

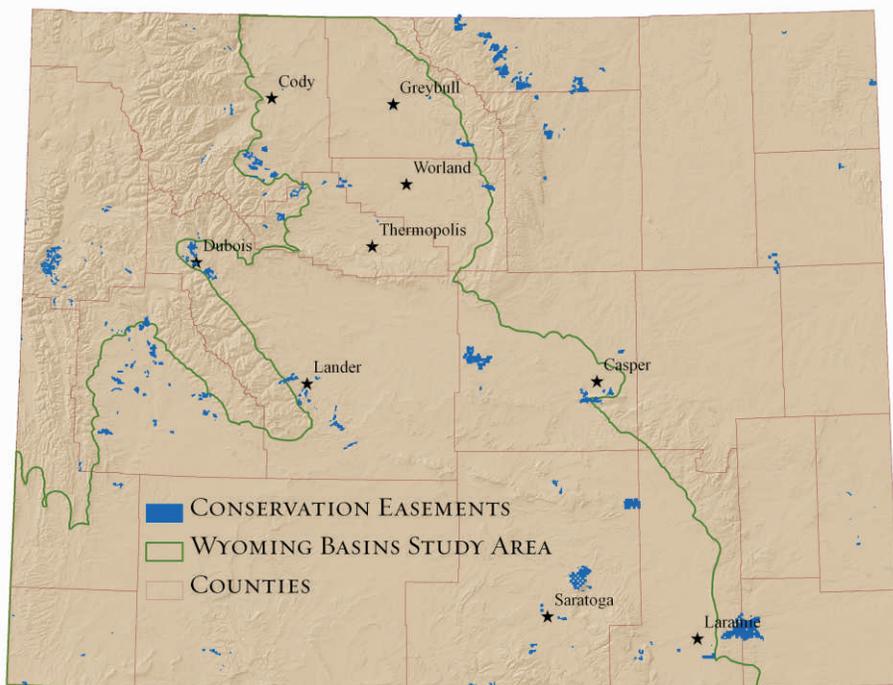
EVALUATING CONSERVATION EASEMENTS IN WYOMING



Effects on development and sagebrush habitat

CONSERVATION EASEMENTS

A conservation easement is a voluntary agreement between a landowner and a land trust in which the owner sells or donates their right to subdivide and develop their property. Easement goals may include protecting wildlife habitat, rare species, and water resources or providing buffers around or corridors between existing protected lands. Despite the widespread and increasing use of easements, there have been few evaluations of how well easements are achieving these goals.



Nearly 500,000 acres are currently under conservation easements with land trusts in Wyoming. In this study we focused on easements held by The Nature Conservancy, because they are chosen strategically to meet conservation goals.

MEASUREMENTS IN SAGEBRUSH HABITATS

We measured 27 biological characteristics in sagebrush habitats that represented plant diversity and composition, shrub structure and vigor, soil stability and nutrient cycling, and wildlife use.



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Collecting data in sagebrush habitats during the summer of 2008.



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Conservation easements restrict rural housing developments.

STUDY OBJECTIVE

Determine how much road and structure development may have occurred if conservation easements had not been established and how development restrictions associated with easements may have affected conditions in sagebrush habitats.

METHODS SUMMARY

- The study included 23 properties with easements and 20 properties without easements, located close to each other.
- Properties were located in areas with high versus low pressure for residential development to differentiate effects of easements from development more generally.
- We measured numbers of roads and structures and the percent area of each property occupied by these types of development, using aerial imagery. Biological characteristics were measured in sagebrush habitats on each property.
- Land managers were surveyed to determine if any differences in biological characteristics between properties with and without easements may be explained by differences in management rather than development restrictions associated with easements.

EASEMENTS REDUCED DEVELOPMENT

- In areas with high residential development pressure, properties with easements had fewer structures and roads and smaller areas occupied by these developments in 2006 than properties without easements.
- Figure 1 illustrates the amount of road and structure development that may have occurred on properties that currently have easements, if those easements had not been established.

