

# **BMP Auctions:**

## **Cost-effective Watershed Management**

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# Outline

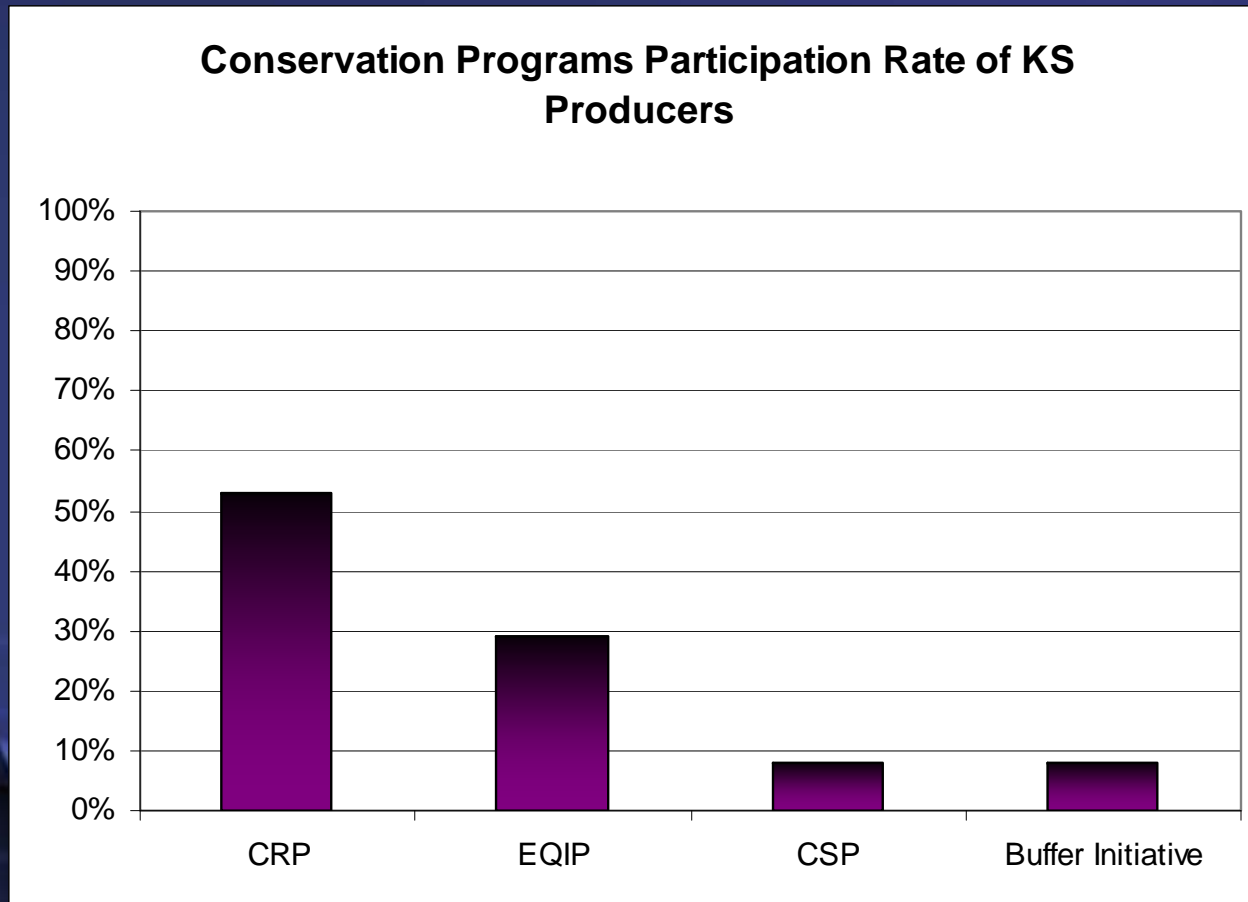
- Current Situation
- Market-based Approaches
- BMP Auction
  - Summary
  - Mechanics
  - Challenges
  - Benefits
  - Experiences
  - Outlook

# Current Situation

- Many years of effort and \$\$ spent on BMPs aimed at reducing NPS pollution
- Challenges remain
  - In Kansas (KDHE 2002), 76% of stream miles and 77% of lake acres were impaired for one or more uses
  - Traditional technical assistance/incentive-based programs unlikely to meet TMDL goals

