

Reverse Auctions for Conservation Programs: *Experience from the 2006 and 2007 WRP Pilot Programs*

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Providing Environmental Services from Agriculture in a
Budget-Constrained Environment

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Disclaimer

Thoughts and opinions presented today are those of the authors and do not represent those of Natural Resources Conservation Service or USDA.



Outline of Presentation

- What is a Reverse Auction (RA)
- What are the goals of an RA?
- RA “Stylized” example of what we hope to see
- NRCS RA pilot study
 - States Covered
 - Activity Levels
 - Bid Amounts and Apparent Savings
 - Causes of a drop off in savings and interest
 - Lessons Learned

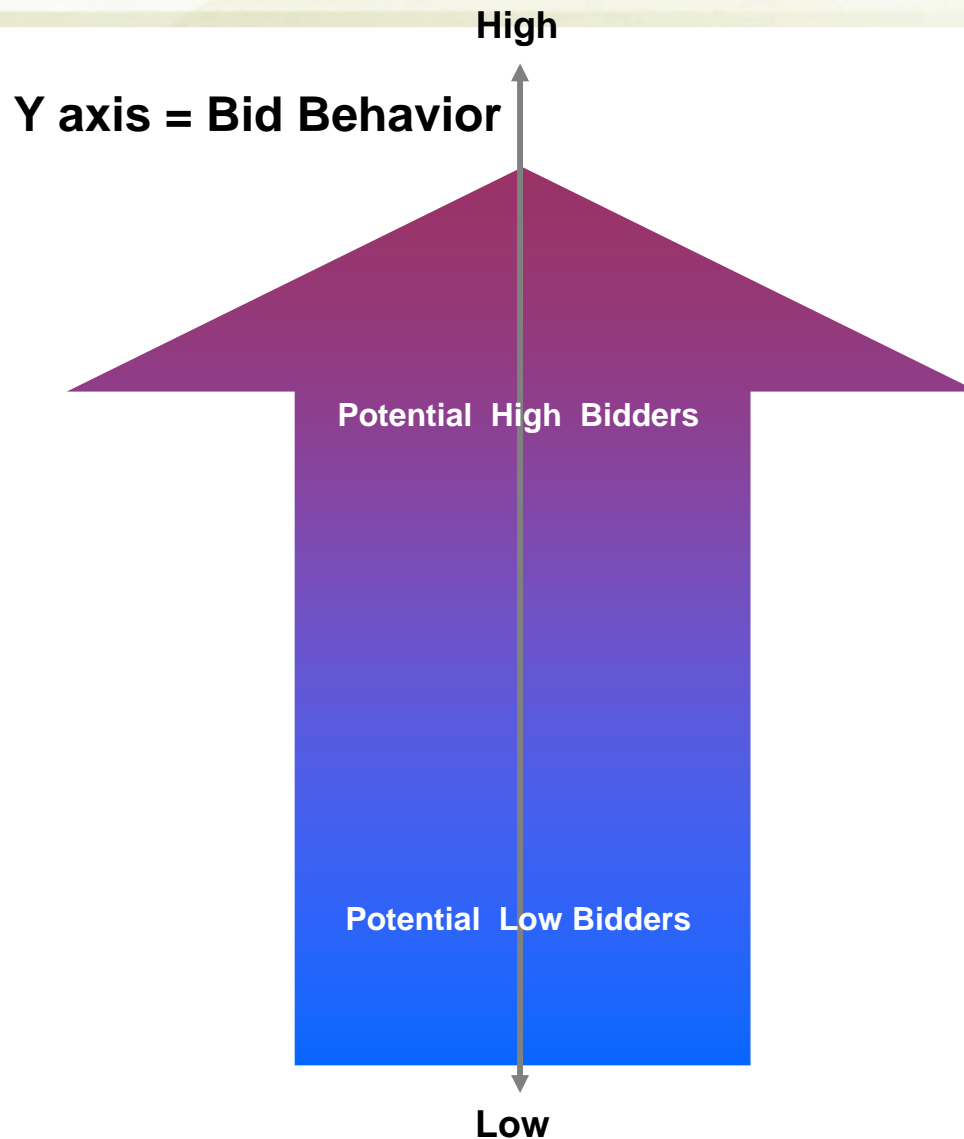


RAs and what bidding accomplishes

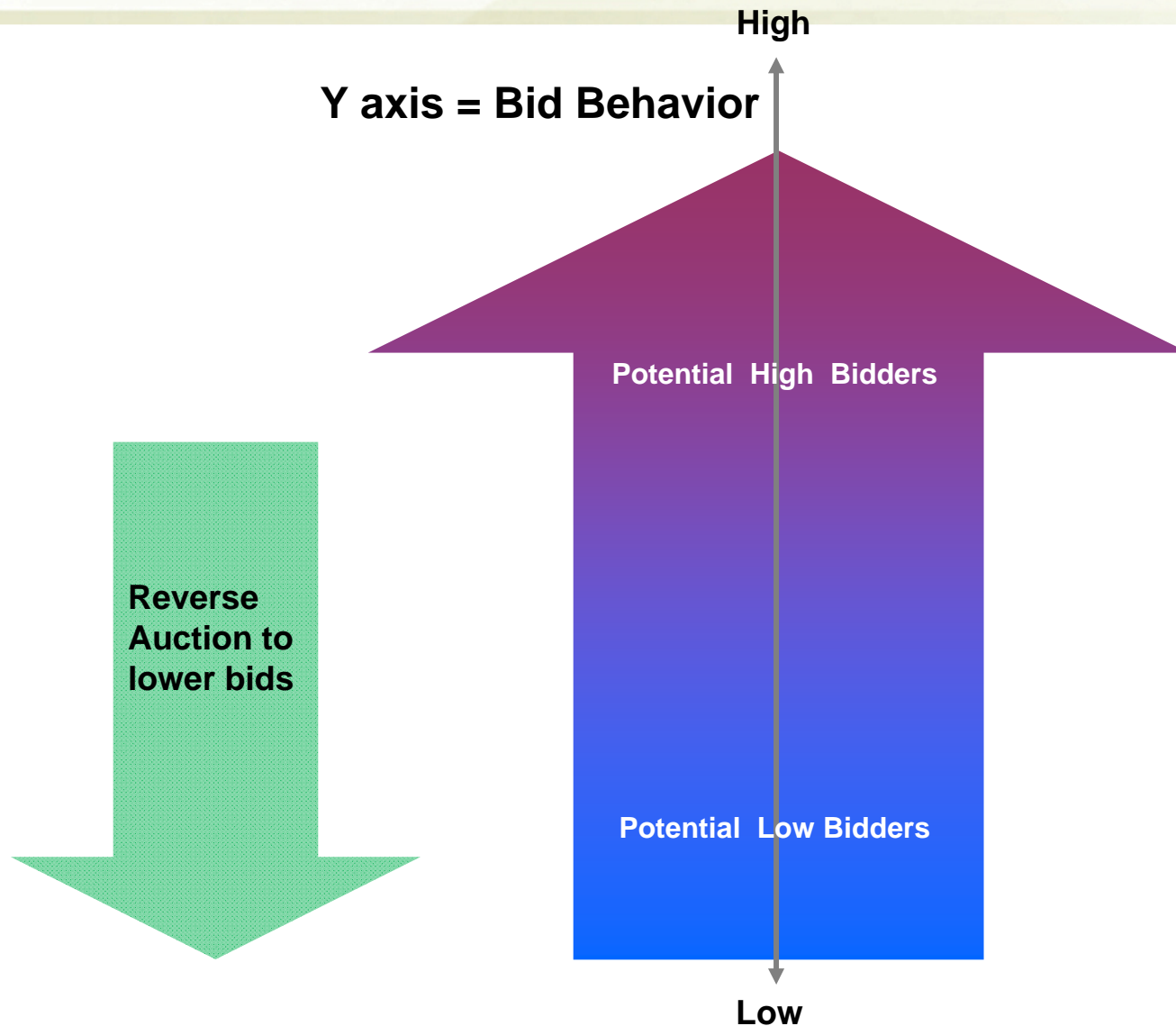
- Reverse auction (RA) is an auction in reverse—the low bidder wins
- Reverse auctions force applicants to “tip their hands”—show their “reservation price”
- With a good estimate of environmental points, a RA process can reveal the most cost-effective parcels in the bidding pool
- Can save program dollars or alternatively, effectively increase dollars available to purchase environmental services



