

*Multi-Objective Optimization to
Auction Forest Ecosystem Services*

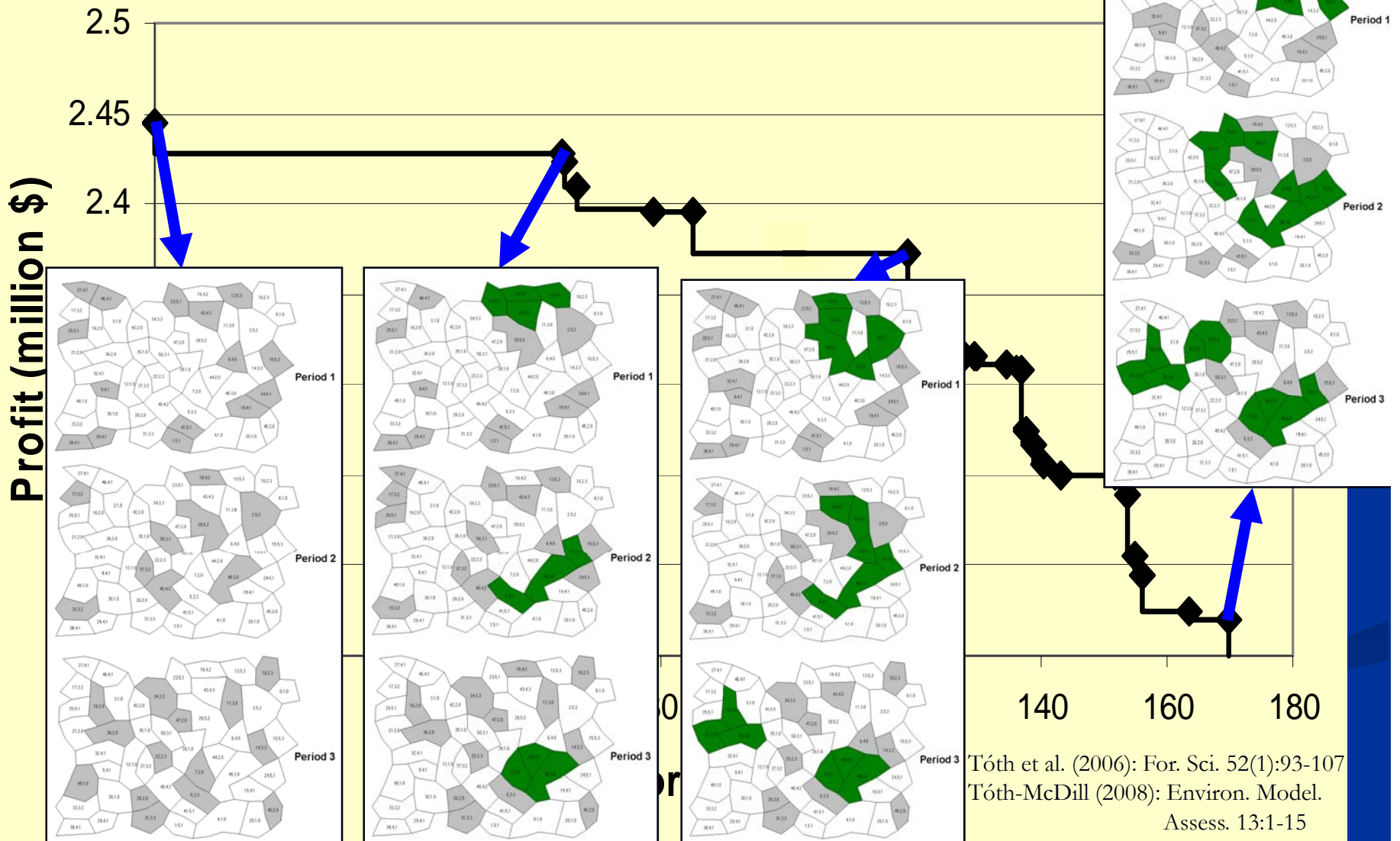
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May 7, 2008

Western Forest Economists Annual Meeting, Welches, OR

Timber and Non-Timber Tradeoffs



Tóth et al. (2006): For. Sci. 52(1):93-107
 Tóth-McDill (2008): Environ. Model. Assess. 13:1-15