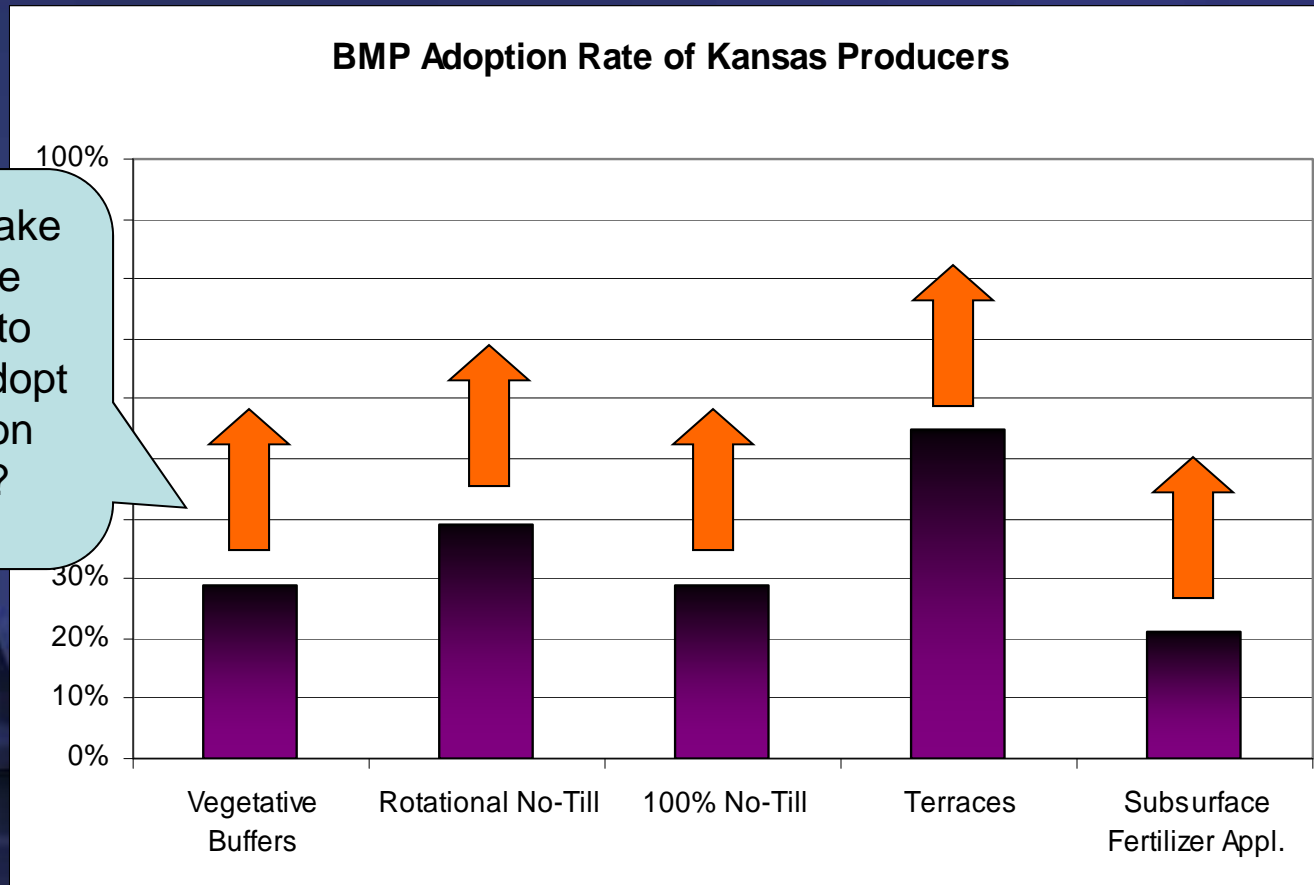
# Current Situation

- Results from recent survey of KS producers



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What will it take to get more producers to voluntarily adopt conservation practices?

