CHANGING CONSERVATION EASEMENT STRUCTURES: PAYMENTS FOR ECOSYSTEM SERVICES (PES)

Dr. Stephanie Larson
University of California Cooperative Extension
Division of Agriculture & Natural Resources (ANR)
Santa Rosa, CA

Dr. Van Butsic, UC Berkeley
Reid Johnson, UC Berkeley

ECOSYSTEM SERVICES MARKETS ~ IMPACTS TO LAND USE

"Market Driven" as opposed to Functionality
Certain credits are more sexy than others, (Carbon vs. food, biodiversity)
Selling an Ecosystem Services (ES) is not an outcome of management practices
Driven by NGOs, as opposed to science based policy

WORKING LANDSCAPES – AREAS FOR INVESTMENT REDUCING CLIMATE CHANGE RISK

Regulating - Carbon sequestration
Provisioning - Food

Supporting - Water yield
Cultural - Scenic value

OBSTACLES FACING LANDOWNERS AS ECOSYSTEM SERVICE MARKETS EMERGE

Language is a jargon-rich, amalgam of scientific, financial, regulatory and conservation vernacular;

Lack of understanding of the long term economic impacts;

Lack of tools to assess ecosystem services potential;

Regulatory driven as opposed to incentive driven;

Scales public vs. private lands;

Marginal profitability most agricultural operations (working landscapes);

Integration multiple uses, multiple benefits and multiple beneficiaries

CONSERVATION EASEMENTS

Ecosystem Service benefits not always taken into account when land use and policy decisions are made;

Challenge - to quantify biophysical and economic values of ecosystem services provided by conservation easements;

Document - ecosystem services from conservation easements and examine additional benefits received not previously documented;

Land Conversions – conversation of lands of lessor agricultural value but higher ecosystem service values.

WHY THIS STUDY?

Study alternative payment structures for conservation easement

- In context of rancher community & identity
- Explore complementarities between conservation easements and PES schemes through the lens of identity economics (i.e. Akerlof and Kranton 2000).

Testable Hypothesis

- Landowners that strongly identify as ranchers or farmers;
- Landowners that strongly identify as members of a ranching/farming community;
- A greater preference for annual payments over lump sums, or a combination of both, than those landowners that do not.

CONSERVATION EASEMENT

Conservation group motivations include containing urban sprawl, preserving open space, and preserving ecosystems services such as carbon sequestration, soil health, biodiversity (Chang 2011).

Landowner motivations include preservation of rural lifestyles, intergenerational financial stability, debt repayment (Rilla and Solokow 2000).

Hedonic models based on development rights; restricts future development

Impacts on Property Taxes reduction have can occurred, but recently have seen tax increases

CONSERVATION EASEMENTS

An agreement between a landowner and a conservation group that restricts development rights on a parcel of agricultural or undeveloped land in exchange for payment.

- Primary Channel for protecting private land against development
- Voluntary Agreements
- Landowner receives a one-time lump sum payment and long term tax benefits.

Conservation easements are growing in popularity: nationwide approximately 3 million acres in 2006, 8 million in 2008, 24 million in 2016.

