



Landcare Research
Manaaki Whenua



**World
Resources
Institute**

Conestoga Reverse Auction

An approach to maximize cost-effectiveness of conservation payments



Suzie Greenhalgh (LCR) &
Mindy Selman (WRI)

ERS

April 17-18 2012



Reverse Auctions

Reverse Auction:

- Competitive bidding system with single buyer and multiple sellers
- Allocates funding based on cost-effectiveness
- Use budget constraint or breakpoints



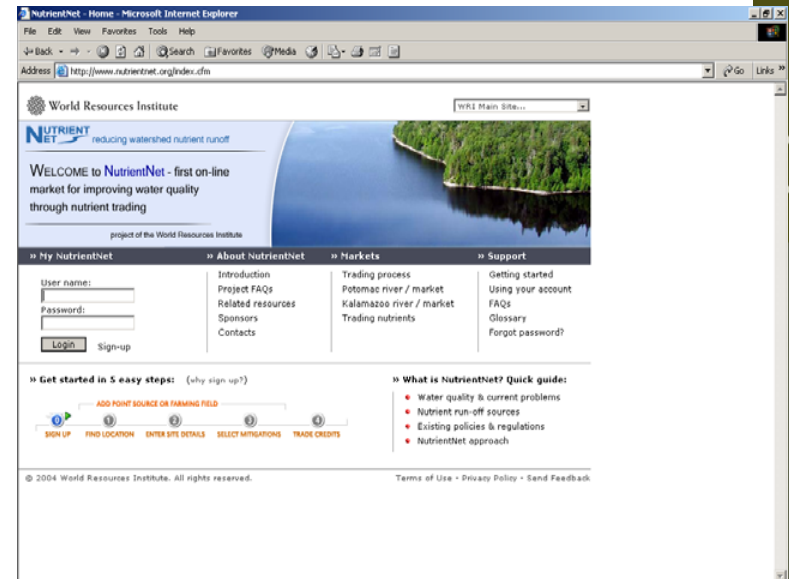
Conestoga Reverse Auction

Conestoga Watershed (PA):

- Predominantly in Lancaster County
- Phosphorus impaired watershed
- Primarily agricultural

Auction Details:

- 2 auctions conducted
 - June 2005 (trial auction)
 - Oct 2005-Feb 2006
- Budget constraint (90K – Auction 1; 450K – Auction 2)
- Aim—purchase lbs of P reduced from BMPs
- Used NutrientNet to estimate P reductions from BMP
- Bids ranked by cost-effectiveness



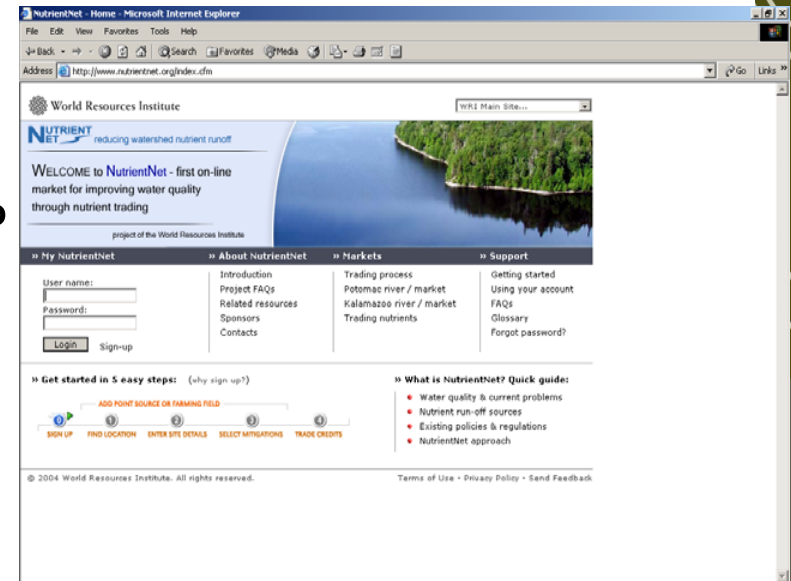
Conestoga Reverse Auction (cont.)

