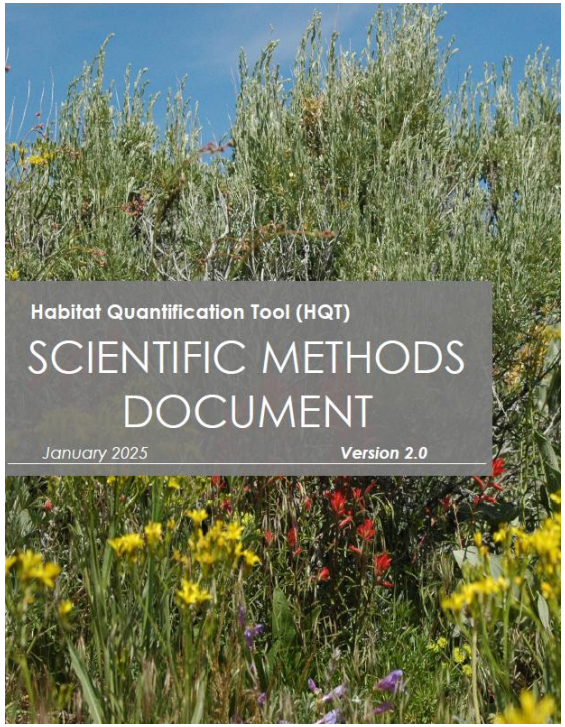
- Over 28 million acres of Greater-Sage Grouse Habitat Management Area (HMA) in Nevada
  - **Priority (PHMA):** High quality sage-grouse habitat, high use by sage-grouse
  - **General (GHMA):** High quality sage-grouse habitat, but lower use by sage-grouse
  - **Other (OHMA):** Moderate quality sage-grouse habitat, lower use by sage-grouse

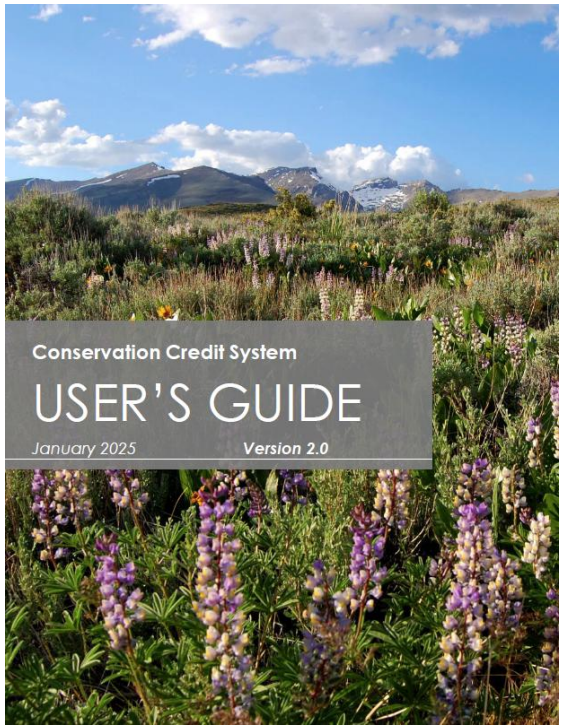


Goal of the CCS

- To offset impacts from anthropogenic disturbances through the implementation of enhancements and protections that result in a net conservation gain for greater sage-grouse in Nevada

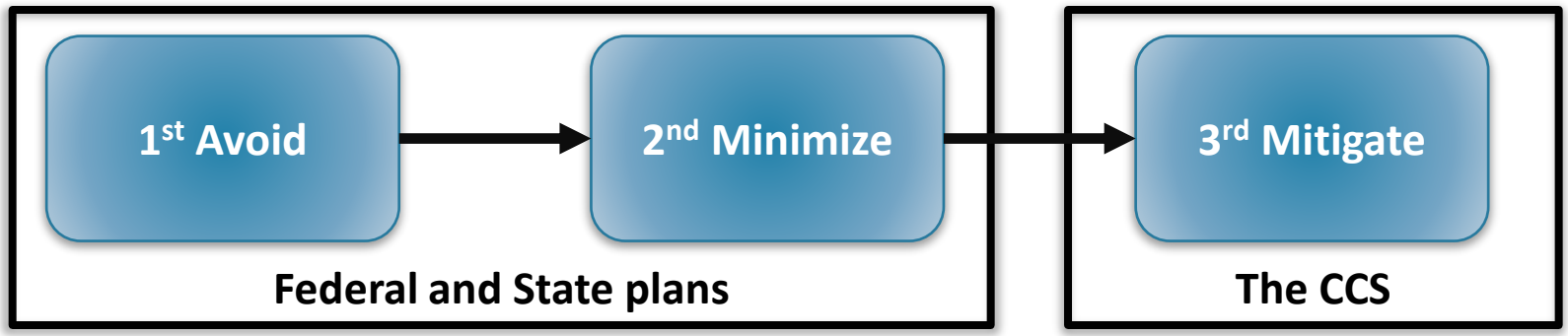






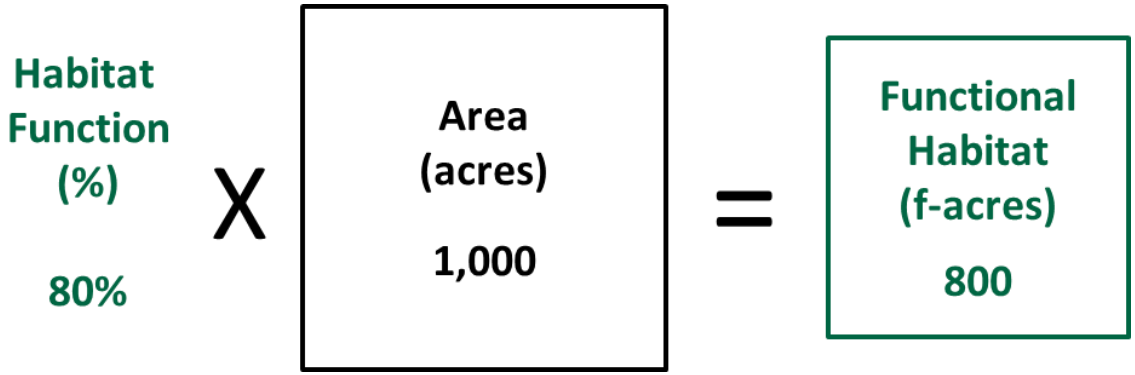
Goal of the CCS

- The CCS works within the mitigation hierarchy:
  - Impacts of anthropogenic disturbance to GRSG habitat are first avoided, then minimized, and then residual unavoidable impacts are mitigated through the CCS.
- The SETT/CCS should be included in the first two phases as well to help guide project planning and reduce the number of debits generated.



Nevada CCS Overview

- Measures habitat value in units of *functional acres* (quality and quantity)
- *Credits* are the currency of the CCS
- *Credits* are used to offset *debits* - the same methods are used to determine both
- *Credit Developers* sell credits directly to *Credit Buyers (Debit Proponents)*
- The price of credits is determined by free market forces



Nevada CCS Overview

The Credit System

The Credit Developer and Buyer agree on a purchase price and credits are sold. The Administrator (SETT) tracks the transfer of credits to ensure net conservation gain

The Credit Developer

A landowner commits to conserve sage-grouse habitat for a duration of time, which generates credits they can sell. Credits are verified using the CCS.