# Market-based Approaches

- Much interest in market-based approaches
- NRCS Strategic Plan (2005-2010) lists “Market-Based Approaches” as one of three overarching strategies
- Success in Air Quality Trading
- Concepts now being applied to Water Quality Trading
- One hybrid-type approach to be used in Kansas: BMP Auction (a.k.a. Reverse Auction)

# BMP Auction - *summary*

- Producers compete by submitting bids to supply the buyer (e.g., state agency) with WQ improvements
- Bids are ranked by amount of WQ improvements generated per dollar
- Producer who offers WQ improvements at lowest price is contracted with first
- Process repeated until a predetermined point is reached
- BMP auctions allow buyer to identify and purchase the most cost-effective WQ improvements for a specified budget

# BMP Auction - *mechanics*

Producer:

- Chooses a BMP
- Determines # of acres treated
- Submits a bid on price per treated acre basis

<b>BMP</b>	<b># of Acres Treated</b>	<b>Bid (price/treated acre)</b>
Vegetative Buffer	40 acres	\$10.00/acre
100% No-Till	400 acres	\$15.00/acre
Subsurface apply P	600 acres	\$3.50/acre
Take Land out of production & establish grass	20 acres	\$50.00/acre



# BMP Auction - *mechanics*

Program managers:

1. Rank the bids in descending order based on Benefit/Price Ratio
2. Contract with producer who can provide the greatest WQ benefit for the price

BMP	Atrazine	Total P	Nitrogen	Sediments	Weighted Benefit/Price		Time Period (years)	Yearly Payment	Total Payment
					Score	Ratio			
Vegetative Buffer	6%	13%	2%	23%	43	8.60	2	\$1,000.00	\$2,000.00
Subsurface apply P	0%	8%	3%	0%	11	3.00	2	\$2,100.00	\$4,200.00
100% No-Till	0%	10%	1%	34%	45	3.00	2	\$6,000.00	\$12,000.00
Take Land out of Production & Establish Grass	25%	25%	5%	34%	89	1.27	2	\$1,400.00	\$2,800.00

3. Repeat process until a pre-determined point is reached
  - a) Funds are exhausted
  - b) Not meeting a certain Benefit/Price Ratio

# BMP Auction - *challenges*

- Assigning weight factors
- Determining WQ Improvements

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## SIMPLE

- Less time
- Less effort
- Less accurate

## COMPLEX

- More time
- More effort
- More accurate

# BMP Auction - *challenges*

- Targeting
  - Local expertise determines which part of a watershed to focus efforts on
  - GIS mapping or modeling determines watershed or sub-watershed to focus on
- Determining WQ Improvements
  - General Assumptions: e.g., Vegetative Buffer reduces sediment loads by 50%
  - Modeling: based on characteristics of land, e.g, a vegetative buffer reduces sediments by 43%