Auction Rules:

- EQIP-eligible practices
- Auction 1—bids constrained to EQIP standard rates
- Auction 2—no constraints on bid price

Auction Administration:

- LCCD technicians worked with local producers to estimate P reductions and determine bids
- Bids submitted up to the auction close deadline (bid revisions allowed up to deadline)
- Bids were ranked by cost-effectiveness (\$ per lb/P)
- Bids funded until auction budget was exhausted



EQIP Program

- State ranking system to allocate funds based on National, state, local resource concerns
- PA ranking forms—Livestock, Grazing, Cropland, Nutrient management, Odor control
- Ranking forms
 - include criteria such as adopting certain practices and number of BMPs being adopted.
 - rarely include measures of cost-effectiveness.
- Funding allocated according to score until budget is exhausted
- Pays cost-share of 50-75% of project cost
- Fixed rate payments for most BMPs



EQIP & Auction Comparison

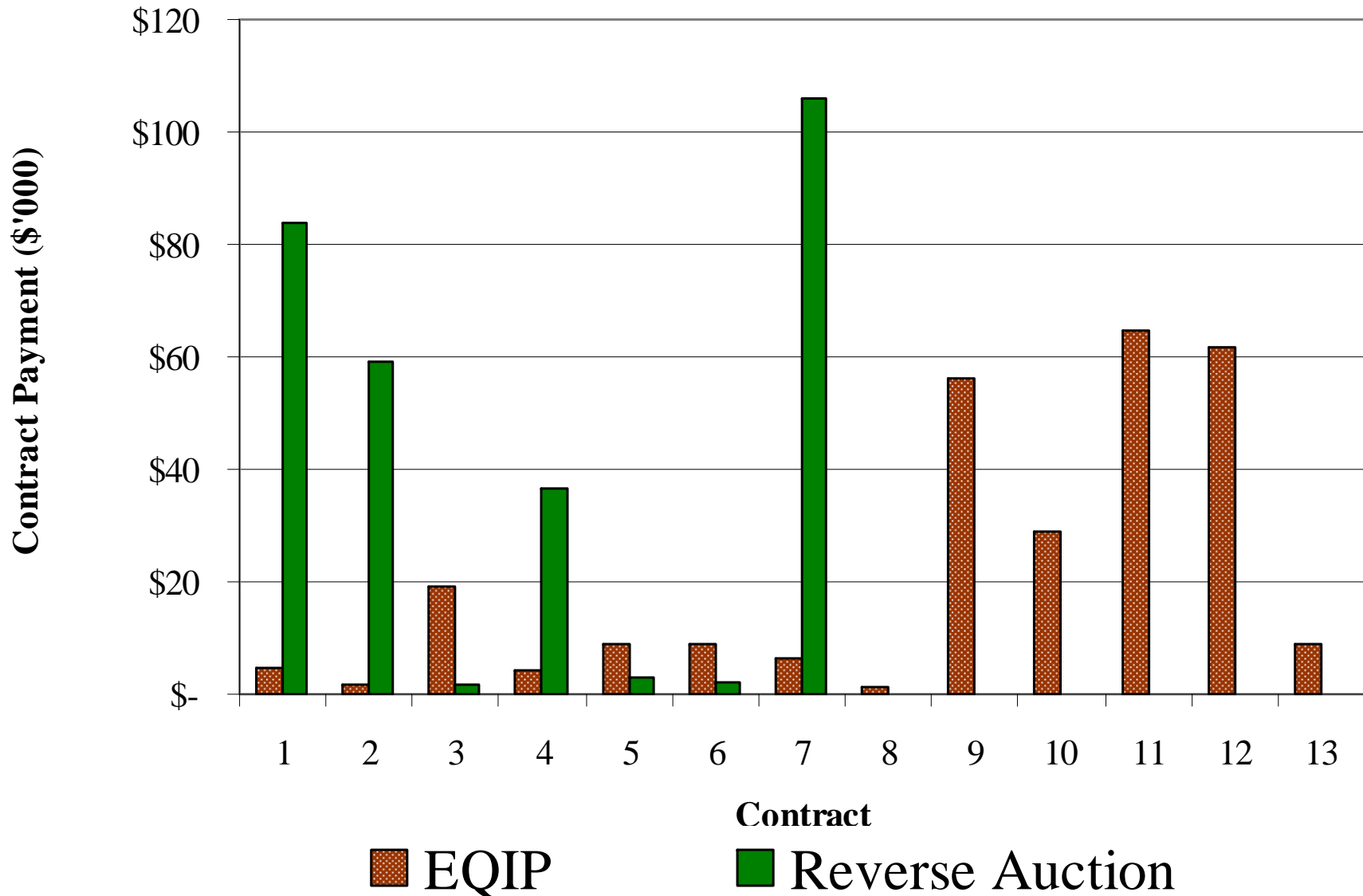
- Compared Dec 2005 EQIP funding to second reverse auction
- Used artificial budget constraint of \$293,000 for reverse auction