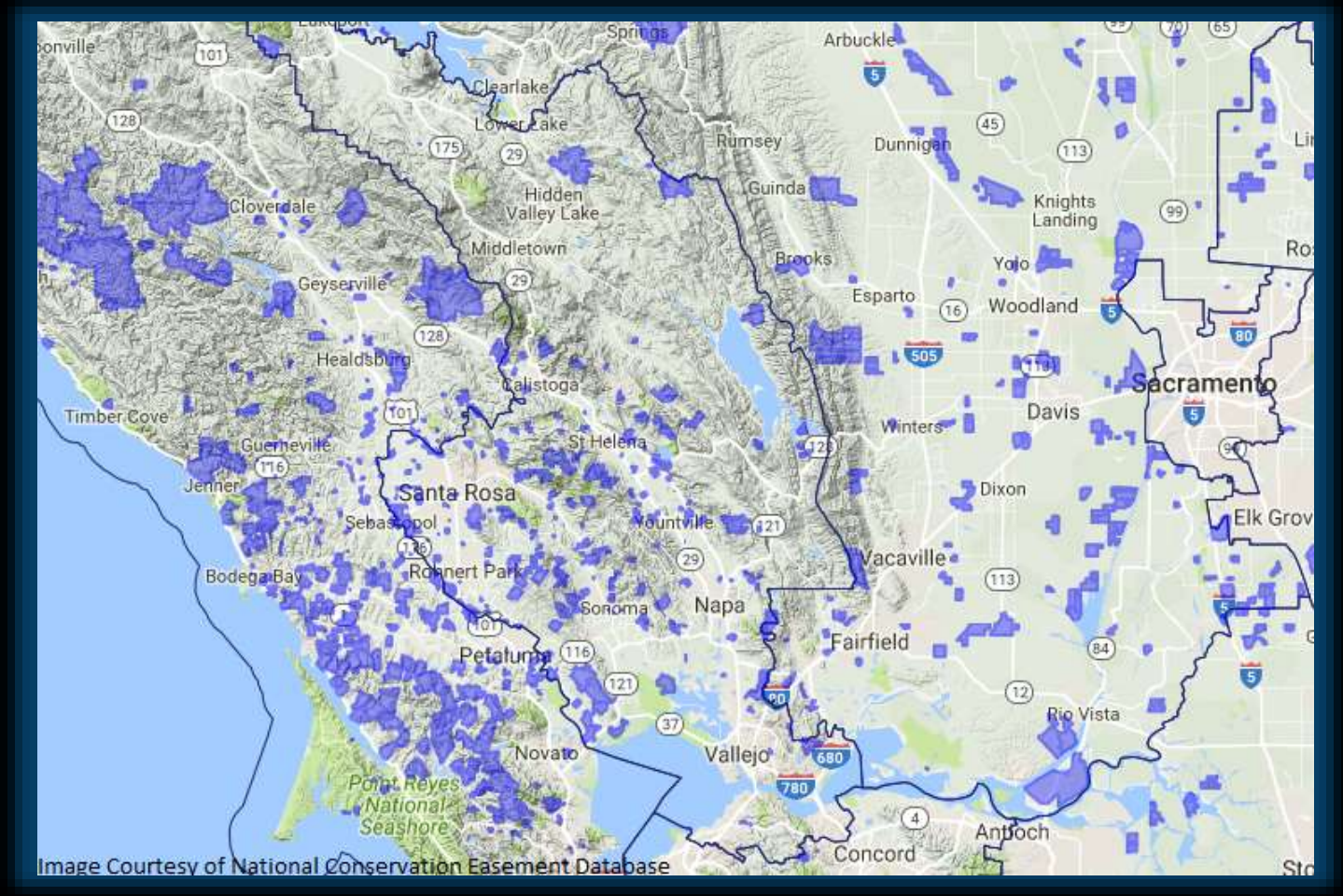
RESEARCH AREA

Sonoma County

Protected over 106,000 acres through easements since 1990

Marin County

Protected over 48,000 acres through easements since 1983



Land trusts include Marin Agriculture Land Trust & Sonoma County Agricultural Preservation & Open Space District

DATA - SURVEY

Survey landowners that sold conservation easements over the past 25 years:

- Obtain conservation easements by selling their development rights;
- Purchased land that carried an easement at the time of purchase;

Also examined:

- Landowners that began process of selling an easement but did not complete the sale;
- Landowners that have never considered selling an easement.