Viewshed Services

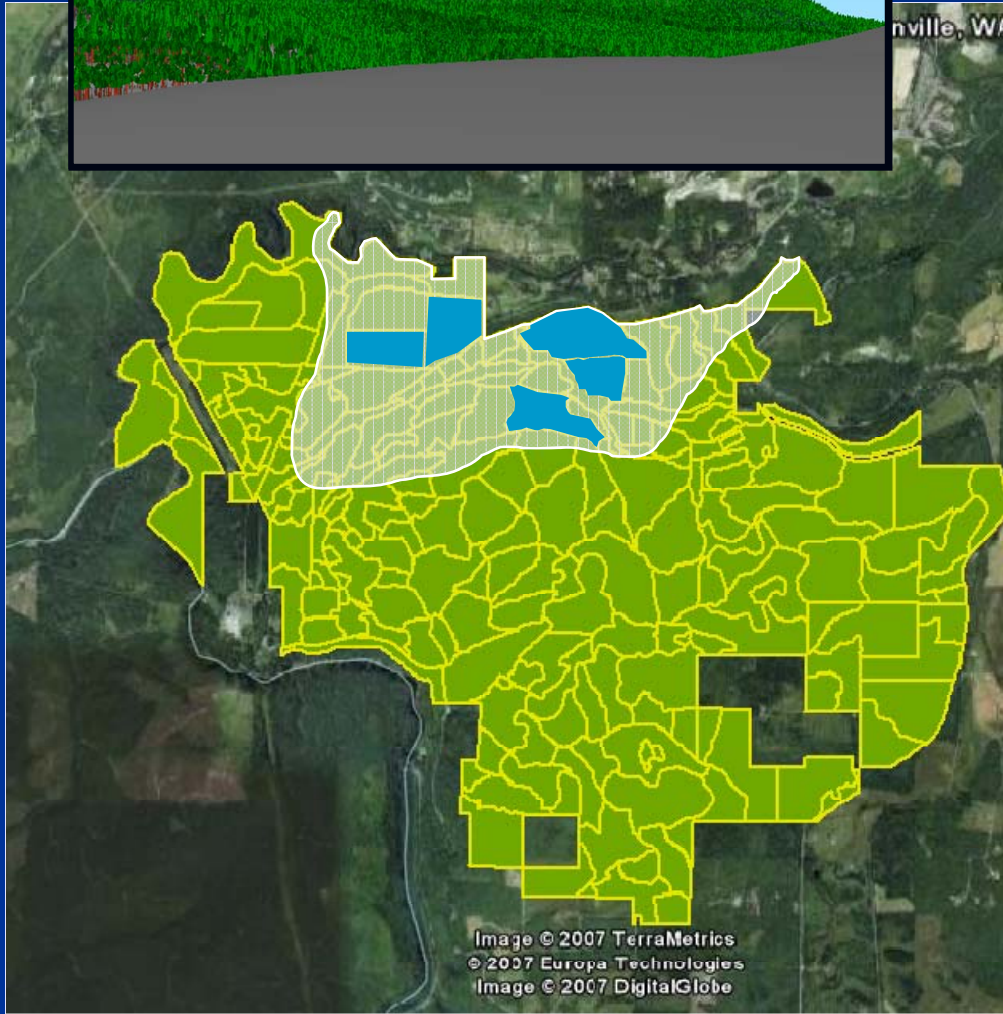
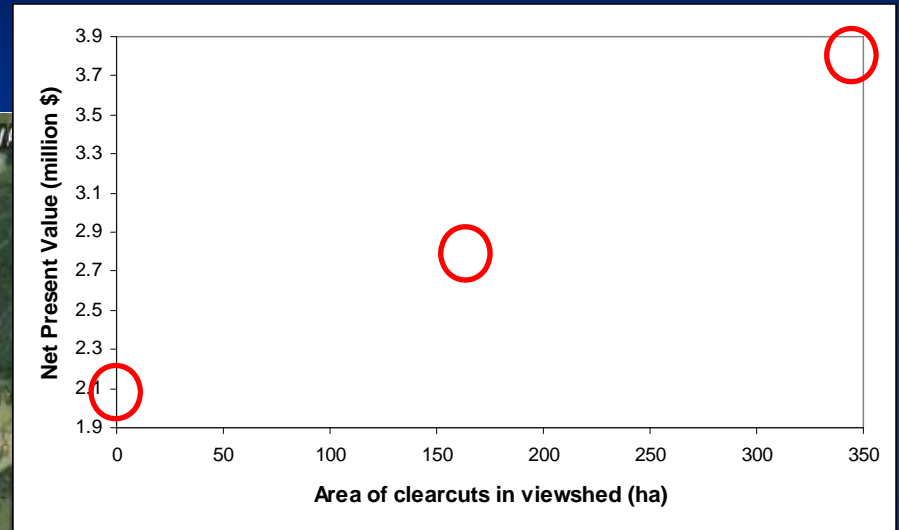