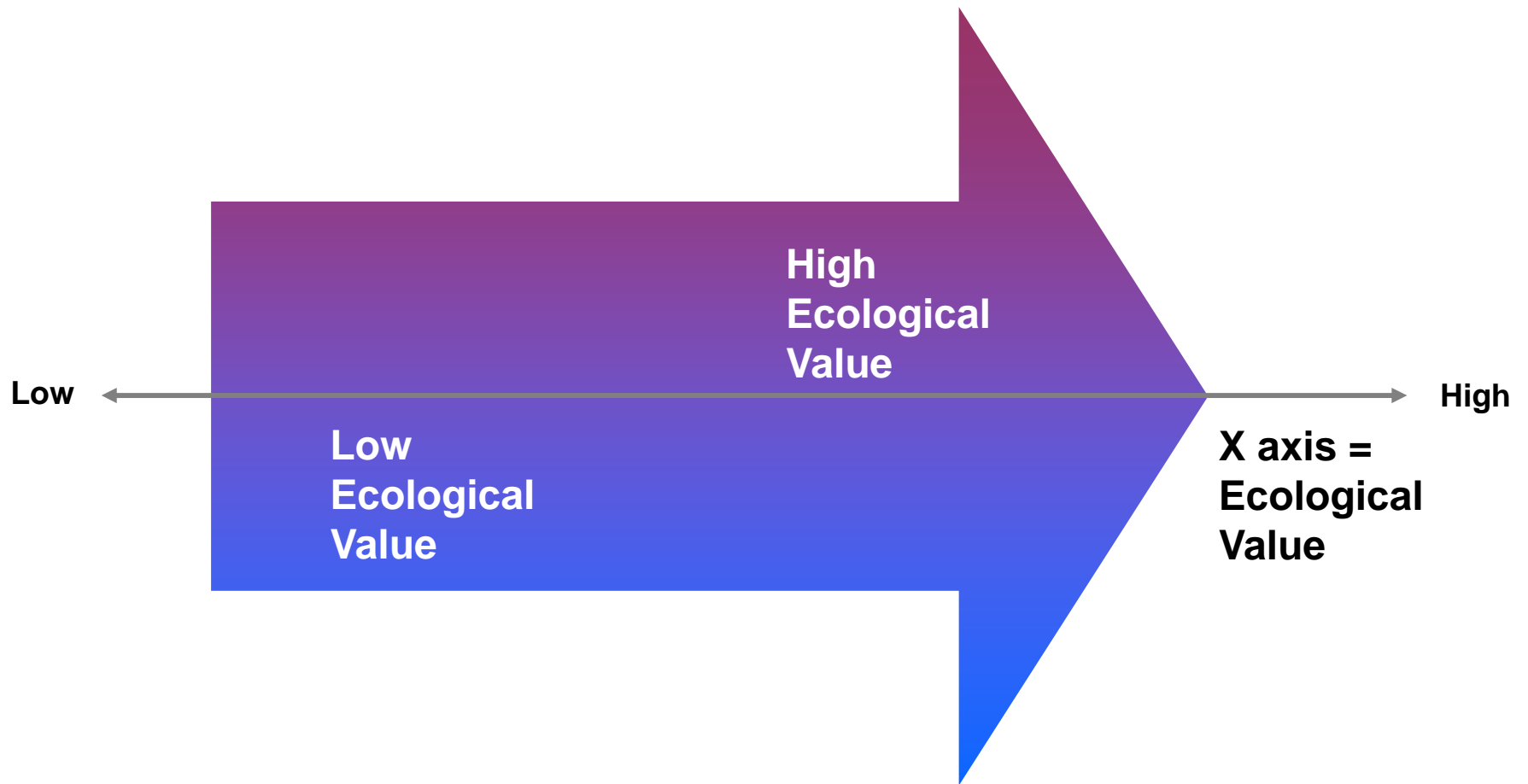
Reverse Auction objective is find the potentially low bidders