The Credit Buyer

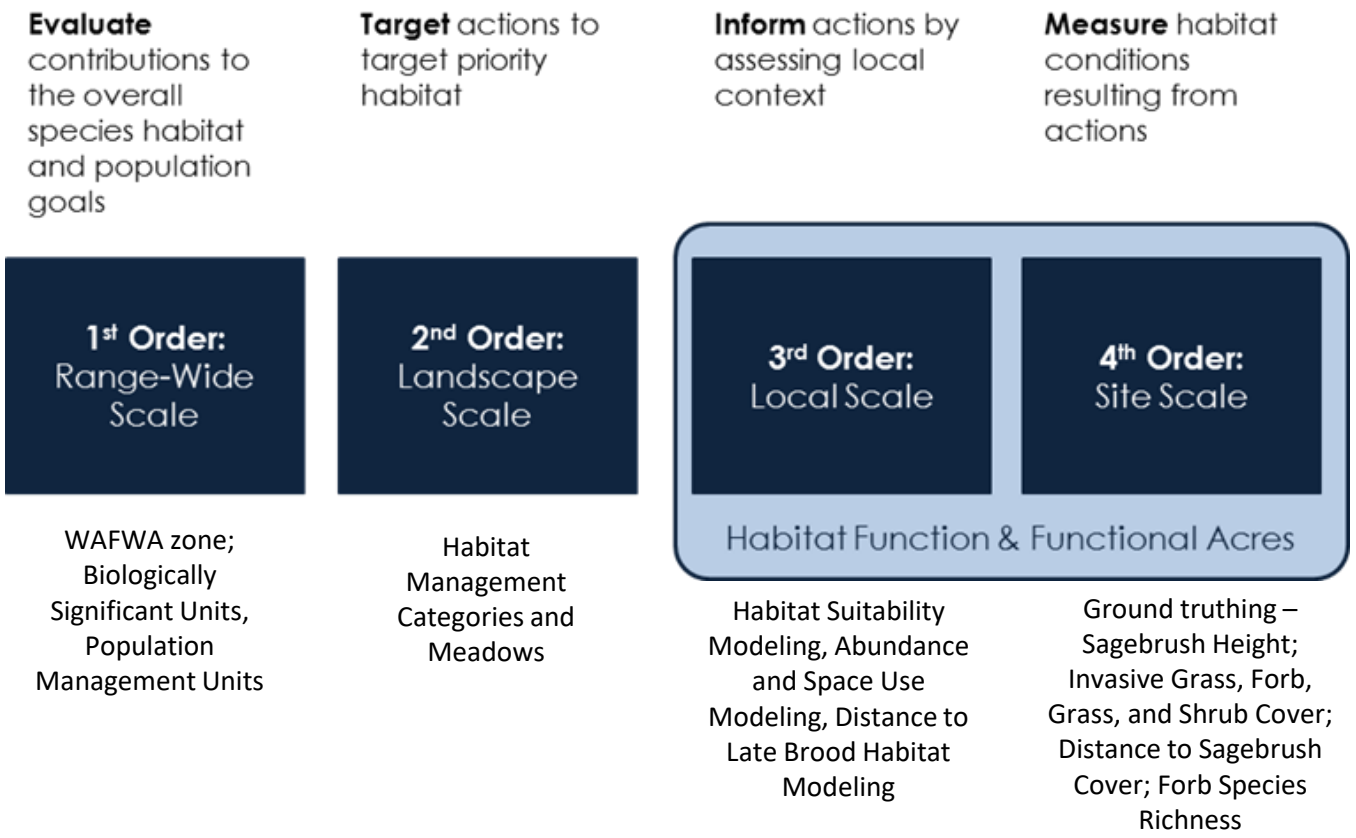
A project proponent on BLM or USFS lands uses the CCS to determine the number of credits needed to fulfill mitigation requirements.

Habitat Quantification Tool (HQT)

- Quantitative method for calculating GRSG habitat function based on scientific literature.
- Measure GRSG habitat value in units of **functional acres** (quality and quantity).
  - Determines the quality of habitat in the surrounding areas from current disturbances
  - Quantifies debits from new direct and indirect disturbances or credits for long-term protections or improvements
- Same method for calculating debits and credits.

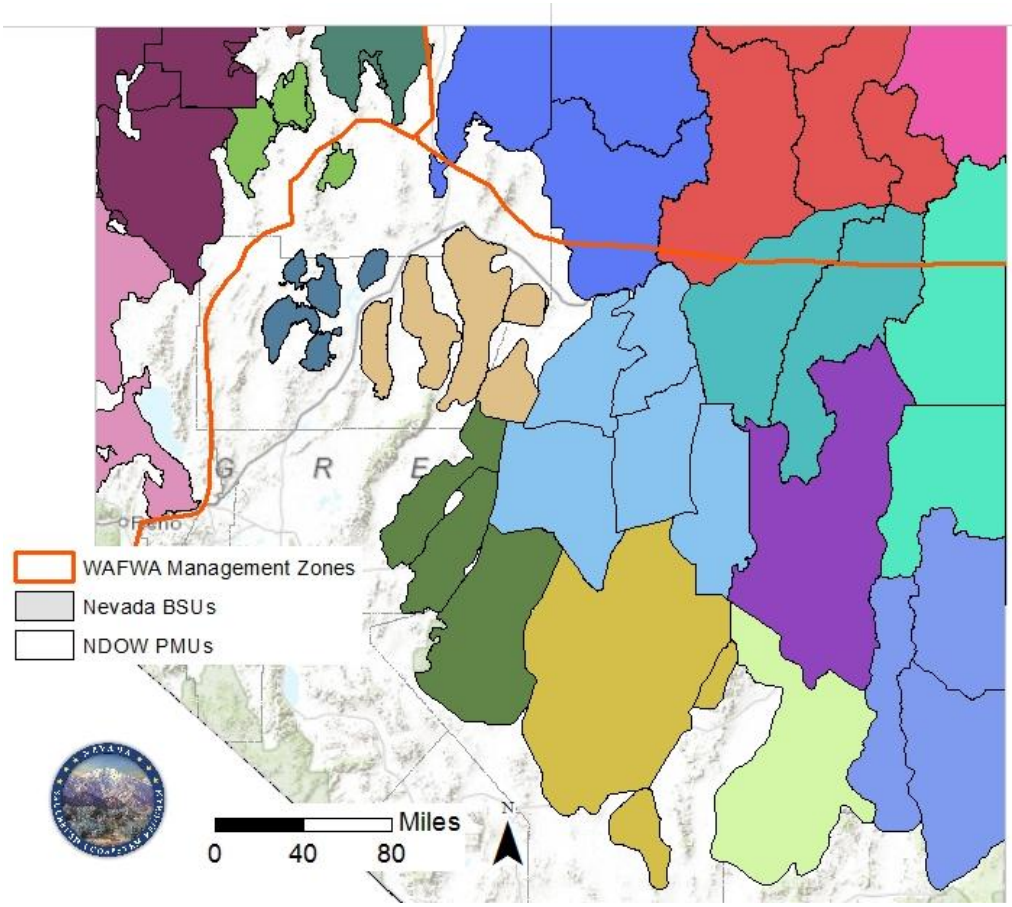
Habitat Quantification Tool (HQT)

