Ecological site VX158X01X401
Isohyperthermic Ustic Naturalized Grassland

Accessed: 04/24/2024

General information

Provisional. A provisional ecological site description has undergone quality control and quality assurance review. It contains a working state and transition model and enough information to identify the ecological site.

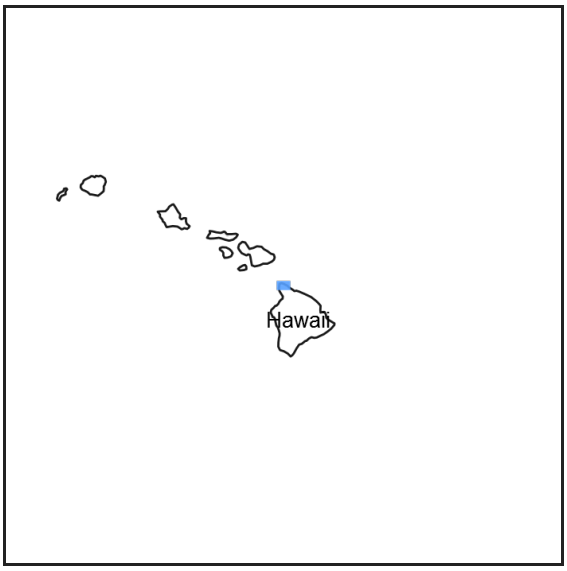

Figure 1. Mapped extent

Areas shown in blue indicate the maximum mapped extent of this ecological site. Other ecological sites likely occur within the highlighted areas. It is also possible for this ecological site to occur outside of highlighted areas if detailed soil survey has not been completed or recently updated.

MLRA notes

Major Land Resource Area (MLRA): 158X–Semiarid and Subhumid Low Mountain Slopes

Refer to G158XY401HI (FSGD) for the full report.

Table 1. Dominant plant species

Tree	Not specified
Shrub	Not specified
Herbaceous	Not specified

Legacy ID

R158XY401HI

Physiographic features

Nearly level to gently rolling coastal plains to hills, ridges, cinder cones and moderately steep low mountain slopes.

Lands previously in pineapple and/or sugarcane and/or other crops.

Table 2. Representative physiographic features

Landforms	(1) Hill (2) Mountain slope (3) Coastal plain
Flooding frequency	None
Ponding frequency	None
Elevation	0–1,500 ft
Slope	0–35%
Aspect	Aspect is not a significant factor

Climatic features

Average annual precipitation ranges from 26 to 60 inches. Most of the rain falls from November through March. January is typically the wettest month.

Average annual air temperature ranges from 70 to 75 degrees-F.

The growing season is yearlong and highly dependent on precipitation events.

The climate is generally classified as subhumid-subtropical in nature.

Table 3. Representative climatic features

Frost-free period (average)	365 days
Freeze-free period (average)	365 days
Precipitation total (average)	60 in

Influencing water features

No significant water features or hydrology occurs on the site.

Soil features

Typical soils are deep to very deep, and the A-horizon usually has a plow layer. Most, if not all, of these soils were previously in sugarcane and/or other crops such as pineapple.

The soils formed from volcanic ash, or in materials derived from volcanic ash or basalt. Surface textures range from silty
clay (most typical) to silty clay loam and clay. The surface is typically covered with stones or cobbles. Underlying soil
horizons are typically stony, very stony or extremely stony. Available water capacity is high. Permeability varies from moderately slow to moderately rapid, generally depending upon historic management of the site and the amount of organic matter remaining in the surface horizon. Runoff ranges from low to medium. Soil colors range from dark brown,
very dark brown, and grayish brown to dark reddish brown. Soil reaction (pH, water) is slightly acidic to neutral in the
upper horizons. Soil temperature regime is isohyperthermic; soil moisture regime is aridic.

Table 4. Representative soil features

Parent material	(1) Andesitic volcanic ash–andesite

Surface texture	(1) Cobbly silty clay (2) Very cobbly silty clay loam (3) Extremely stony clay
Family particle size	(1) Clayey
Drainage class	Well drained
Permeability class	Moderately slow to moderately rapid
Soil depth	15–72 in
Surface fragment cover <=3"	1–5%
Surface fragment cover >3"	29–35%
Available water capacity (0-40in)	5 in
Calcium carbonate equivalent (0-40in)	0%
Electrical conductivity (0-40in)	0 mmhos/cm
Sodium adsorption ratio (0-40in)	0
Soil reaction (1:1 water) (0-40in)	5.6–7.3
Subsurface fragment volume <=3" (Depth not specified)	4–45%
Subsurface fragment volume >3" (Depth not specified)	1–8%

Ecological dynamics

This site has been developed as a Forage Suitability Group, rather than a Rangeland Ecological Site.