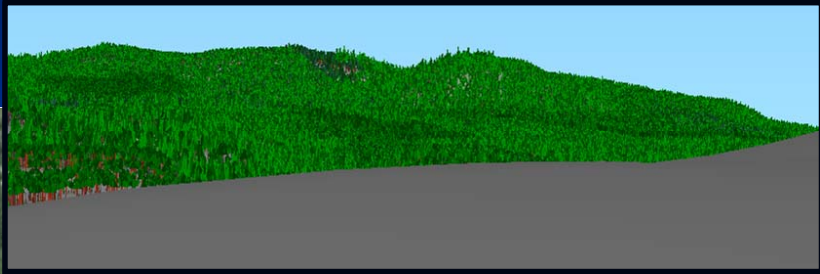
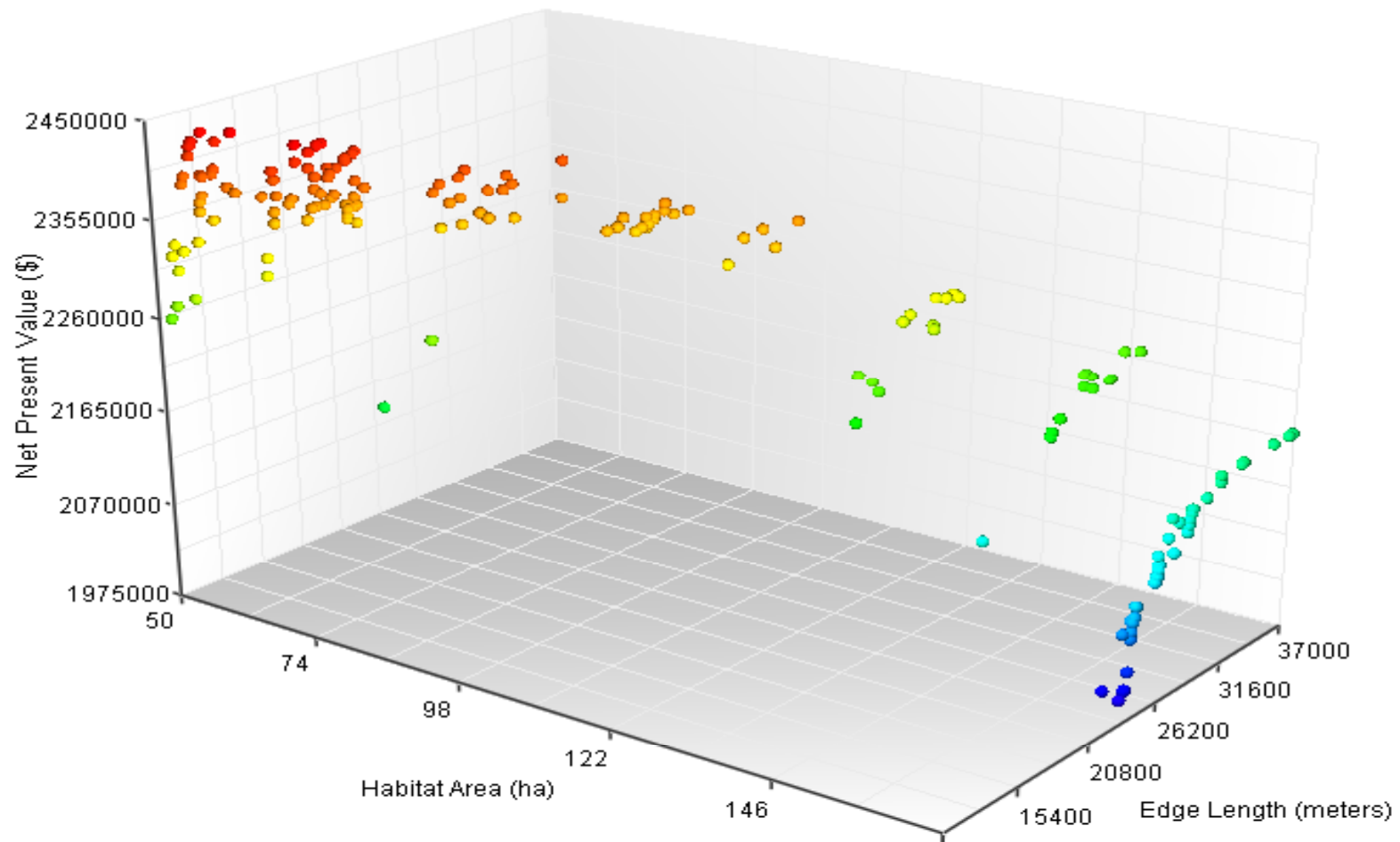