- Quantifies habitat value at multiple spatial scales.
- Many of our maps are created by USGS modeling



1st Order: Range-wide Scale

- Geographic units
  - PMUs: Population Management Units
    - Individual populations
    - Made by NDOW
  - BSUs: Biologically Significant Units
    - Connected regional populations
    - Made by NDOW
  - WAFWA Zones: Western Assoc of Fish and Wildlife Agencies Mngmt Zones
    - Populations connected through dispersal
    - Made by WAFWA



2nd Order: Landscape Scale

- Provides information targeting management actions
- Highlights important GRSG habitat areas that should be protected
- Mitigation Ratios:
  - Management Importance (Priority, General, Other)
  - Meadow Habitat Factor (8x)
  - Proximity Factor (debits)

Landscape Scale: Management Importance Factor

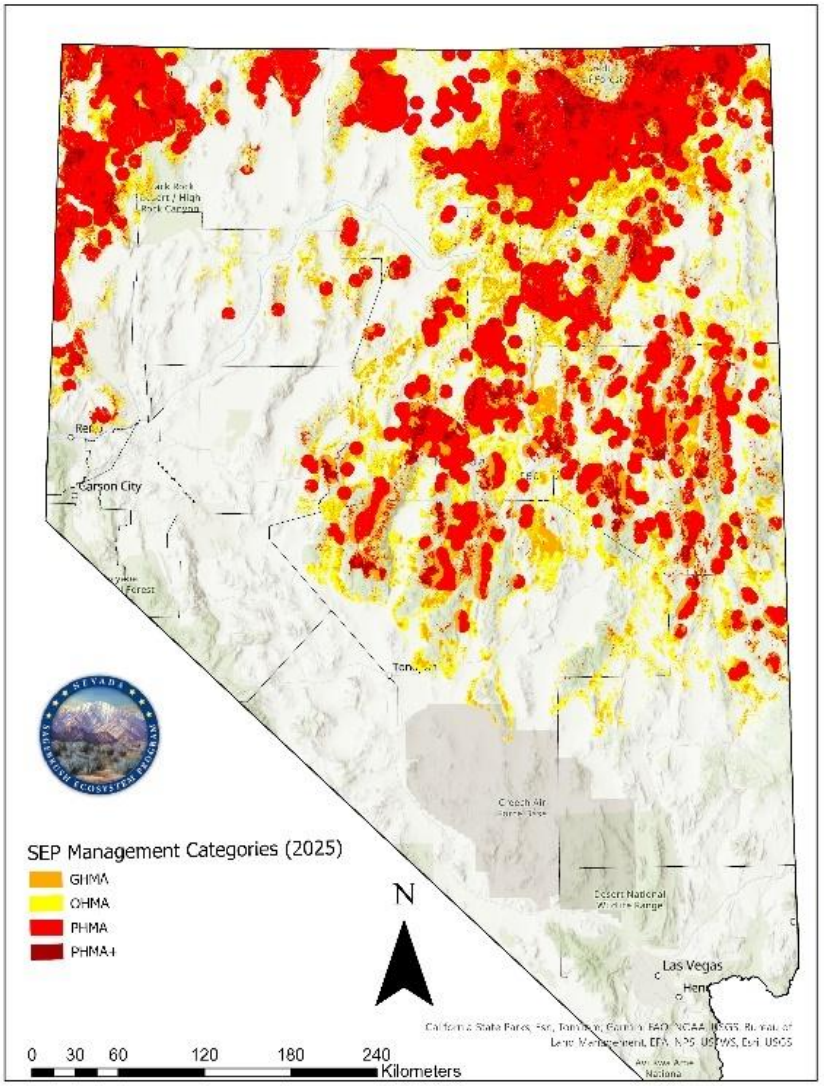
Credit Projects

Category	Credit Factor Value
PHMA	1.20
GHMA	1.10
OHMA	1.00

Debit Projects

Category	Debit Factor Value
PHMA	1.25
GHMA	1.15
OHMA	1.05

- Incentivizes credit projects and disincentives debits projects in the most important sage-grouse habitat areas



Landscape Scale: Meadow Habitat Power Factor

- Certain seasonal GRSG habitat limited, since meadows are rare in occurrence and are important for sage-grouse to complete the late brood-rearing life cycle stage
- Provides incentives for credit projects and disincentives for debit projects

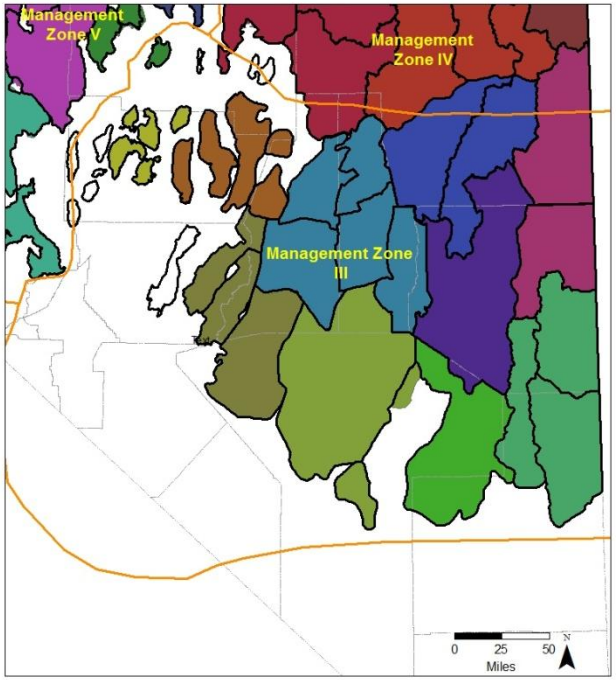
Habitat Type	Factor Value
Meadow	8.0

Landscape Scale: Meadow Habitat Power Factor

- Meadow types:
  - Unaltered Meadow
    - Not currently being managed to alter hydrology or landscape features (e.g. stringer meadows). Can have remnants from past management activities.
    - Full habitat function at any distance from sagebrush.
  - Altered Meadow
    - Actively being managed to alter hydrology (e.g. diversions, irrigated pastures, spreaders), landscape features, etc.
    - Full habitat function to 60m and levels off at 20% function at 300m from sagebrush.

