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

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Informing business decisions

http://galleryhip.com/american-car-factory-workers.html

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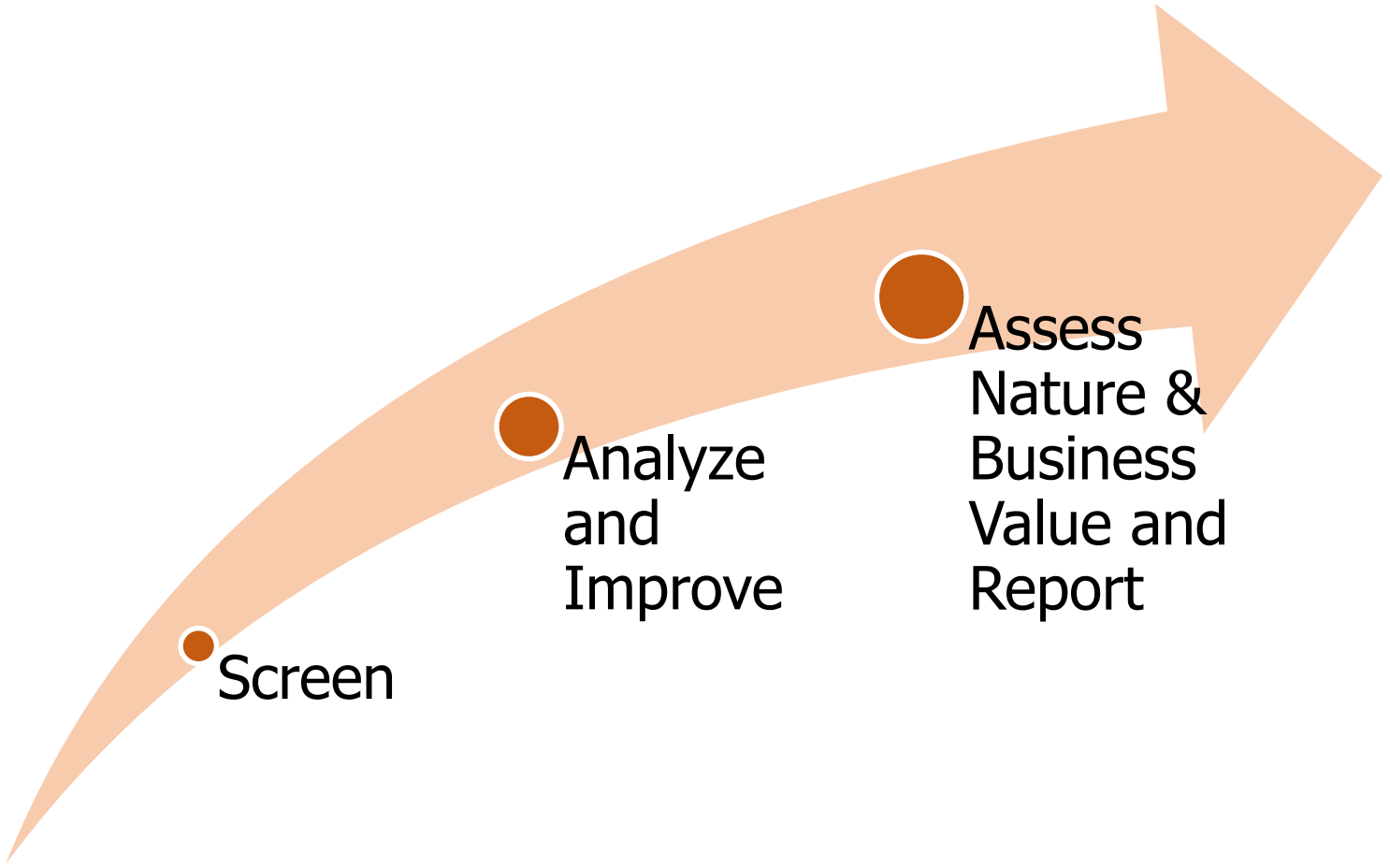
Dow's 2025 Nature Goal

- 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



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.