	No. of Applications	No. Funded Applications	Total Budget
EQIP	19	13	\$275,552
Reverse Auction (artificial constraint)	23	13 (7)	\$446,990 (\$293,000)

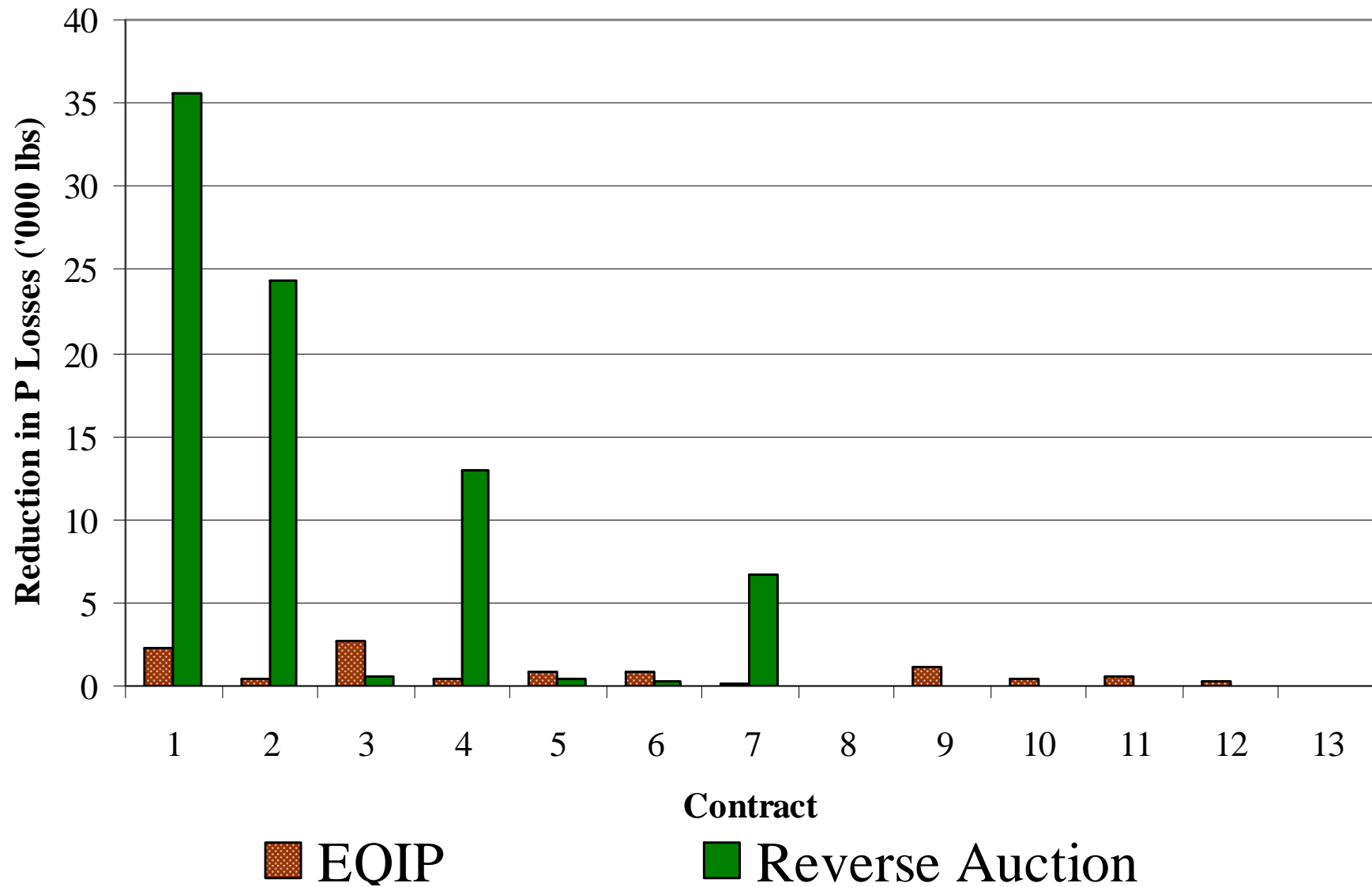
EQIP & Reverse Auction

	Livestock Management		Field Management	
	EQIP	Reverse Auction	EQIP	Reverse Auction
No. of funded projects (%)	9 (69%)	5 (71%)	4 (31%)	2 (29%)
Program Cost (% budget)	\$184,262 (67%)	\$288,957 (99%)	\$91,290 (33%)	\$3,679 (1%)
Reduction in P losses (% total reduction)	6,941 (66%)	79,982 (99%)	3,579 (34%)	805 (1%)