Landscape Scale: Proximity Factor

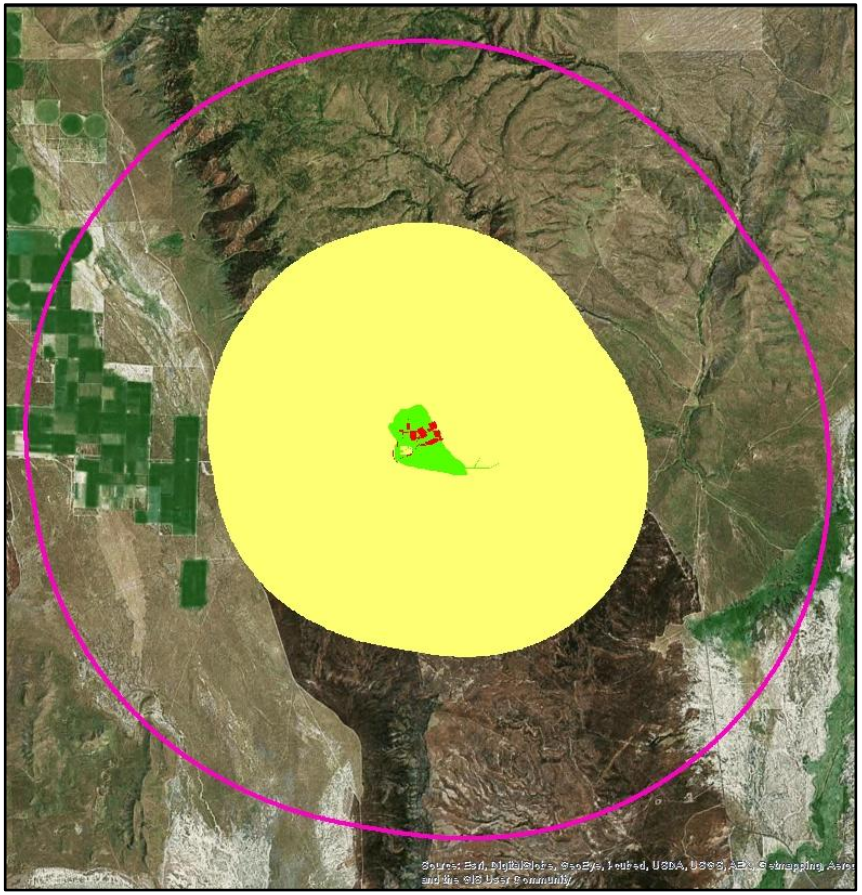
Category	Factor Value
No population connection between credit and debit sites (different WAFWA Management Zone)	1.15
Credit and debit sites connected through population dispersal (same WAFWA Management Zone)	1.10
Credit and debit sites located within a regional population (same BSU, even if in different WAFWA Management Zones)	1.05
Credit and debit sites located within a single population (same PMU, even if in different WAFWA Management Zones)	1.00



- Incentivizes credit projects to occur in areas in which the same population is being impacted by debit projects

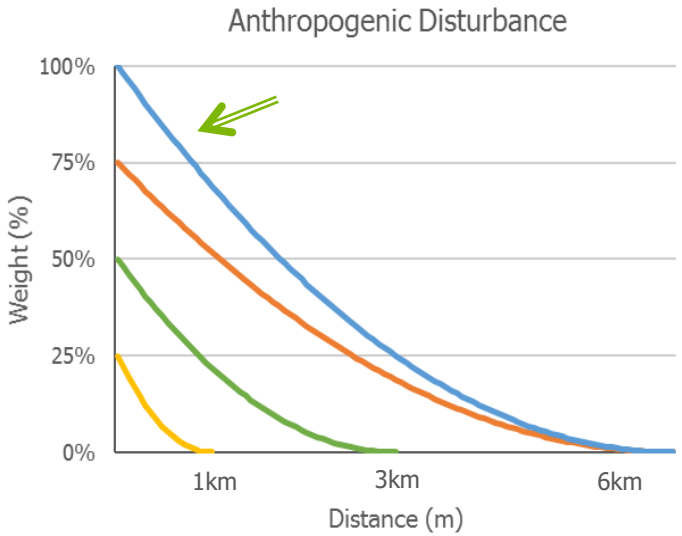
3rd Order: Local Scale

- Focuses on the habitat surrounding a proposed project site and how it impacts the project
- Local scale quantifies:
  - Anthropogenic Disturbances
  - Habitat Suitability Index
  - Abundance and Space Use Index
  - Distance to Late Brood-Rearing habitat



Local Scale: Anthropogenic Features

DISTURBANCE TYPE	SUBTYPE*	WEIGHT (%)	DISTANCE (Meters)
Towers (cell, etc.)	n/a	75%	6,000 m
Power Lines	Transmission and Distribution	75%	6,000 m
Power Lines	Distribution – Monopole	25%	6,000 m
Mines	Active – Large (≥ 60 acres)	100%	6,000 m
	Active - Med or small (< 60 acres)	100%	3,000 m
	Inactive – Large (≥ 60 acres)	50%	1,000 m
	Inactive - Med or small (< 60 acres)	10%	1,000 m
Oil & Gas Wells	Producing	100%	3,000 m
	Non-producing	0%	0 m
Urban, Suburban & Ex-urban Development	Med-High	100%	6,000 m
	Low	75%	3,000 m
Roads	Interstate/4-lane	100%	6,000 m
	2-lane Paved & High-use Improved Gravel	100%	3,000 m
	Low-use Improved Gravel	25%	1,000 m
Renewable	Solar	25%	1,000 m
	Geothermal	100%	6,000 m
	Wind	25%	6,000 m



- Each anthropogenic disturbance type has a weight and distance that its impact extends to
  - Weight ranges from 25-100%
  - Impact decreases with distance from the disturbance
  - Max distance is currently 6km
- Debit projects within 6km of GRSG habitat must consult the SETT

Local Scale: Anthropogenic Features

- Each anthropogenic disturbance type has a weight and distance that its impact extends to
  - This weight and distance stem from extensive literary research of dozens of papers on various impacts to GRSG.
  - Much of this research was current at the time, and may still be the latest research, however several new studies have come out updating the information we used to make decisions.
    - E.g., Geothermal has shown impacts extending up to 12.5 km
      - Peter S. Coates et al., “Geothermal Energy Production Adversely Affects a Sensitive Indicator Species within Sagebrush Ecosystems in Western North America,” Biological Conservation 280 (April 2023): 109889.
    - E.g., Mining impacts up to 8 km, pending literature coming