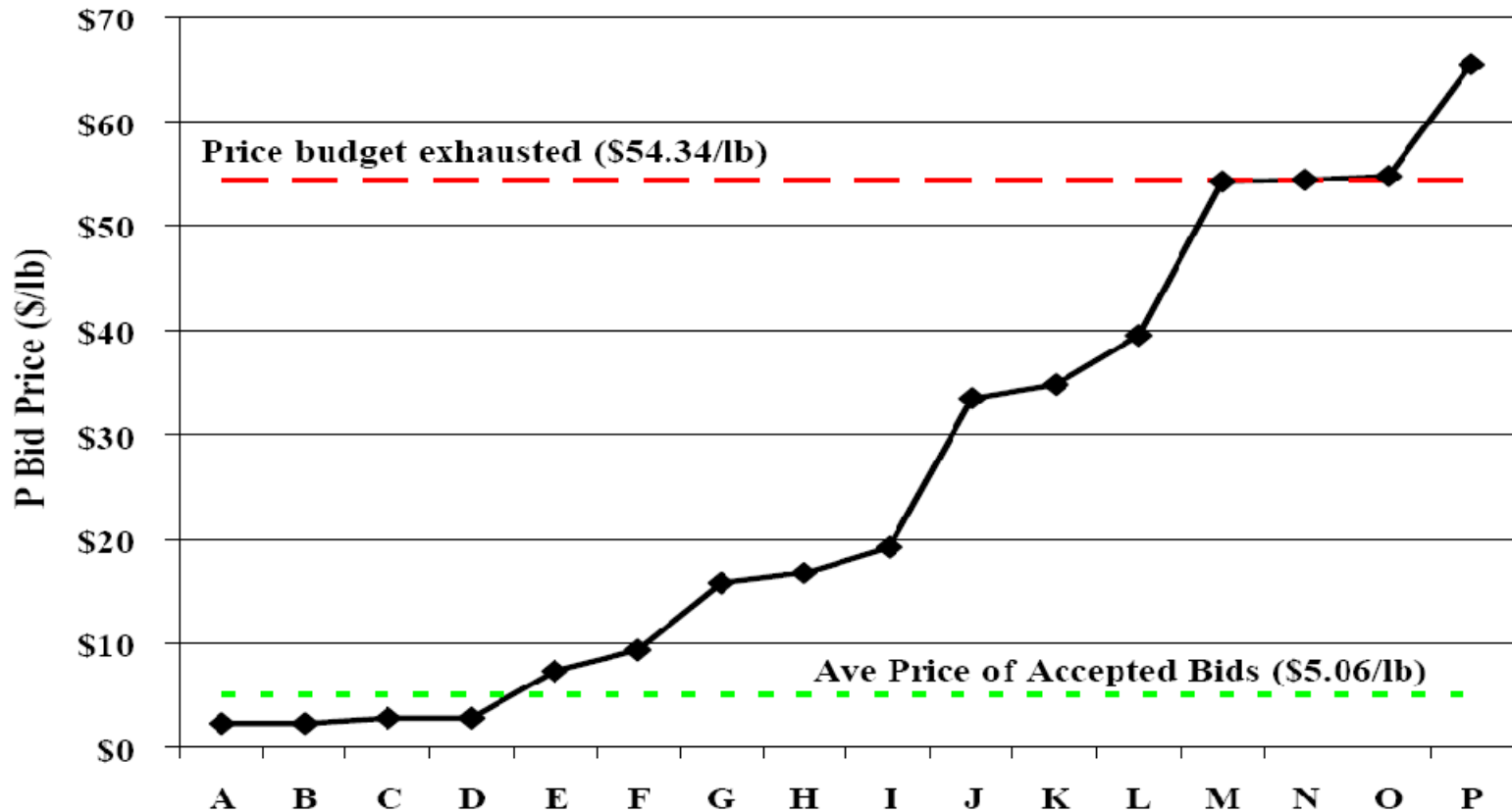
# BMP Auction - *benefits*

- Several benefits to coupling a BMP Auction with flexible implementation funding:
  - Funds can be targeted to highest impact investments and exceed limits of existing programs
  - Producers offered flexibility of choosing alternative BMPs that work best for their operation
  - Provides valuable insights into the incentive levels required to adopt BMPs
    - Guide future policies and investments

# BMP Auction - *experiences*

- Conestoga Watershed, Lancaster County, PA
  - Allowed producers to submit bids for the installation of BMPs
  - Overall, \$486,000 allocated to producers
  - 92,000 lbs. P reduction = 8.4% reduction in annual P loading in watershed
  - \$5.28 / lb. of P reduction
  - Used in place of EQIP – producers were not allowed to piggy-back funds

# Conestoga Auction Bid Price



Budget = \$450K  
Actual \$ spent ~ \$447K

Farmer

# BMP Auction - *experiences*

- Similar to:
  - General CRP Sign-up
  - EQIP (prior to 2002)
  - Wetlands Reserve Program Reverse Auction
- But, different...
  - More BMP options and flexibility
  - Different methods of targeting and determining WQ improvements
  - Can work independent or in conjunction with existing conservation programs

# BMP Auction - *outlook*

- In Kansas:
  - WRAPS demonstration project (Pomona Lake WRAPS)
  - WRAPS implementation projects
- In Kansas and Missouri:
  - Marais des Cygnes Targeted Watershed Grant proposal



# Next Steps for Pomona Watershed

- If there is interest...
  - Need your input for developing BMP Auction framework
  - Incorporate modeling results
- Next time
  - I'll provide a draft of a BMP Auction sign-up sheet
  - You will have a chance to provide more input

Questions?