RESIDENTIAL DEVELOPMENT EFFECTS

- The amount of development in the general area had a greater effect on some biological characteristics than did the presence of an easement.
- Areas with high development pressure had fewer burrowing mammal species and higher amounts of exotic plant species than low development pressure areas.

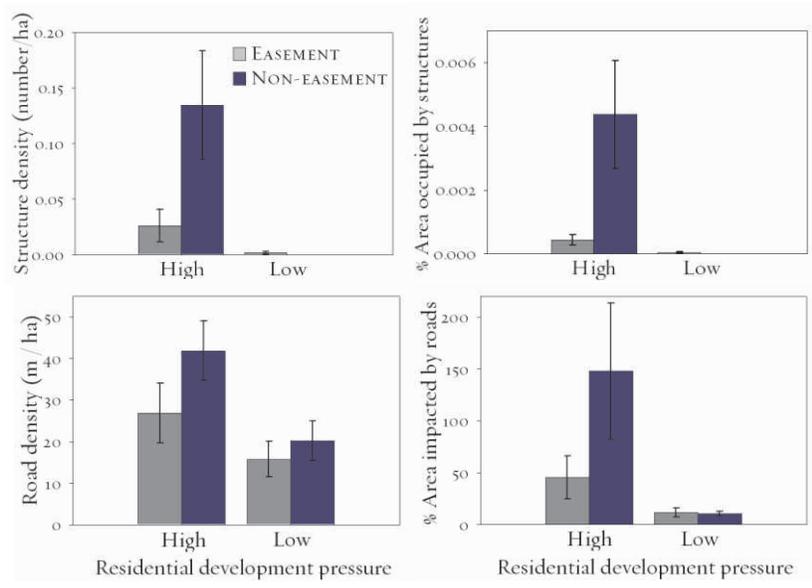


Figure 1. Average and variability (bars) of the four measures of development in 2006 on properties with and without easements.

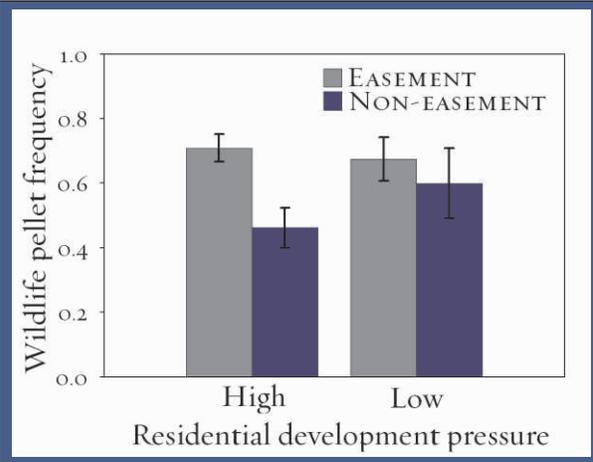


Figure 2. Average and variability (bars) of wildlife pellet frequency on properties with and without easements.

MORE WILDLIFE USE ON EASEMENTS

- Easements had greater evidence of use by wildlife species including deer, antelope and rabbits, than properties without easements in areas with high development pressure.
- Easement properties in the high development areas had similar wildlife use as all properties in low development areas.
- Most other biological characteristics did not differ with easement presence, but in areas with high development pressure sagebrush shrubs were shorter and their densities greater on easement properties.



LAND MANAGEMENT

- Easement property managers tended to seek out technical assistance organizations more often than non-easement managers (23 versus 5 times, collectively).
- There were no differences in weed control, livestock grazing, and numbers of implemented range improvement or wildlife enhancement projects between properties with and without easements, as reported by 24 land managers. 59% of those surveyed responded.

CONCLUSIONS

Our findings show that easements have been effective at limiting residential development that may have occurred without their use. The development restrictions associated with easements appear to have maintained habitat for some wildlife species in areas where residential development is already occurring. Overall, biological characteristics were related to development or restrictions placed on development through easements, rather than to land management practices.