Local Scale: Anthropogenic Features

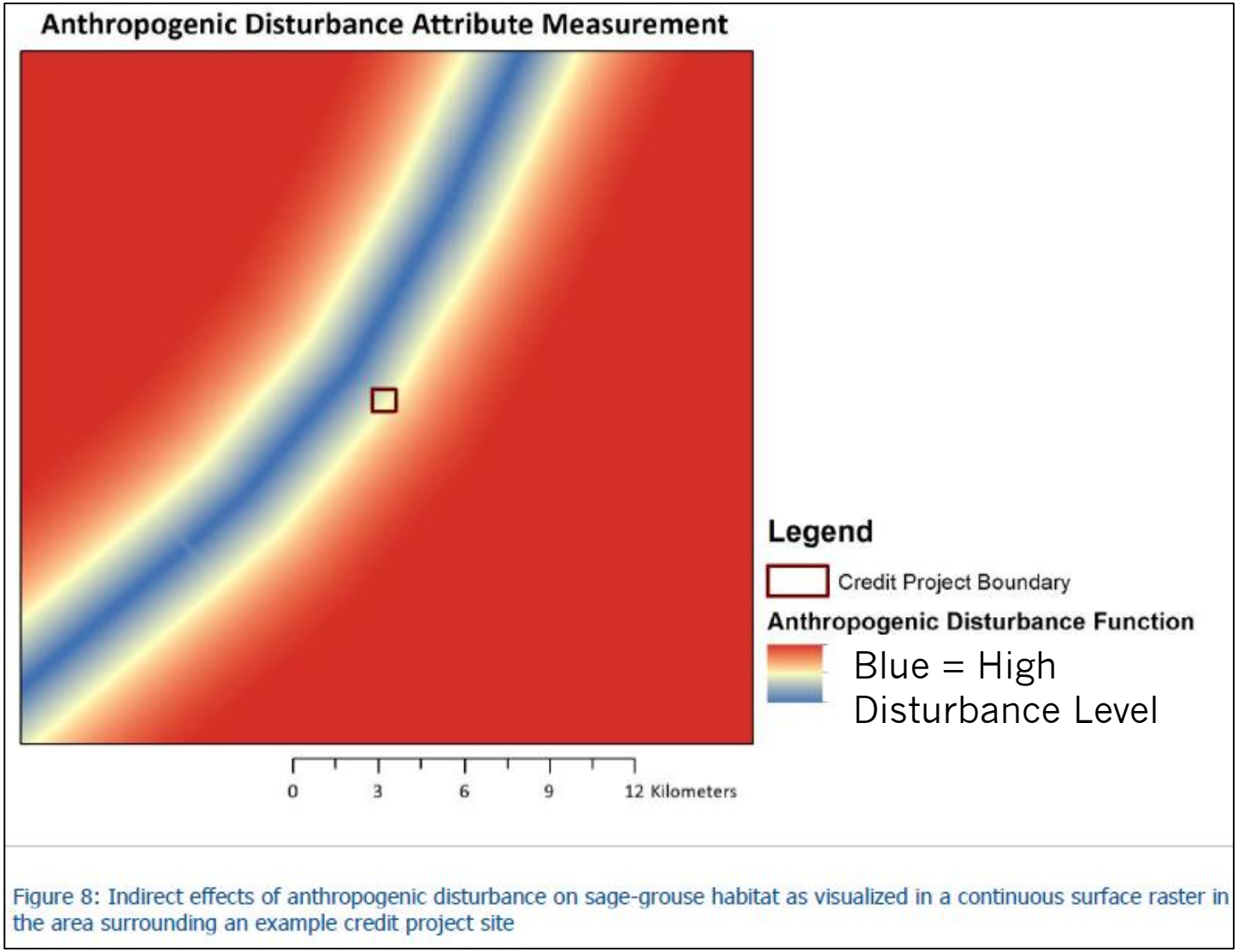
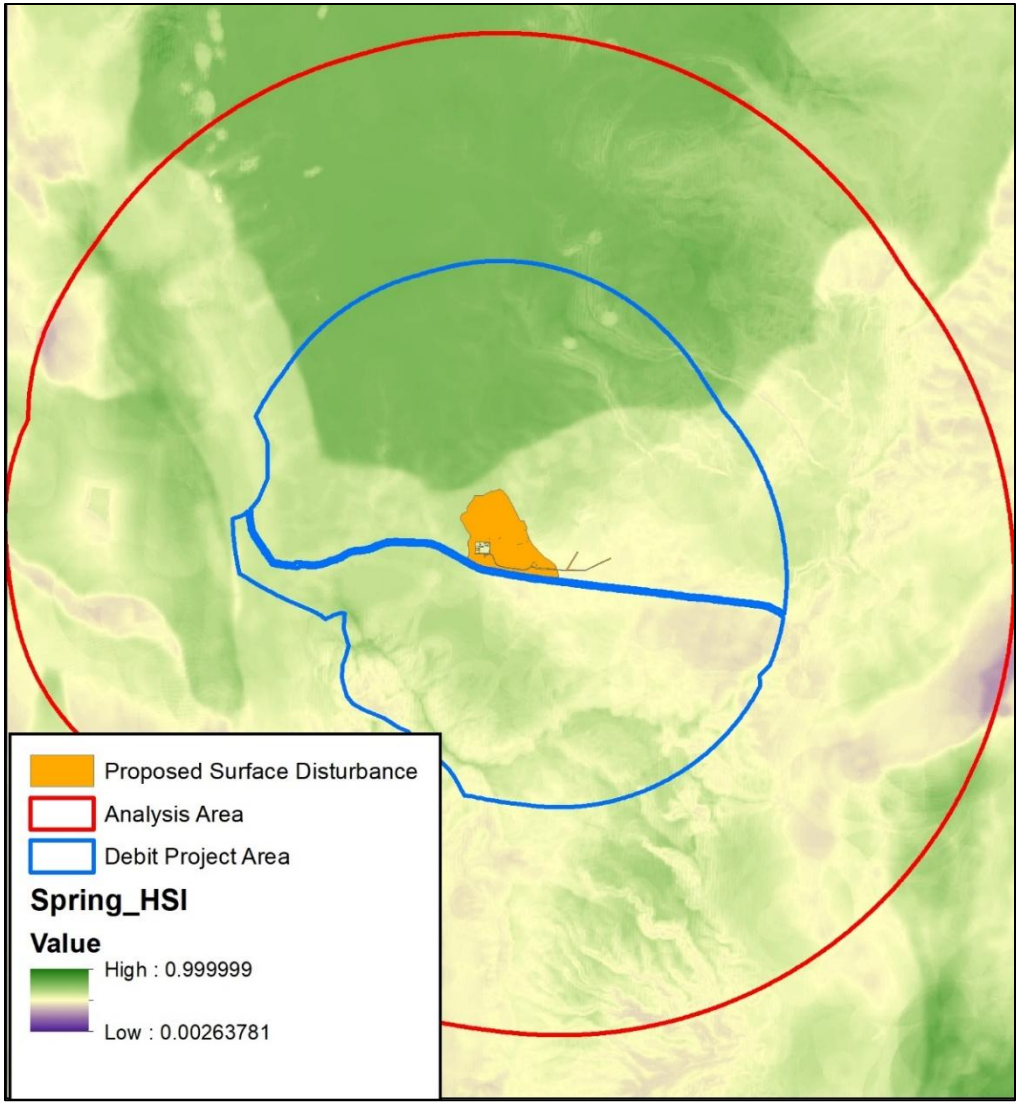
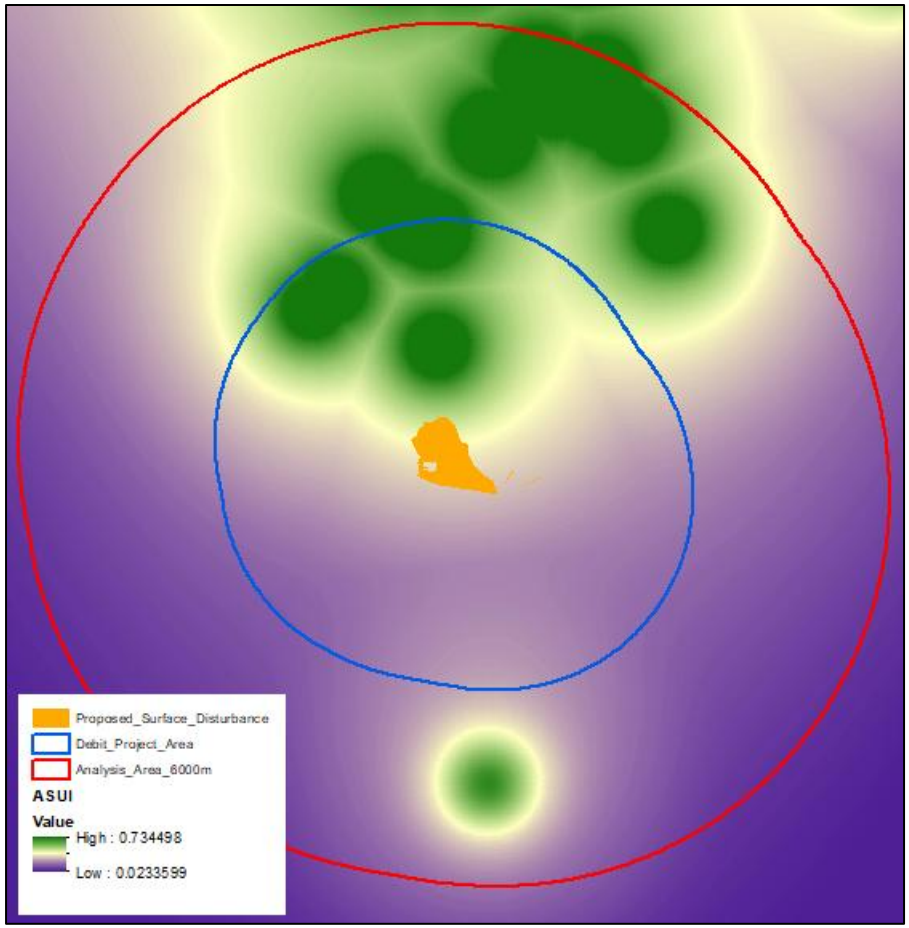