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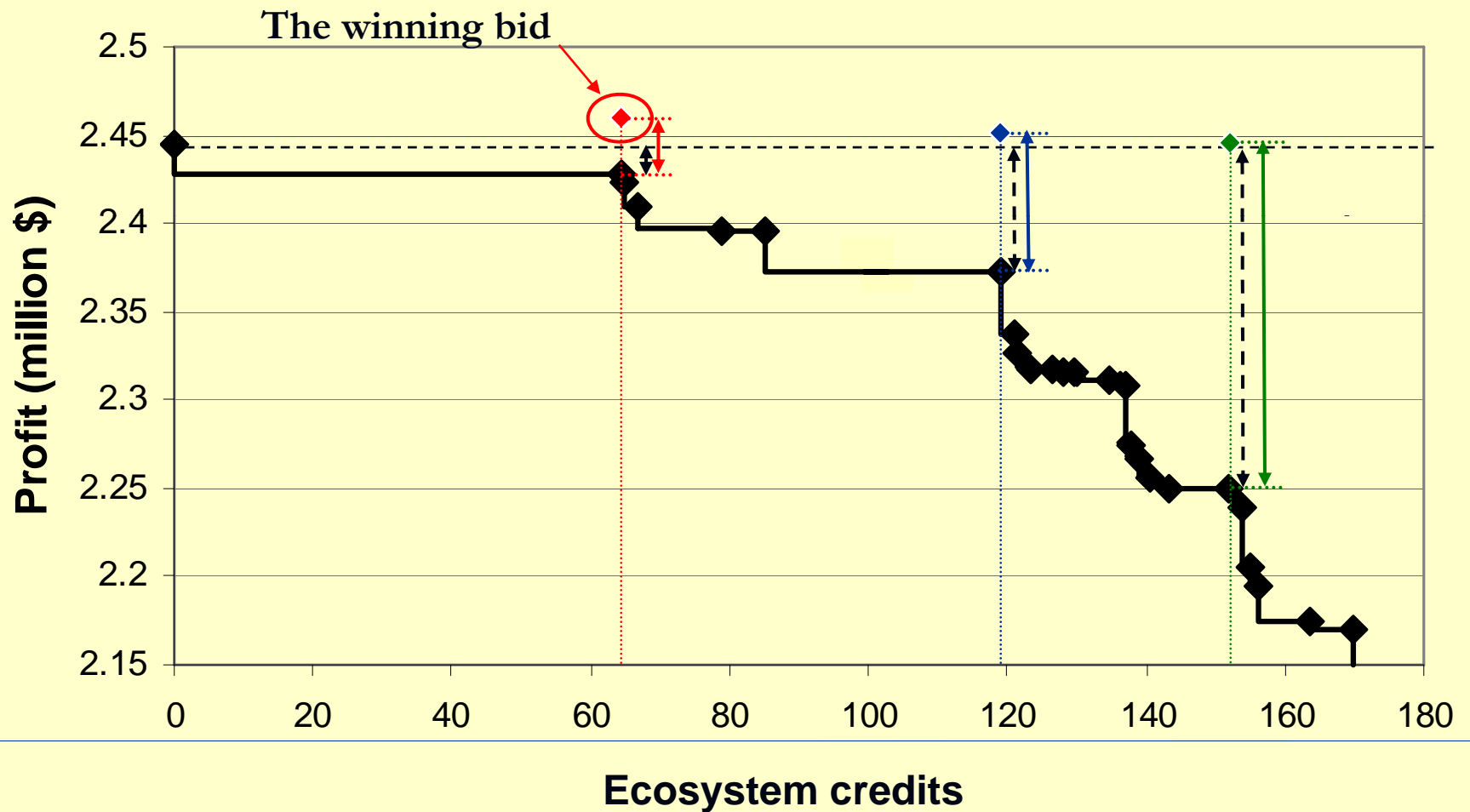
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Bundling Ecosystem Services



