



The USDA Conservation Reserve Program

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Overview

Introduction to the CRP

- Context and Objectives
- PES Design and Auctions

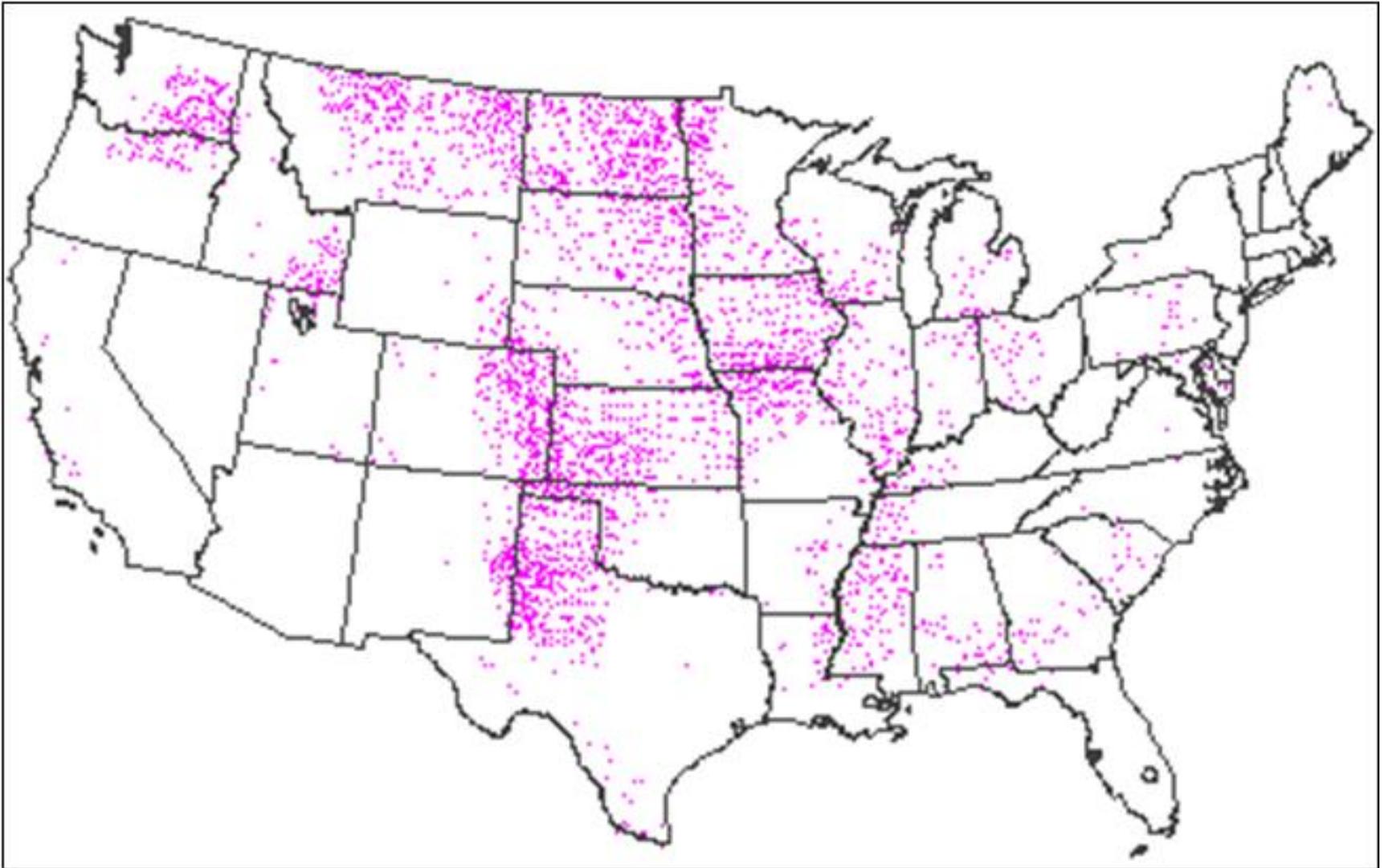
Efficiency and Effectiveness of the CRP

- Auction Efficiency
- Environmental Effectiveness

Introduction to the CRP

- National agri-environmental programme: aim to reduce the environmental impacts of agriculture
- Targets: erosion reduction; improved water quality; wildlife and biodiversity benefits; and air quality
- Incentives for land retirement, and implementation of management practices
- 32 million acres enrolled; 10 - 15 year contracts
- Budget: USD 1.7 billion per year

Distribution of General Sign-up, 2008



- Note: Each dot represents 10 000 acres.
- *Source:* ERS based on data from Farm Services Agency, USDA.