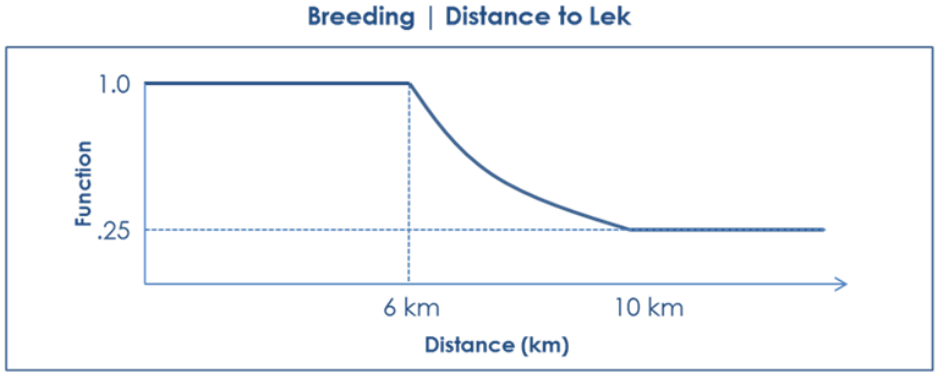
Figure 8: Indirect effects of anthropogenic disturbance on sage-grouse habitat as visualized in a continuous surface raster in the area surrounding an example credit project site

Local Scale: Habitat Suitability Index



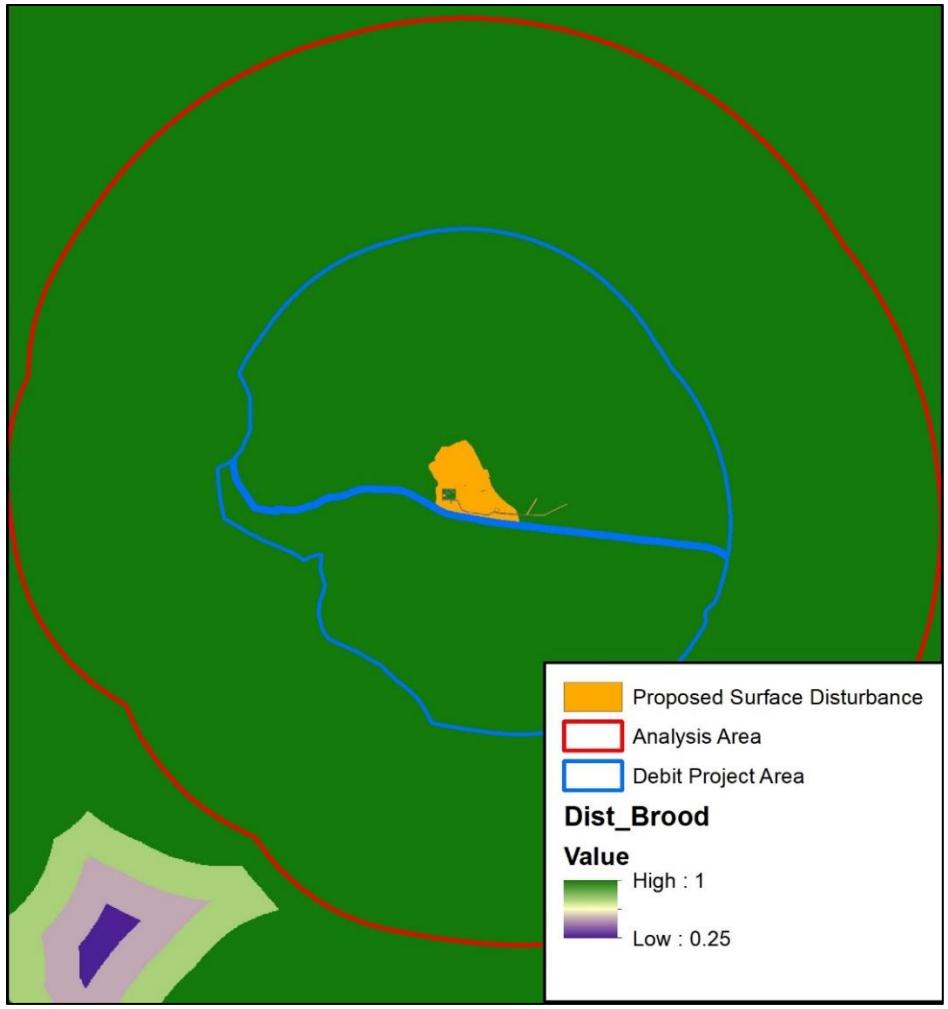
Local Scale: Abundance & Space Use Index



