Optimizing the Allocation of LWCF Funding

An Inter-Divisional Proposal
Precepts

- Optimal allocation of funding entails systematic accounting of benefits and costs.
- LAPS allows us to systematically account for conservation benefits of land acquisition.
- We do not systematically account for land acquisition costs.
- Recent developments call for optimizing land acquisition funding, most notably by systematically accounting for costs.
  - Sound science.
  - Administration guidance.
Sound Science (examples)

Sound Science (longer list)

Scientific Consensus

- Fish and wildlife conservation is maximized when allocation of funding is optimized.
- Four basic steps in optimizing:
  - Estimate benefits.
  - Estimate costs.
  - Divide benefits by costs.
  - Prioritize projects based on benefit:cost ratio.
- Importance of optimization increases as allocations decline.
Administration Guidance

- 1992-2011 – Circular No. A-94 (revised): “Benefit-cost analysis is recommended as the technique to use in... government programs or projects.”
- 2009 – Executive Order 13514: “Consider environmental measures as well as economic and social benefits and costs in evaluating projects and activities…”
  - “…increase the positive impact of conservation expenditures by giving highest priority to those expenditures that maximize the conservation benefits gained for each dollar invested” (p.47).
  - “Even when cost is considered, it is often only one variable rather than the denominator in a cost-effectiveness calculation...which results in a flawed assessment” (p.49).
  - “For the short term, agencies should begin by focusing on existing programs…” (p.54).
Optimization, LAPS, and LWCF Allocation
How do we prioritize these projects?

Project A
100 acres
LAPS = 650
Cost per Acre = $1,000

Project B
100 acres
LAPS = 705
Cost per Acre = $10,000

Project C
100 acres
LAPS = 700
Cost per Acre = $1,000

Project D
100 acres
LAPS = 675
Cost per Acre = $5,000
<table>
<thead>
<tr>
<th>Rank</th>
<th>Project Name</th>
<th>LAPS Score</th>
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</thead>
<tbody>
<tr>
<td>1</td>
<td>Project B</td>
<td>705</td>
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<tr>
<td>2</td>
<td>Project C</td>
<td>700</td>
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<tr>
<td>3</td>
<td>Project D</td>
<td>675</td>
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<tr>
<td>4</td>
<td>Project A</td>
<td>650</td>
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Optimization

LAPS (Benefit) / Cost per Acre

Project B
LAPS = 705
Cost per Acre = $10,000
700/10,000 = 0.07

Project A
LAPS = 650
Cost per Acre = $1,000
650/1000 = 0.65

Project C
LAPS = 700
Cost per Acre = $1,000
700/1000 = 0.70

Project D
LAPS = 675
Cost per Acre = $5,000
675/1000 = 0.70
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<td>LAPS Ranking</td>
<td>Optimized Ranking</td>
<td>Total Cost</td>
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What can we acquire with $1 million?
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<th>LAPS Ranking</th>
<th>Optimized Ranking</th>
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<tbody>
<tr>
<td>• 1 project</td>
<td>• 3.3 projects</td>
</tr>
<tr>
<td>• 100 acres</td>
<td>• 330 acres</td>
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<tr>
<td>• Benefit = 705</td>
<td>• Benefit = 700 “+” 650 “+” 675 “+” (.3)*705</td>
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Example

For FY 2010, the following two Region 5 acquisitions were proposed:

Project A
Prime Hook
NWR
LAPS = 508
Cost per Acre = $9,259

Project B
Cape May
NWR
LAPS = 502
Cost per Acre = $35,714
FY 2011 Project Distribution

- Adjusted for easements, assuming 40-60% cost of fee title
Top 20 - LAPS

Total Cost: $74,125,167
Total Acres: 93,787
Optimized Top 20

- Alaska Refuges (inc. Yukon Delta NWR)
- North Dakota WMA
- Trinity River NWR
- Dakota Tallgrass Prairie WMA
- St. Marks NWR
- Rocky Mountain Front CA
- Ozark Plateau NWR
- Blackwater NWR
- Northern Tallgrass Prairie NWR
- Lower Rio Grande Valley NWR
- Lake Umbagog NWR
- Red River NWR
- Cache River NWR
- Laguna Atascosa NWR
- Silvio O. Conte NWR
- San Bernard-Austin's Woods
- Chickasaw NWR
- Cypress Creek NWR
- Grasslands WMA
- Waccamaw NWR

Total Cost: $70,083,500
(-$4,041,667)

Total Acres: 97,593 (+3,806)
Some Results of Optimizing

- $4,000,000 cost savings will cover the next 3.97 project requests on the optimized list…
  - Cokeville Meadows
  - Panther Swamp
  - Balcones Canyonlands
  - Upper Ouchita (0.97)

- ...for an additional 3,020 acres (total additional acres from LAPS = 6,826)…

- ...and an additional 852 LAPS points (13,386 - 12,534).
Will regions with high CPAs be excluded?

CPA Range over FYs 2009-2011

Cost per Acre ($) vs Region

- Regions 1, 2, 3, 4, 5, 6, 7, 8
- CPA range from 0 to 50,000
- Higher concentrations in regions 1, 2, 3, 4, and 5

[Graph showing data distribution across regions]
Will regions with high CPAs be excluded?

CPAs over FYs 2009-2011

Cost per Acre ($)

Region
Nothing Ruled Out

- Approximately 70% of LWCF projects determined via ranking (currently using LAPS).
- 20% Regional priorities.
- 5% Director priorities.
- 5% other reasons.
Inter-Divisional Proposal

• Rank LWCF projects by optimizing (i.e., using LAPS score/cost per acre).

• Highlight optimization in annual reports.
  - Refuge System *Annual Report of Lands*.
  - Executive Order 13514 annual report.
  - *Sustaining Environmental Capital* annual report.

• Continuously improve optimization.
  - Formalize optimization in revised strategic growth policy.
  - Continue with ongoing LAPS revision.
  - Consistent inclusion of land costs in project descriptions.
  - Fine-tune easement/fee ratios.
  - Explore additional cost considerations.
    • Planning as well as ranking.
    • Non-acquisition costs.
Benefits to Refuge System

• Optimal allocation of LWCF funds.
  - Maximum return on investment.
  - Maximum possible conservation.

• Positive public and intergovernmental relations.
  - Proactive use of sound science.
  - Prompt adherence to Administration guidance.

• Increased potential for future allocations.