Reverse Auction objective is find the potentially low bidders



Reverse Auction objective is find the potentially high ecological value tracts

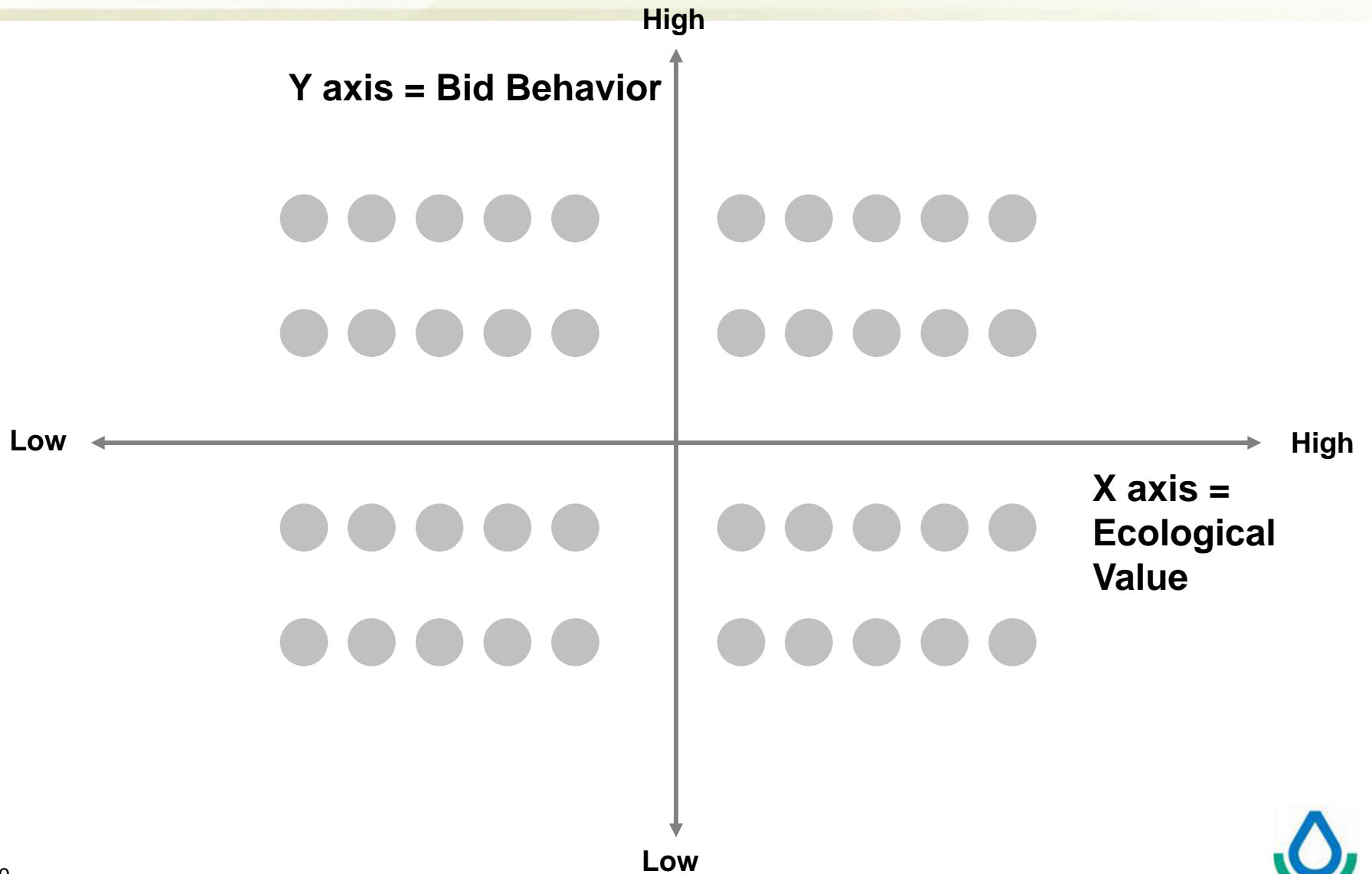


Stylized program criteria