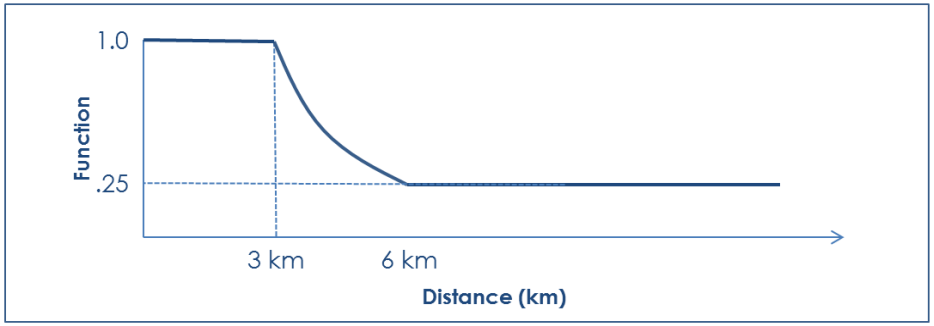


Distance (km)	<6	6 – <7	7 – <8	8 – <9	9 – <10	≥10
Score	1.0	0.80	0.60	0.40	0.30	0.25

Local Scale: Distance to Late Brood-Rearing Habitat (Breeding)

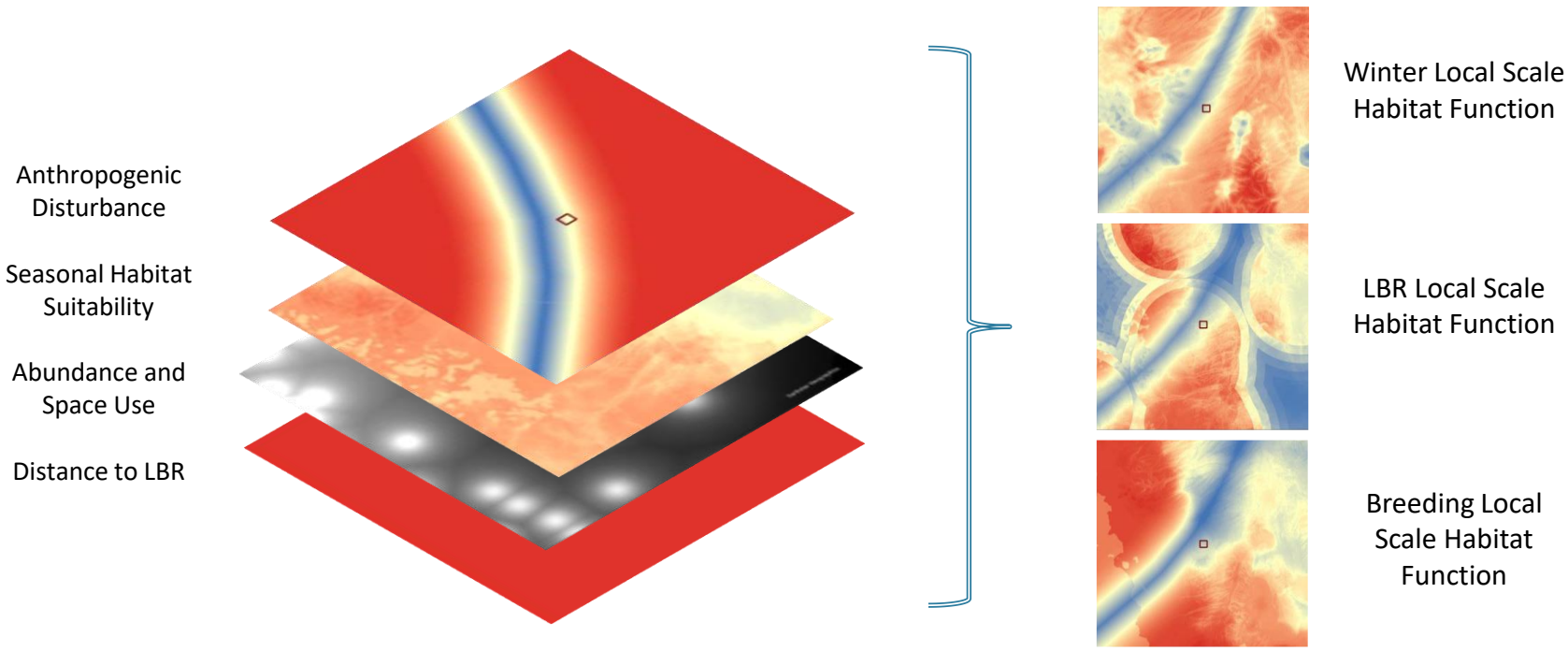


Breeding | Distance to Late Brood-Rearing



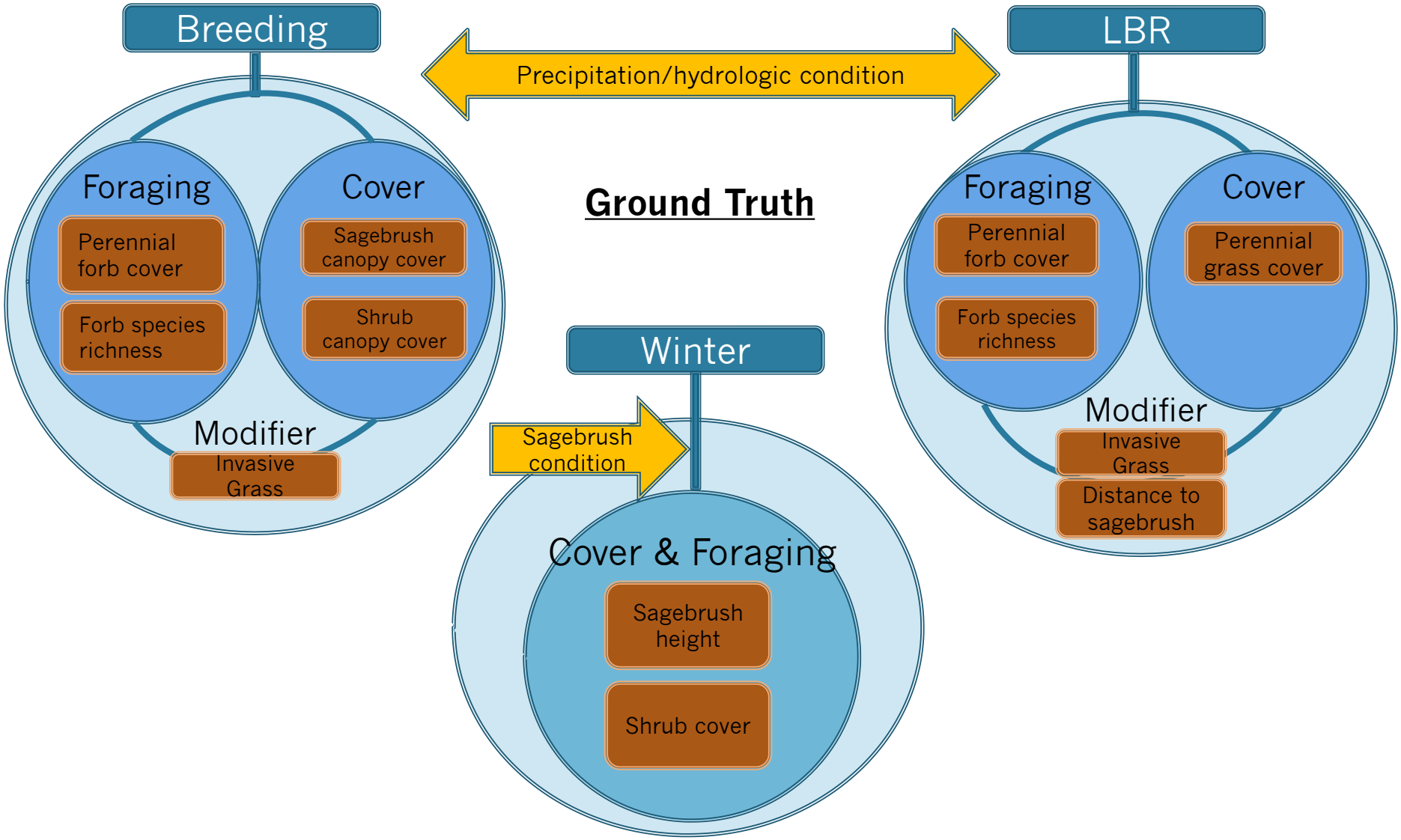
Distance (km)	<3	3 – <4	4 – <5	5 – <6	≥6
Score	1.0	0.8	0.6	0.40	0.25