CRP Financing and Payments for Environmental Benefits

- **Financing:**
 - Government financed program, securing public environmental benefits
 - Landowners, farmers, are service suppliers
- **Payments:**
 - Annual rental payments, by acreage
 - One-off cost-sharing for up to 50% of initial costs

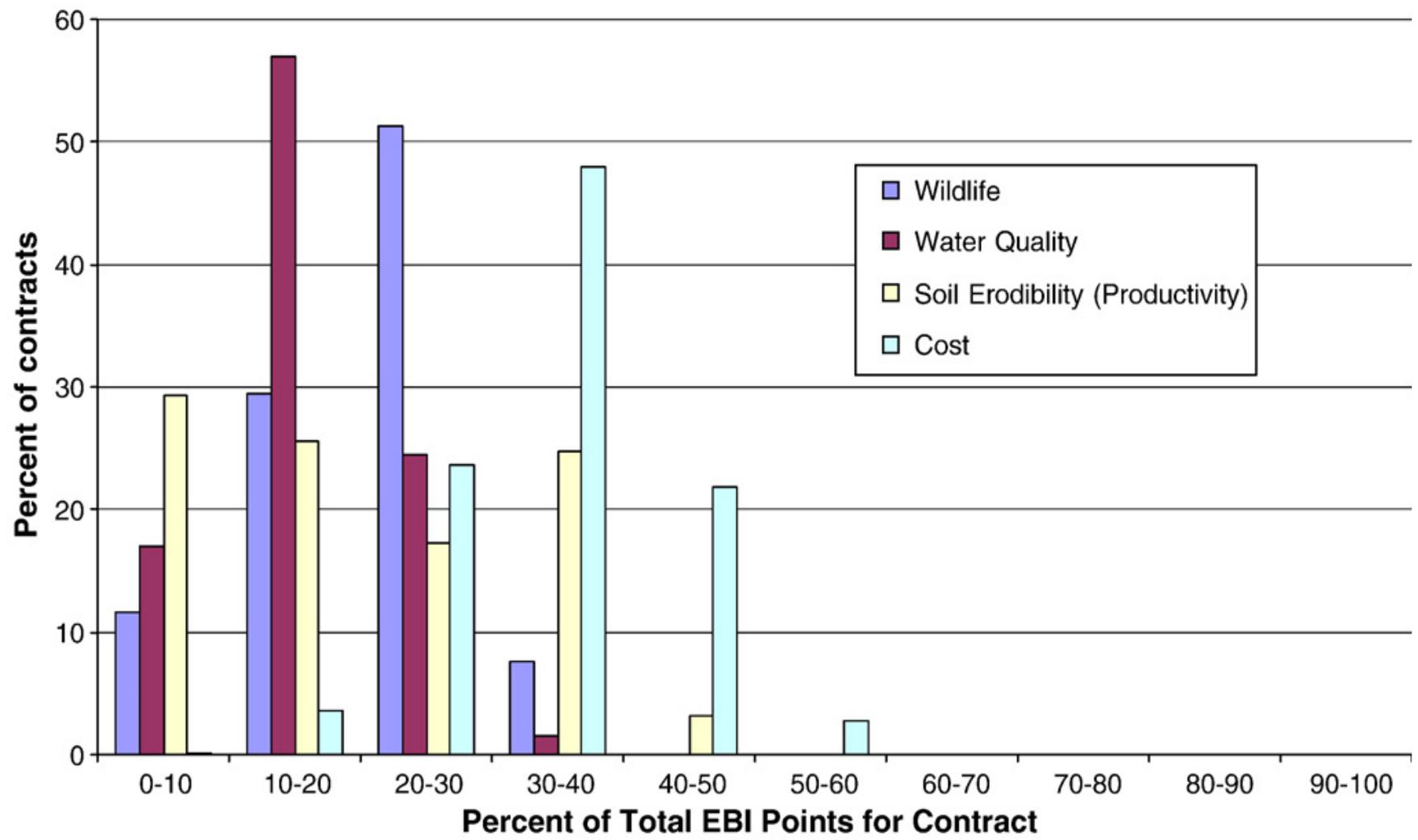
General Sign-Up Auctions

Auction	Single shot, sealed bid, discriminatory price auction
Pricing cap	Pricing cap set for each bidder, depending on local land rental rates and bid specific soil productivity rating. The bid caps are revealed to bidders
Bids	Information on environmental quality of the land, proposed management practices, requested PES payment, amount of cost-share requested.
Bid selection	Based on Environmental Benefit Index, which includes costs evaluation.

Environmental Benefit Index

- Wildlife habitat – 100 points
 - Water quality – 100 points
 - Erosion reductions – 100 points
 - Air quality – 45 points
 - Enduring benefits – 50 points
 - Cost – 150 points - i.e. not benefit per cost
- Equal marginal benefits?
- National EBI → local specificity reduced

Relative share of points awarded by category in accepted bids, 1997 to 2003



Source: Claassen *et al.* 2008

Reflecting Opportunity Costs in Payments

- CRP uses discriminatory price auction, aiming to set price equal to each bidders opportunity costs
 - this maximises the purchasable benefits of the programme
- However, some evidence competition is not particularly intense, limiting the efficiency of the payments
 - Over 4 auctions 65 to 75% of bids were accepted (Claassen *et al.* 2008)
 - Empirical analysis suggests payments are 10 to 40% above opportunity costs (Kirwin *et al.*, 2005)

A Revealed Pricing Cap

- One potential cause of bid inflation is the *revealed* pricing cap
 - The cap successfully avoids unreasonably high bids
 - However, *revealing* the cap encourages over-bidding, especially amongst low-cost bidders (which are the one that are typically accepted)
 - The *revealed* cap also reduces incentives for high-quality bidders to offer further environmental improvements

Summary

- The CRP utilises a single shot, sealed bid, discriminatory price auction
- The efficiency of the payments is dependent on strong competition
- The pricing cap effectively avoids unreasonably high bids, but revealing it compromises efficiency
- A national EBI is used to evaluate the potential benefits of the bids. It increases the ability of the auction to select the greatest benefits for a fixed budget, but increasing local specificity could further increase the benefits