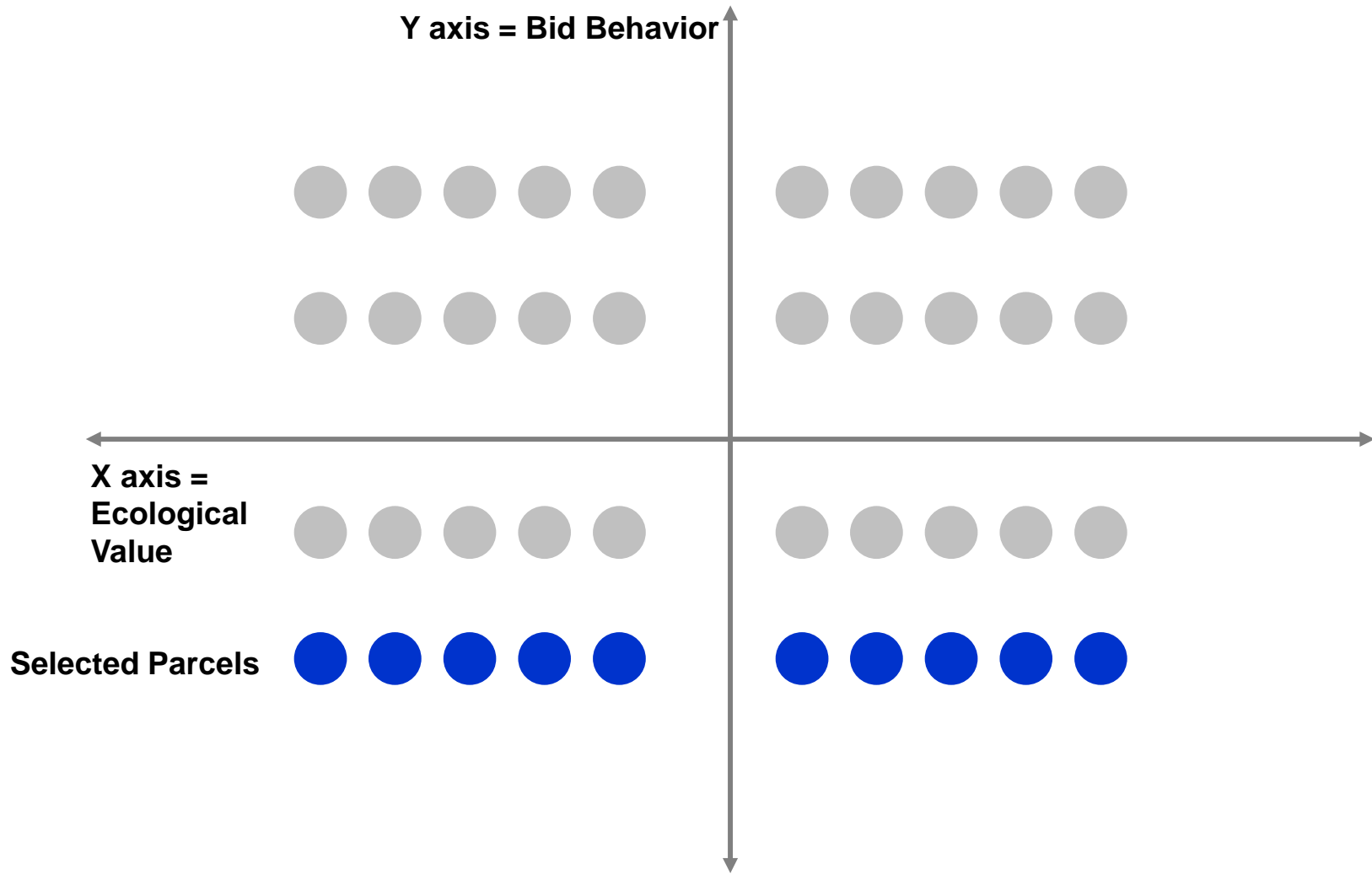
- Acres cap: 250 acres
- Parcel size: 25 acres
- Enrollment: 10 parcels
- High-bidders: \$1,000/acre
- Low-bidders: \$900/acre
- High ecological value: 1.0 point/acre
- Low ecological value: 0.9 point/acre