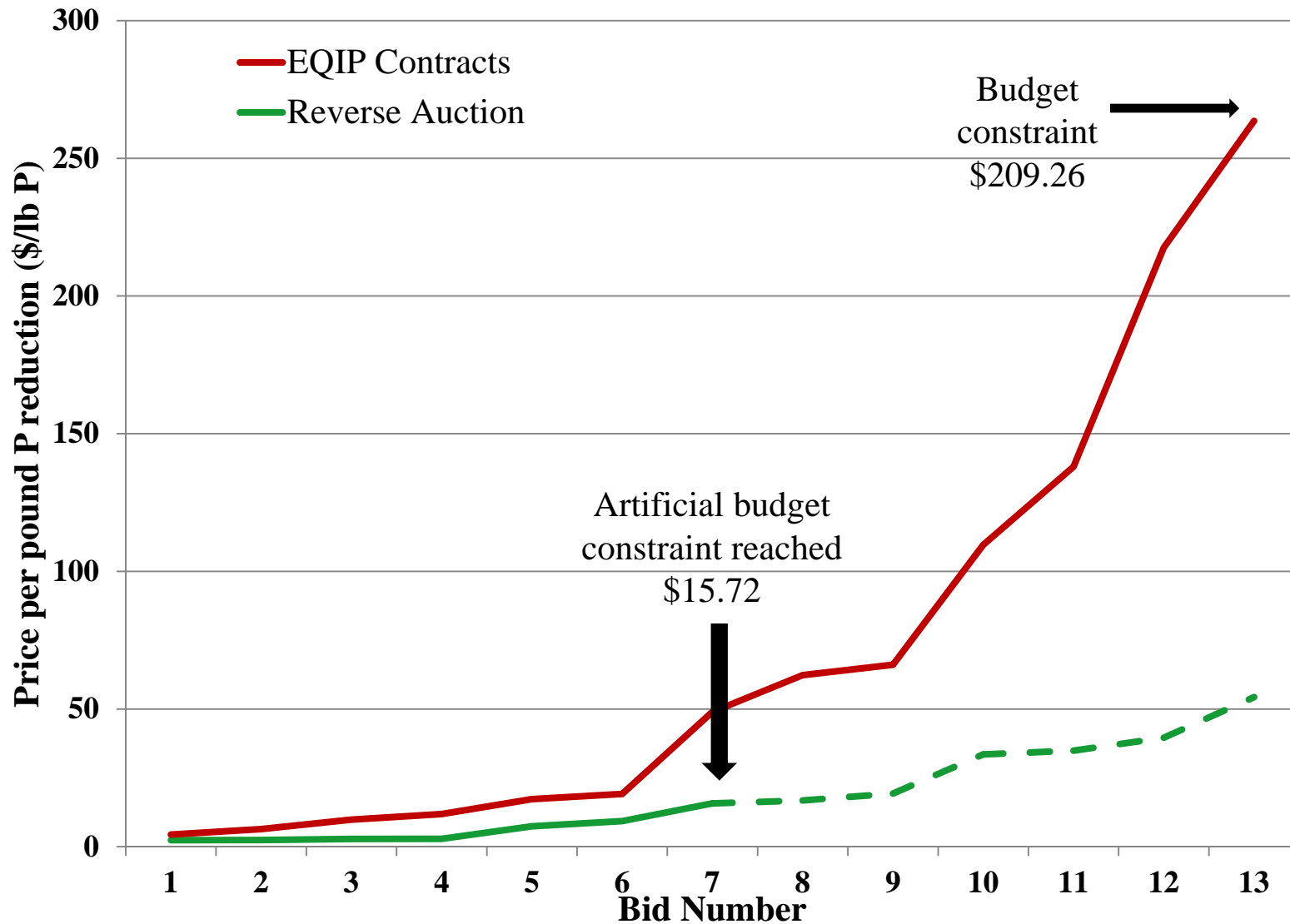
Comparing Contract Payments



Comparing P Reductions



Comparing Cost-Effectiveness



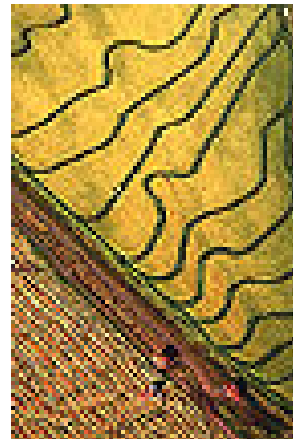
Comparing Cost-Effectiveness

Program	No. of Funded Projects	Total Cost (\$)	Total P Reduced (lbs)	Cost-Effectiveness (average \$/lb P reduced)
EQIP	13	275,552	10,520	\$26.19
Reverse Auction	7	292,635	80,787	\$3.62

Why the Difference?

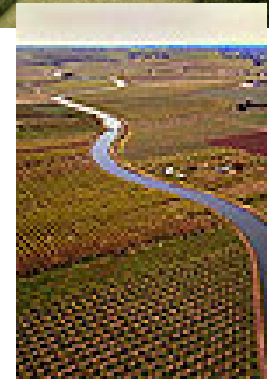
Variation in program emphasis:

- Single vs multiple resource concerns
- Environmental outcome vs BMP adoption
- Applicant pool



Summary

- Reverse auction was 7 times more cost-effective than traditional funding
- Competitive bidding provides incentive to reveal minimum willingness to accept
- Auctions are effective mechanisms for maximizing environmental outcomes while minimizing public expenditures





Questions

Mindy Selman

(mindy.selman@wri.org)

202-729-7644

Suzie Greenhalgh

(greenhalghs@landcareresearch.co.nz)

+61-9-574 4132

**Project Partners: WRI, LCCD, Pennsylvania Environmental
Council, Conservation Fund, Natsource**

**Special thanks to: USDA/NRCS for CIG funding and access
to EQIP data**