

## Ecological site R015XF002CA Clayey Foothills

Accessed: 07/17/2024

---

### 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)                    | Judy Welles, Ryan Miebach           |
| Contact for lead author                     | Chico Soil Survey Office, Chico, CA |
| Date  | 09/19/2013                          |
| Approved by                                 |                                     |
| Approval date                               |                                     |
| Composition (Indicators 10 and 12) based on | Annual Production                   |

### Indicators

- Number and extent of rills:** Some rilling would be expected. After heavy spring rains rilling (2 rills per 20 feet) was noted.

---
- Presence of water flow patterns:** Water commonly flows downslope for a length of 200-500 feet.

---
- Number and height of erosional pedestals or terracettes:** No erosion pedestals were noted. Some terracettes would be expected.

---
- Bare ground from Ecological Site Description or other studies (rock, litter, lichen, moss, plant canopy are not bare ground):** Bare ground ranges from 10 to 40 percent.

---
- Number of gullies and erosion associated with gullies:** These soils may be found in association with gullies that are 4 to 6 feet deep at 500 to 1000 foot intervals.

---
- Extent of wind scoured, blowouts and/or depositional areas:** No wind scour or blowouts were noted.

---

7. **Amount of litter movement (describe size and distance expected to travel):** Very little if any litter movement was noted. Oak leaves would be 2-3 inches long and 1-2 inches wide. Grass litter would be 4-6 inches long and 1/10 inches wide, and forbs would be 2-3 inches long and 1/2 inch wide.
- 
8. **Soil surface (top few mm) resistance to erosion (stability values are averages - most sites will show a range of values):** Soil surface is clay loam, silty clay, silty clay loam and clay with a medium blocky structure. When these soils are wet they are "plastic" or susceptible to deformation under stress and have a low resistance to disturbance (Virmani, Sarawat and Burford, 1982). This soil also has a high resilience when dry with some ability to recover when disturbed. Slow permeability and steep slopes also make this site susceptible to erosion if disturbed. Soil erosion hazard is slight to high.
- 
9. **Soil surface structure and SOM content (include type of structure and A-horizon color and thickness):** Sehorn: A horizon is 0 to 7 inches; pale brown (10YR 6/3) clay loam, dark brown (10YR 4/3) with medium subangular blocky structure. SOM 1-4 percent.
- Altamont: A--0 to 7 inches; brown (10YR 4/3) clay, dark brown (10YR 3/3) with strong coarse prismatic and strong coarse and medium blocky structure. SOM 1-4 percent.
- 
10. **Effect of community phase composition (relative proportion of different functional groups) and spatial distribution on infiltration and runoff:** Grass>>>Trees>>Shrubs>Forbs
- High grass cover on foot slopes should prevent soil loss from rainfall impact and grass cover slows runoff. Backslopes would have less grass cover. The presence of trees intercepts rainfall and stem flow and roots aid water infiltration. While shrubs aid infiltration, their low cover does not significantly contribute to overall infiltration and runoff. Forbs have little to no effect on infiltration and runoff
- 
11. **Presence and thickness of compaction layer (usually none; describe soil profile features which may be mistaken for compaction on this site):** None noted. Platy structure could be confused with compaction.
- 
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: Annual grasses
- Sub-dominant: Blue oaks
- Other: Common manzanita
- Additional:
- 
13. **Amount of plant mortality and decadence (include which functional groups are expected to show mortality or decadence):** Annual grasses and forbs will show mortality and decadence beginning in late April or early May. Blue oak would not be expected to have more than 1-2 percent mortality.
-

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

---

15. **Expected annual annual-production (this is TOTAL above-ground annual-production, not just forage annual-production):** Expected production is highly variable based on unfavorable normal or favorable year. Total production ranges from approximately 750 to 1800 pounds per acre.

---

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:** Two common invasives could become an issue on footslope positions: Medusahead and Yellow star-thistle

---

17. **Perennial plant reproductive capability:** Minor amounts of native and non-native perennial grasses exist on the site including Melic spp. and Stipa spp.. Typically the native perennial grasses face strong competition from non-native grasses and forbs. Wet years with fall and winter rains tend to favor non-native grasses on well drained deep soils (Stromberg etal, 2007). Expected perennial grass seedlings would be 5 per 20 square foot.

---