Stylized program: Potential parcels



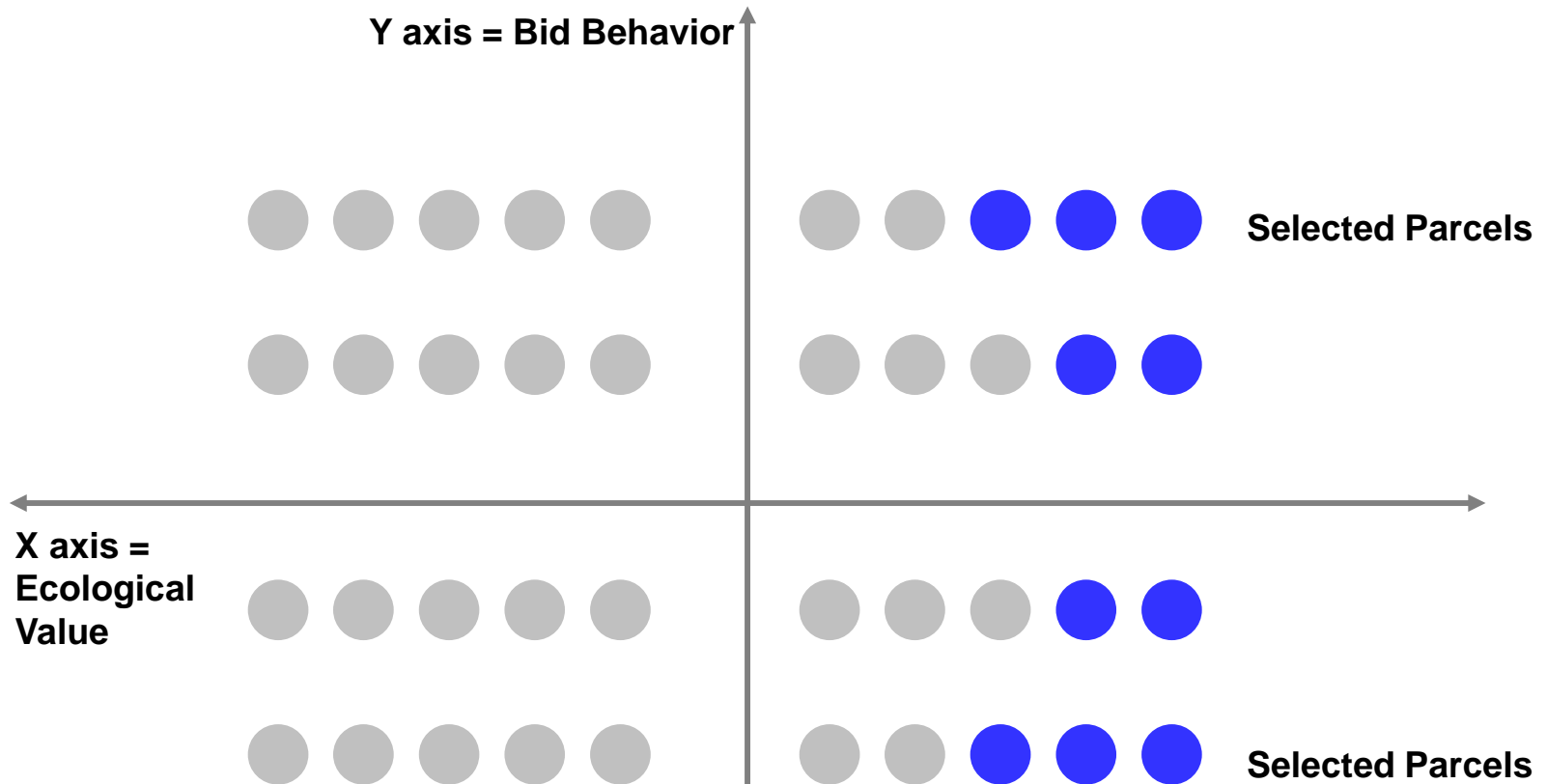
Stylized program: Low bid parcels



Program cost \$225,000 / Ecological value 237.5 points / \$947.00 per point



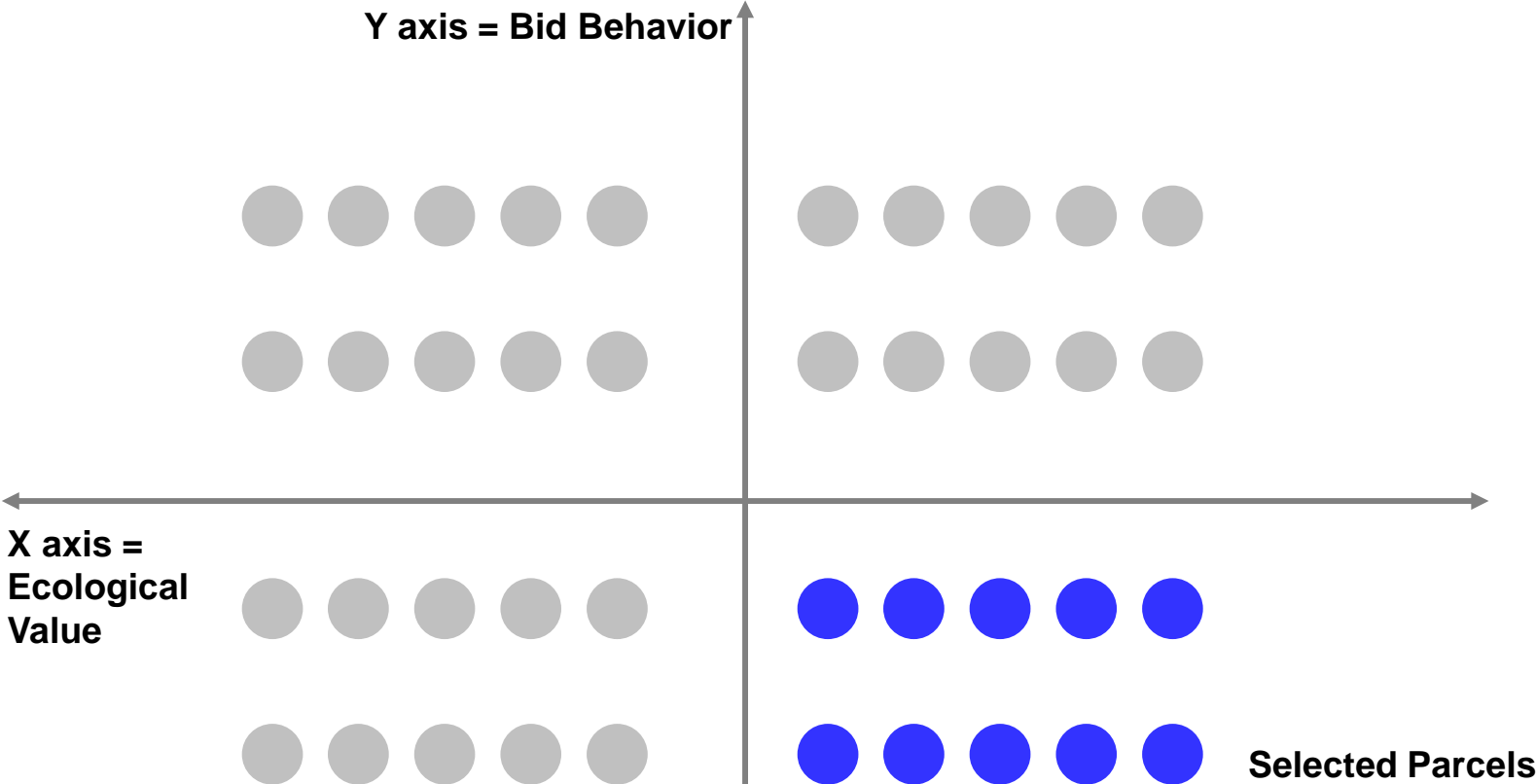
Stylized program: High ecological valued parcels