State and transition model

Contributors

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Rangeland health reference sheet

Interpreting Indicators of Rangeland Health is a qualitative assessment protocol used to determine ecosystem condition based on benchmark characteristics described in the Reference Sheet. A suite of 17 (or more) indicators are typically considered in an assessment. The ecological site(s) representative of an assessment location must be known prior to applying the protocol and must be verified based on soils and climate. Current plant community cannot be used to identify the ecological site.

Author(s)/participant(s)	Loretta J. Metz
Contact for lead author	
Date	04/29/2012
Approved by	Loretta J. Metz
Approval date	
Composition (Indicators 10 and 12) based on	Annual Production

Indicators

1. **Number and extent of rills:** None.

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2. **Presence of water flow patterns:** None.

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3. **Number and height of erosional pedestals or terracettes:** None.

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4. **Bare ground from Ecological Site Description or other studies (rock, litter, lichen, moss, plant canopy are not bare ground):** Total amount of bare ground is less than 5% in a well-managed, functioning pasture system.

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5. **Number of gullies and erosion associated with gullies:** None.

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6. **Extent of wind scoured, blowouts and/or depositional areas:** None.

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7. **Amount of litter movement (describe size and distance expected to travel):** Regardless of size, litter is not expected to move/travel across this site.

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8. **Soil surface (top few mm) resistance to erosion (stability values are averages - most sites will show a range of values):** Average values are 4-5.

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9. **Soil surface structure and SOM content (include type of structure and A-horizon color and thickness):** Light yellowish brown to moderately dark brown A-horizon depending on the amount of organic matter incorporated in the horizon. Note that a true A-horizon may not be present due to past intensive cropping procedures used on sugarcane and pineapple.

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10. **Effect of community phase composition (relative proportion of different functional groups) and spatial distribution on infiltration and runoff:** Grasses and forbs provide the best opportunity for water infiltration and reduced runoff. As the plant community shifts to shrubs or trees, the ability of the site to absorb water and reduce runoff is significantly compromised.

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11. **Presence and thickness of compaction layer (usually none; describe soil profile features which may be mistaken for compaction on this site):** May be a compaction layer deeper in the soil profile due to past cropping practices. If present, the compaction layer will typically be located between 6 to 12 inches below the ground surface.

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12. **Functional/Structural Groups (list in order of descending dominance by above-ground annual-production or live foliar cover using symbols: >>, >, = to indicate much greater than, greater than, and equal to):**

Dominant: Warm season perennial bunchgrasses >>

Sub-dominant: Warm season perennial rhizomatous grasses > Warm season perennial leguminous forbs >>

Other: Other warm season perennial forbs (non-leguminous).

Additional:

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13. **Amount of plant mortality and decadence (include which functional groups are expected to show mortality or decadence):** Plant mortality and decadence occur seasonally, sometimes several times throughout the year depending on precipitation and temperature. Mortality is generally not common; decadence is rather common, particularly within the warm season perennial grasses.

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14. **Average percent litter cover (%) and depth (in):**

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15. **Expected annual annual-production (this is TOTAL above-ground annual-production, not just forage annual-production):** Over 20,000 pounds per acre is produced annually on this site (total production, not just forage production).

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16. **Potential invasive (including noxious) species (native and non-native). List species which BOTH characterize degraded states and have the potential to become a dominant or co-dominant species on the ecological site if their future establishment and growth is not actively controlled by management interventions. Species that become dominant for only one to several years (e.g., short-term response to drought or wildfire) are not invasive plants. Note that unlike other indicators, we are describing what is NOT expected in the reference state for the ecological site:** Refer to the plant list on the FSGD, G158XY401HI. Where the annual production amounts are shown as "zero" on the plant/production list, that represents the invasive species typical to the site.

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17. **Perennial plant reproductive capability:** Very high; multiple times per year depending on moisture and temperature received on the site.
