Whither the rangeland? Trends in rangeland conversion in California over a quarter-century

Jaymee Marty, Dick Cameron and Robert Holland

Threats to Rangelands

- Rangelands are threatened in a number of ways
  - Climate change
  - Invasive species
  - Inappropriate livestock grazing
  - Most immediate and irreversible threat: conversion

- Vulnerability assessment launched to characterize patterns and causes of rangeland conversion as well as future threat of conversion
- Goal of study: inform strategies beyond direct protection (acquisition)

The Threat of Conversion

68% of vernal pool habitat was converted to agricultural land uses (Holland 2008)

Study Objectives

1) Document how much rangeland conversion has taken place in the last 25 years within the CRCC Priority area
2) Assess the current land use of the converted land
3) Use this information to inform land use planning decision making, policy formulation and conservation strategies for rangelands

Methods

- Used CRCC priority area as study area boundary (35.4 million acres in 33 counties)
- Used Dept. of Conservation’s FMMP dataset to identify converted grazing land (FMMP, 1984 – 2008)
- Selected all polygons that were grazing land in the first time period and not in the second
- Used aerial photo interpretation to assign current land use to converted land

Methods (cont’d)

- Assessed degree to which the remaining rangeland was protected by assembling land conservation status data (fee, easement ownership)
- Also assessed status of voluntary non-permanent protection using lands enrolled in the Williamson Act
Current land use area on 195,594 ha (486,802 acres) of former Grazing Land.

51,990 ha (128,470 acres) of former grazing land converted to rural residential.

Rangeland Conservation Status

- Fee
- Leased
- Wetlands
- No Status
- Non-renewal
Conclusions

- Direct protection remains an important strategy for conserving rangelands
  - Also an effective climate change adaptation strategy for California
  - Not many Lassen Foothills opportunities left
  - Decisions to convert aren’t just happening ranch by ranch—Agribusiness has big money and big plans for rangelands
  - Williamson Act protects ag. lands in general but does not protect rangelands from being converted to other ag. types

NEXT STEPS

- Publish the initial study results
- Additional analyses
  - Consequences of conversion for:
    - Connectivity
    - Ecosystem services (Water, diversity, food production)
    - Impacts to wildlife/habitat from hardening of agriculture
- New strategies for rangeland protection
  - Analyze recent land transactions/WA contract cancellations to see where the next big conversion will take place
  - Work with new landowner to minimize impacts/mitigate appropriately
  - Strategic mitigation opportunities for large projects
  - Get more $$ for direct protection
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Conversion Patterns (1984 – 2008)

Current land use area on 195,594 ha (486,802 acres) of former Grazing Land.

Biggest footprint: Low density development

51,990 ha (128,470 acres) of former grazing land converted to rural residential.

Rangeland Conservation Status

- Forested
- Wetlands
- Closed
- Open

75.7% of 159,280 ha (400,000 acres) of former rangeland.
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