Program cost \$237,500 / Ecological value 250 points / \$950.00 per point



Stylized program: Preferred auction outcome



Program cost \$225,000 / Ecological value 250 points / \$900.00 per point



Stylized program summary

	Program cost (\$)	Ecological value	Cost/point (\$)
Low bid parcels	225,000	237.5	\$947
High ecological value	237,500	250	950
Preferred auction outcome	225,000	250	900



Rules of 2006 and 2007 WRP Pilot Reverse Auctions

1. Each pilot offered in homogenous wetlands area
2. Professional appraisals establish bid caps (\$/ac) for area (now called Geographic Area Rate Caps or GARCs)
3. Applicants make environmental self-assessments (ESA) and are aware of the area's bid cap
4. Applicant submits initial bid, at or below bid cap, along with ESA to local NRCS office



Rules of 2006 and 2007 WRP Pilot Reverse Auctions

5. NRCS notifies applicant of their ranking within the application range on a \$/point score
6. Applicant has opportunity to make a second, lower, bid to improve their ranking
7. NRCS chooses participants based on the lowest ranking per point within available funding/acreage limits (lowest cost to Government per point of environmental benefit)



States with WRP Pilot Reverse Auctions

2006 (7 states)

Georgia

Delaware

California

Colorado

Idaho

Kentucky

Missouri

16 applicants funded

2007 (3 states)

Georgia

Delaware

Alabama

21 applicants funded



Activity Levels in WRP Pilot Reverse Auctions

2006 (7 states)

Applications	29	
Funded	16	About 1/2 applications funded
Lowered initial bid	10	About 2/3 of funded lowered bids

2007 (3 states)

Applications	31	
Funded	21	About 2/3 applications funded
Lowered initial bid	13	About 2/3 of funded lowered bids



Bid Levels (and Apparent FA Cost Savings) in WRP Pilot Reverse Auctions

2006	Total \$	Most active 2 states
1 st bid	\$6.18 million	\$3.75 million
2 nd bid	<u>\$5.36 million</u>	<u>\$2.93 million</u>
<u><i>Difference</i></u>	<u>\$0.82 million</u>	<u>\$0.82 million</u>
Percent	13.2%	22.1%
2007	Total \$	Most active 1 state
1 st bid	\$2.13 million	\$1.38 million
2 nd bid	<u>\$1.98 million</u>	<u>\$1.23 million</u>
<u><i>Difference</i></u>	<u>\$0.15 million</u>	<u>\$0.15 million</u>
Percent	7.1%	10.9%



What caused the decline in budget savings between 2006 and 2007?

- Almost same level of total applications received
- More applicants funded in 2007 than in 2006
- In 2007 only one state lowered the average bid with a second round
- Smaller tracts bid into program
 - 2006: Average size of applicant bidding lower: 223 acres
 - 2007: 48 acres—only 1/5th the size
 - Total acres in program dropped by over 50 percent
- Average bid down per acre declined
 - 2006: \$371 per acre
 - 2007: \$241 per acre—about 1/3rd lower



What were some issues related to the drop off in interest from 2006 to 2007?

- In 2006, seven states volunteered with two states actively bidding
 - About \$7 million was allocated out of the budgeted \$10 million
- In 2007, only three states volunteered with only one state actively bidding.
 - Only about \$2.7 million was allocated out of the budgeted \$20 million
- Low state interest evident
- Probably many internal and external reasons behind drop off



Lessons Learned

- If the objective is to enroll the most environmentally desirable land at lowest Government cost then:
 - Observed program cost savings of 5 to 15 percent under conditions where there was competition for program participation
- Environmental benefits can be increased.
 - Ranking can direct funding to most environmentally desirable parcels
- Prior knowledge of bid caps reduces likelihood that applicants will bid lower than the cap



Lessons Learned (Continued)

- If an applicant has an environmentally desirable parcel but is not satisfied with the CAP level, it is unlikely that such parcels will be offered
- Equity concerns could be addressed by separate pools of bidders by income or wealth
- ESA can educate landowners on the value of their lands in a broader context



Questions and Contact Information:

- Questions
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