Enabling Businesses to Incorporate the Economic Value of Ecosystem Services into Project Evaluation

Sheila M.W. Reddy, Elizabeth Uhlhorn, France Guertin, Kevin Halsey, Kenna Halsey, Jim Koloszar, Morgan Erhardt, Jeff North
Informing business decisions
Dow’s 2025 Nature Goal

• By 2025, Dow will deliver $1B in value through projects that are good for business and good for ecosystems.

• By 2020, all R&D, capital and real estate projects at Dow will be screened using Nature’s Future Value (NFV) assessments, a tool we developed with The Nature Conservancy to measure the value of ecosystem services.
Testing the Nature Goal
Improving Projects by Valuing Nature

- Screen
- Analyze and Improve
- Assess Nature & Business Value and Report
Calculating Value of Nature to Business → $1B

Using standard economic or financial methods and metrics - Net Present Value (NPV)

Project managers and engineers already have economic and financial models that they can adapt to estimate many of these values

Gap this process fills:
- framework for identifying and assessing these values
- tools to generate data on changes in nature and ecosystem services that can be input into these models.

Complemented with separate scoring of value to communities and biodiversity
### Business Value

<table>
<thead>
<tr>
<th><strong>Avoided costs / Operating Expenses</strong></th>
<th>Examples</th>
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</thead>
<tbody>
<tr>
<td>Savings in CAPEX or O&amp;M</td>
<td>Water filtration, storm water subsidence, or building cooling at lower cost than the traditional engineered alternatives. Reduced inputs and waste.</td>
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<tr>
<th><strong>Asset Management</strong></th>
<th>Examples</th>
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<tbody>
<tr>
<td>Value through real estate portfolio, site operations, site greenbelts, and remediation portfolio</td>
<td>Ecosystem services like storm water management. Values to business, and/or community (relations, brand). Wetlands banking.</td>
</tr>
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<th><strong>Increased revenues/ Market Opportunities</strong></th>
<th>Examples</th>
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<td>Integrating nature into R&amp;D and product development</td>
<td>Leverage natural solutions, target customers directly impacting nature and/or helps customers meet needs and benefit nature</td>
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<th><strong>Reduced Risk</strong></th>
<th>Examples</th>
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<td>Natural solutions can reduce long term risks</td>
<td>Avoided costs, lost revenue, or avoided liabilities.</td>
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Additional potential benefits not (yet) captured in NPV include *resilience, reputational benefits, community engagement, and employee recruitment and retention*.
Data collection with ESII Tool

ESII Tool
(Ecosystem Service Identification & Inventory)
Focal Type Projects

Engineered Natural Technologies
• Green or natural infrastructure that provides the same services as grey infrastructure

Process Improvements
• Resource efficiency improvements that reduce impact on nature

Property
• Putting land (greenbelt or surplus) into conservation

Innovation
• New products that will enhance nature
Croydon Woods, Bristol, Pennsylvania, USA

**Property**

**Decision:** What to do with greenbelt property?

**Description:** Woods and rare wetlands along Delaware River

**Alternatives:**
- Conservation area
- Potential development scenarios on 24% of site
Croydon Woods, Bristol, Pennsylvania, USA

**Action:** Sold greenbelt property to land trust at discount, with conservation easement.

**NPV:** $2 million
- Cash sale of land (net: $1.25M)
- Avoided O&M (NPV: $0.75M, 10% discount rate over 10 years)

**Potential benefits to community:**
- aesthetics, property value enhancement, stormwater control, air quality control, water quality control, and erosion control

**Ecosystem benefits:** rare wetland forest protected in perpetuity
Project: Updating decades-old pumping infrastructure, 50% increase in pumping capacity, and redesign and relocation of the canal infrastructure

Description: 4-ac site along Oyster Creek

Alternatives:
- Business-as-usual design
- Natural solutions for soil stabilization and native ecosystems included in site design
Action: Hybrid: Business as usual canal option, as well as the sustainable landscaping plan

NPV created: $46,577
• 14% savings in site O&M and Capex costs over a 10 year period

Potential benefits to community: aesthetics, property value enhancement

Ecosystem benefits: Restored native ecosystems
Values from Valuation Process

- Incentives to reach $1B goal
- Inform project decisions
- Change culture
- Make business case
- Learning – including with value of nature to communities and biodiversity
Thank You

Contact:
Jen Molnar
Center for Sustainability Science
jmolnar@tnc.org
@molnar_jen
| Inputs | Will the proposed project impact the consumption of energy and/or materials including fresh water by more than 10%? |
| Outputs | Will the proposed project impact the emissions including process water discharges and/or waste profile by more than 10%? |
| Natural Areas | Will the proposed project impact or create natural or semi-natural areas (e.g., greenbelt areas, landscaped areas, water bodies, agricultural areas)? |
| Natural Technology | Could it be possible to use engineered natural technologies (ENT) in your project to enhance Dow's natural capital? |