DATA – OTHER SOURCES

Transaction data related to the easement or land sales from one or more of these sources:

- County Tax Assessor's offices
- California Department of Conservation
- Zillow

Secondary data included:

- Easement sale price
- Assessed value of land before easement sale
- Assessed value of land after easement sale

SURVEY QUESTIONS

Sample survey questions:

- What is your family's primary source of income?
- What percentage of your income comes from agricultural activities?
- What would be a fair annual PES payment for an easement on your land?
- How satisfied were you with the process?
- What would be a fair lump sum price for an easement on your land be?

SURVEY ANALYSIS

- $Preferences_i = \alpha + \beta_1 Identity_i + \beta Demographics + \varepsilon_i$

- Where Preference measure of preference for PES versus lump sums (possibly a ranking or the difference in ranks);
- Identity measure of rancher identify landscapes dependences, stated identify, community strength);
- Demographics landowner and parcel traits (income, parcel size, parcel productivity, etc.);
- epsilon is an error term.

SURVEY RESULTS

Proceeds from easements sales;

Satisfaction with purchase price;

Easement requirements;

Future linkage between ecological analysis with public, social evaluation and lay communication.

SURVEY RESULTS

Economic models to predict ecosystem service values;

Insight into higher relief; increase options for landowners;

Understand the importance of implicit and explicit values;

Educational opportunities to policy makers, landowners and society

CONSERVATION EASEMENT PAYMENTS

Managed by Land Trusts - occur on Private Lands

Based on Hedonic evaluations - development potential & loss of habitat

What if the easements were also based on Benefit-relevant indicators (BRIs) –

- Assessments made on if there is a demand for the service, how much it is used (for use values) or enjoyed/valued (for nonuse values);

- Whether the site provides the access necessary for people to benefit from the service.

REGULATING

Control of climate, filtration of water; and growth and removal of vegetation.

Benefit-relevant indicators:

- Decrease wildfires
- Qir quality
- Flood risk reduction

CULTURAL

Nonmaterial benefits obtained from ecosystems such as spiritual and recreational benefits;

Benefit-relevant indicators:

- Improved health
- Biodiversity
- Wildlife viewing
- Property values

PROVISIONING

Goods or products obtained (provided) from ecosystems such as the production of food and water;

Benefit-relevant indicators:

- Endangered species habitat
- Soil Health
- Climate change reduction

SUPPORTING

Nutrient cycles, pollination, and habitat for wildlife.

Benefit-relevant indicators:

- Pollinators
- Increased specialty crops
- Water Quality

THROUGH CONSERVATION EASEMENTS
Improve ecosystem function & economic incentives

Market Recognition

Payments for Ecosystem Services (PES)

Green labeling

Green investments

Voluntary Action

Increased acreage in conservation easements

Non agriculture / stewardship ethic

Regulatory Action

Reduce need for regulations

Reduce Climate Change Risk

FUTURE CONSERVATION EASEMENTS PAYMENT PROGRAM

Money Use

Ecosystem Services Investments

Land investment

Family & Personal Use

Ownership Changes

Generational investments

Increase programs to incentivize management practices

Satisfaction

Maintain marginal agricultural lands

Succession, ability to retain land in family

Increased habitat & reduce fragmentation

MANAGEMENT DECISIONS

Successful management will require the establishment of useful goals & objectives for ecosystem services;

Baseline data;

Detect change on the land that may be due to management actions or disturbances;

Science based management practices that improve ecosystem services;

Programs that provide incentives to promote or protect working private lands.

NEXT STEPS

- Adoption of an Ecosystem Service Framework
- Develop Land Trusts Partnerships
- Invest in payment structures for Conservation Easements based on Ecosystem Services
- Recognize management practices that impact Ecosystem Services
- Provide science based information for policy changes

VOLUNTARY VS REGULATED

Need to change the paradigm of Conservation Easements

Recognize all benefit relevant indicators from ecosystem services provided by conservation easements

Need to change the paradigm of working private lands

Not regulated but with voluntary programs with economic incentives for improved adaptive management practices on conservation easements

THANK YOU – QUESTIONS

DR. STEPHANIE LARSON
SLARSON@UCANR.EDU