Invaders in California's rangelands

Californian ranchers discuss their responses to weeds, the loss of productivity caused by invasive species, and suggestions for agencies and policymakers

The Study:

To identify practical impediments to weed control on rangelands, University of California-Davis researchers surveyed and interviewed 202 Californian ranchers in 2006.

The Problem:

- Invasive plants, or non-native **weeds**, affect California's economy and environment by crowding out beneficial plants in rangelands.
- Many landowners consider **yellow starthistle** the worst of California's invaders. It eliminates livestock forage and reduces wildlife habitat. Its spines can injure cattle.
- Together, control costs and forage loss due to yellow starthistle are estimated at **$17 million** annually.
- Loss of water to yellow starthistle has been valued at **$16-56 million** per year.
- In spite of extensive control method research, abundant information, and agricultural advisor networks, yellow starthistle and other weeds **continue to spread**.

Key Results:

- Although ranching is barely profitable for most operations, a large majority of ranchers must **invest scarce resources** into weed control.
- Many recommended control methods are **difficult** or **impossible** in landscapes that are steep and rocky or in **unpredictable** weather.
- Lack of **time and money** hinder control.
- Uncontrolled patches of weeds increase control costs and decrease control efficiency on **adjacent properties**, reducing incentives for managers to control weeds.

This policy brief is intended to convey pertinent study results to Californian policymakers. It was prepared by University of California researchers and has been distributed to the Californian Department of Food and Agriculture, the California Department of Transportation, and the offices of the following legislators representing study-area counties: Tom Berryhill, Dave Cogdill, Dave Cox, Alyson Huber

Recommendations based on study results...

...for state and county agencies:

- ❑ Existing educational efforts targeting ranchers should emphasize **early response** to new infestations and correct application of control methods **under varying environmental conditions**.
- ❑ **Coordination and cooperation** between neighbors should be a focus of response efforts.
- ❑ Control along **public roadsides** is necessary to prevent infestation of adjacent private property.

...for legislators:

- ❑ Since ranchlands provide ecosystem services, state assistance with weed control is justified. Assistance should prioritize **cross-property** control and prevention of new infestations.
- ❑ Ranchers invest resources when infestations are at their worst, so cost-share arrangements should disperse greatest assistance after the second year for **long-term** seed bank control.

Symposium signatories:

In September, 2006, study authors convened a symposium at the University of California, Davis. Attendees included ranchers, academic scientists, extension advisors, and state agency personnel. Participants discussed study results and developed the recommendations presented here. The following attendees added their names to these recommendations as signatories:

Mike Boitano, Mark Brunson, Andres Carrillo, Stephanie Diaz, Tawny Mata, Libby Rader-Kassik, Kevin Rice, Jeremy Smith, Ayzik Solomeshch, Tracy Valentovich, Wendy West, Alpa Wintzer

Want to know more?

Study authors (UC Davis): Clare Aslan (ceaslan@ucdavis.edu), Rebecca Epanchin-Niell, Matthew Hufford, Jeffrey Port, Jason Sexton, Timothy Waring

Additional information:

- ❑ Aslan, C. E., M. B. Hufford, R. S. Epanchin-Niell, J. D. Port, J. P. Sexton, and T. M. Waring. 2009. Practical challenges in private stewardship of rangeland ecosystems: yellow starthistle control in Sierra Nevadan foothills. Rangeland Ecology and Management **62**:28-37.
- ❑ Epanchin-Niell, R. S., M. B. Hufford, C. E. Aslan, J. P. Sexton, J. D. Port, and T. M. Waring. 2009. Controlling invasive species in complex social landscapes. Frontiers in Ecology and the Environment, doi:10.1890/090029.
- ❑ University of California's Weed Research and Information Center: http://wric.ucdavis.edu