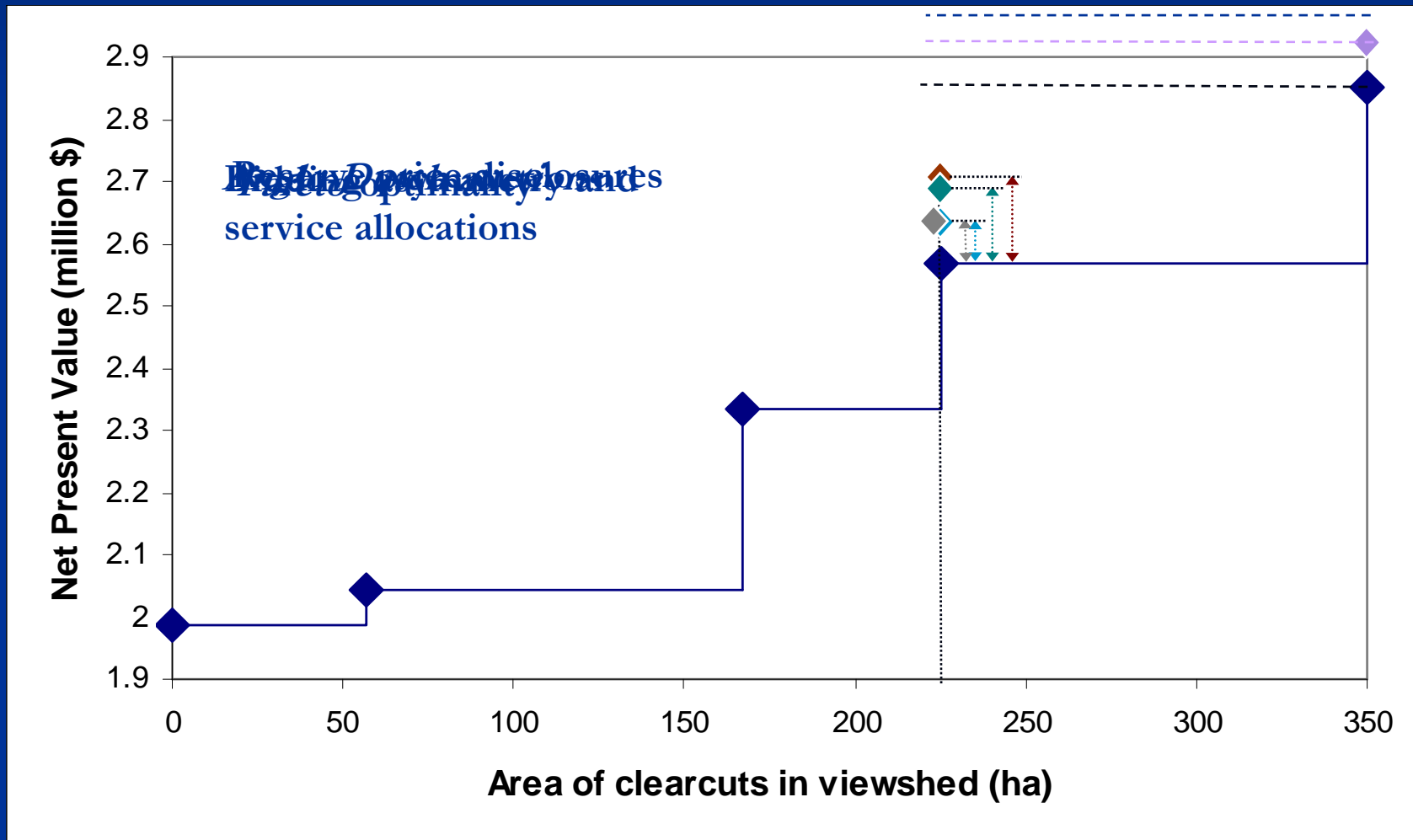
Auctioning Ecosystem Services

The ECOSEL Concept



Auctioning Ecosystem Services

The ECOSEL Concept



The Free Rider Problem

- Game theory: No contribution is optimal bidding strategy
- Experimental research on public goods provisions:
 - Marwell-Ames (1980): Not everyone free rides
 - Isaac, McCue and Plott (1985): Public good provisions decline after repeated experiments

How strong is free riding going to be?

Other Issues

- Contract horizons
- Third-party verification
- Monitoring
- Computational boundaries

Summary

- ECOSEL is a non-regulatory, market-based mechanism that attempts to maximize the revenues of the seller (the forest landowner) by allocating both public and private forest benefits to those who value them the most

What's next?

- USDA National Research Initiative funded a preliminary study to prove concept
- We seek potential eco-investors who can demonstrate their interest and willingness to bid in a real auction
- Several stakeholder meetings will be held in the Fall in WA and OR (Northwest Environmental Forum, October 29-31, Blaine, WA)

Notes

- Credits: Ettl and Rogers (UW), Rakestraw (IP)

- ECOSEL website:

http://faculty.washington.edu/toths/ecosel_intro.shtml