Calculating Local Habitat Function

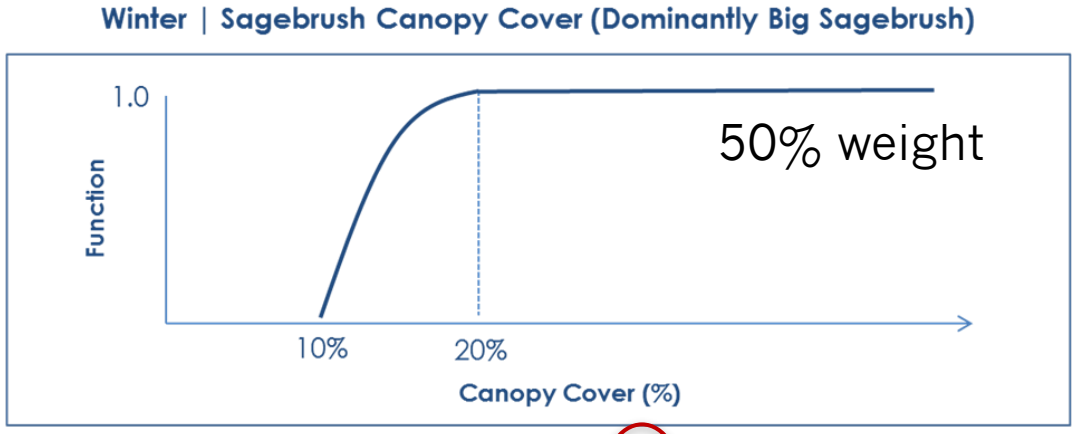


- All these factors are incorporated into the calculation of function for GRSG seasonal habitats:
  - **Winter Local Scale Function =** Anthropogenic Disturbance × Winter Habitat Suitability Index
  - **LBR Local Scale Function =** Anthropogenic Disturbance × Summer Habitat Suitability Index
  - **Breeding Local Scale Function =** Anthropogenic Disturbance × Spring Habitat Suitability Index × Abundance and Space Use Index × Distance to Late Brood Rearing

4th Order: Site Scale



4th Order: Site Scale

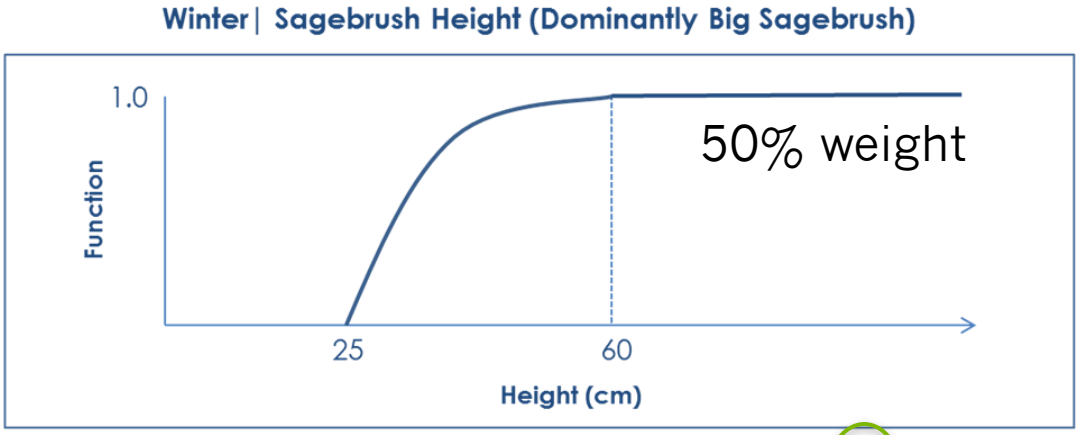


Dominantly Big Sagebrush	Cover (%)	<10	10 – <12	12 – <14	14 – <16	16 – <18	18 – <20	≥20
	Score	0	.3	.55	.75	.88	.95	1

Example Calculation:

- SB canopy cover = 13%
- SB height = 51 cm

Site Scale Function =
(.55)(.5) + (.84)(.5) = 0.695



Dominantly Big Sagebrush	Height (cm)	<25	25 – <30	30 – <35	35 – <40	40 – <45	45 – <50	50 – <55	55 – <60	≥60
	Score	0	.2	.4	.55	.62	0.68	.84	.92	1

4th Order: Site Scale

- Curves are modified from Colorado Greater Sage-grouse Habitat Quantification Tool and modified by the Technical Review Group to fit better within Nevada sagebrush habitat. They used current research to justify the modification of the curves.

- Habitat baselines - base desirable habitat where any preservation or uplift of habitat over and above this base generates credits - were created using average habitat metrics from NV AIM data through the BLM.

Final Calculations

- **Calculate the change in Functional Acres that will result from the project:**
  - **f-acres = Acres × Site Scale Function × Local Scale Function**
  - **Credit Project:** $\text{f-acres}_{\text{above baseline}} = \text{f-acres}_{\text{Current - Project}} - \text{f-acres}_{\text{Baseline}}$
  - **Debit Project:** $\text{f-acres}_{\text{lost}} = \text{f-acres}_{\text{Pre-Project}} - \text{f-acres}_{\text{Post-Project}}$
- **Credit Projects:**
  - Apply multipliers to the functional acres that will be gained from the project:
    - Management Importance Factor (PHMA, GHMA, OHMA)
    - Meadow factor
  - Calculate reserve account contribution
  - Subtract reserve account contribution from total credits to get sellable credits
- **Debit Projects:**
  - Will perform calculations for both direct and indirect disturbance
  - Apply multipliers to the functional acres that will be lost due to the project:
    - Management Importance Factor (PHMA, GHMA, OHMA)
    - Meadow Factor
    - Proximity factor (of credit project from which credits will be purchased)

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More information can be found in the Sagebrush Ecosystem Program's 2025 Nevada Habitat Quantification Tool Scientific Methods Document v2.0.

QUESTIONS?

THANK YOU!