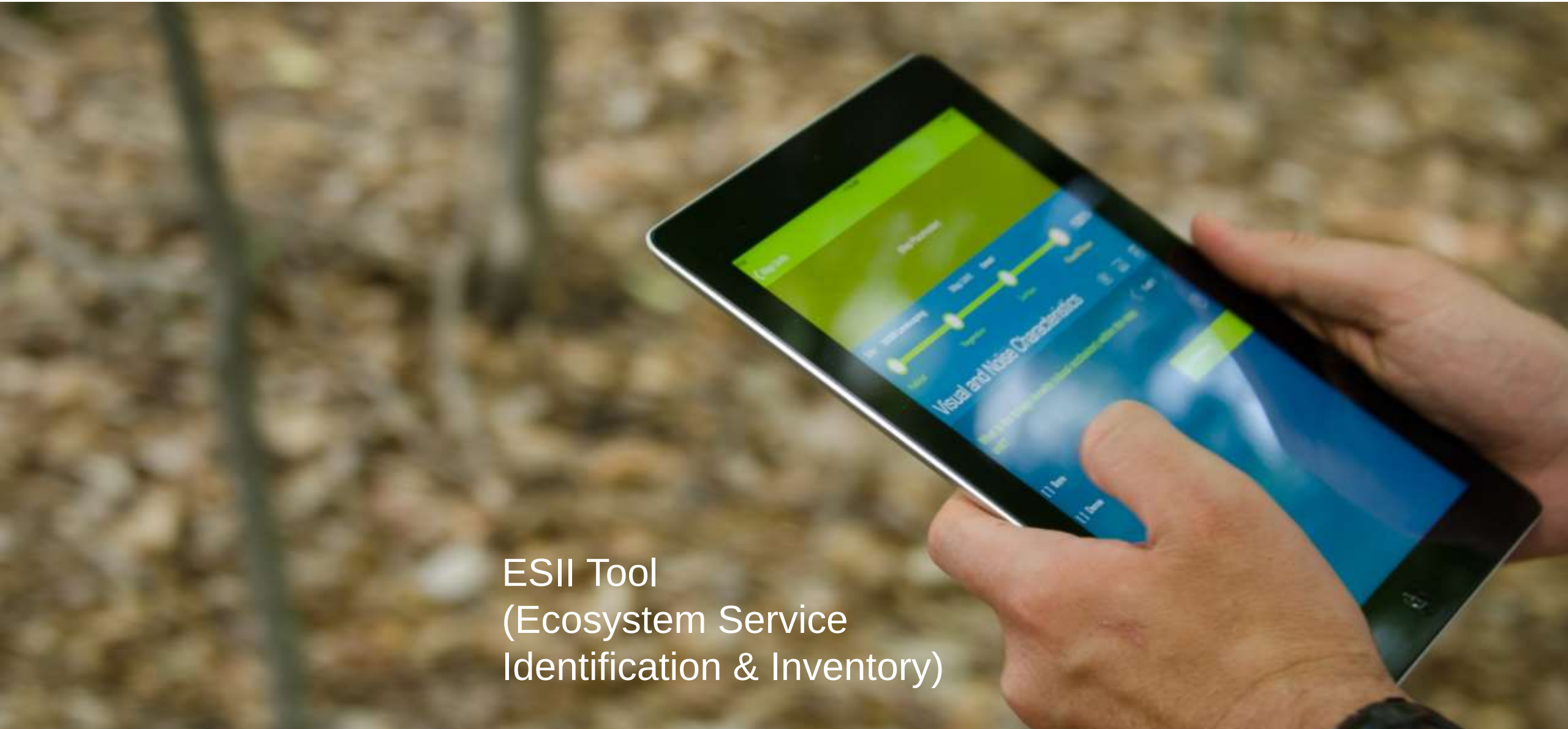
Complemented with separate scoring of value to communities and biodiversity

Business Value

		Examples
Avoided costs / Operating Expenses	Savings in CAPEX or O&M	Water filtration, storm water subsidence, or building cooling at lower cost than the traditional engineered alternatives. Reduced inputs and waste.
Asset Management	Value through real estate portfolio, site operations, site greenbelts, and remediation portfolio	Ecosystem services like storm water management. Values to business, and/or community (relations, brand). Wetlands banking.
Increased revenues/ Market Opportunities	Integrating nature into R&D and product development	Leverage natural solutions, target customers directly impacting nature and/or helps customers meet needs and benefit nature
Reduced Risk	Natural solutions can reduce long term risks	Avoided costs, lost revenue, or avoided liabilities.

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	Process Improvements	Property	Innovation
• Green or natural infrastructure that provides the same services as grey infrastructure	• Resource efficiency improvements that reduce impact on nature	• Putting land (greenbelt or surplus) into conservation	• New products that will enhance nature

Croydon Woods, Bristol, Pennsylvania, USA

Property

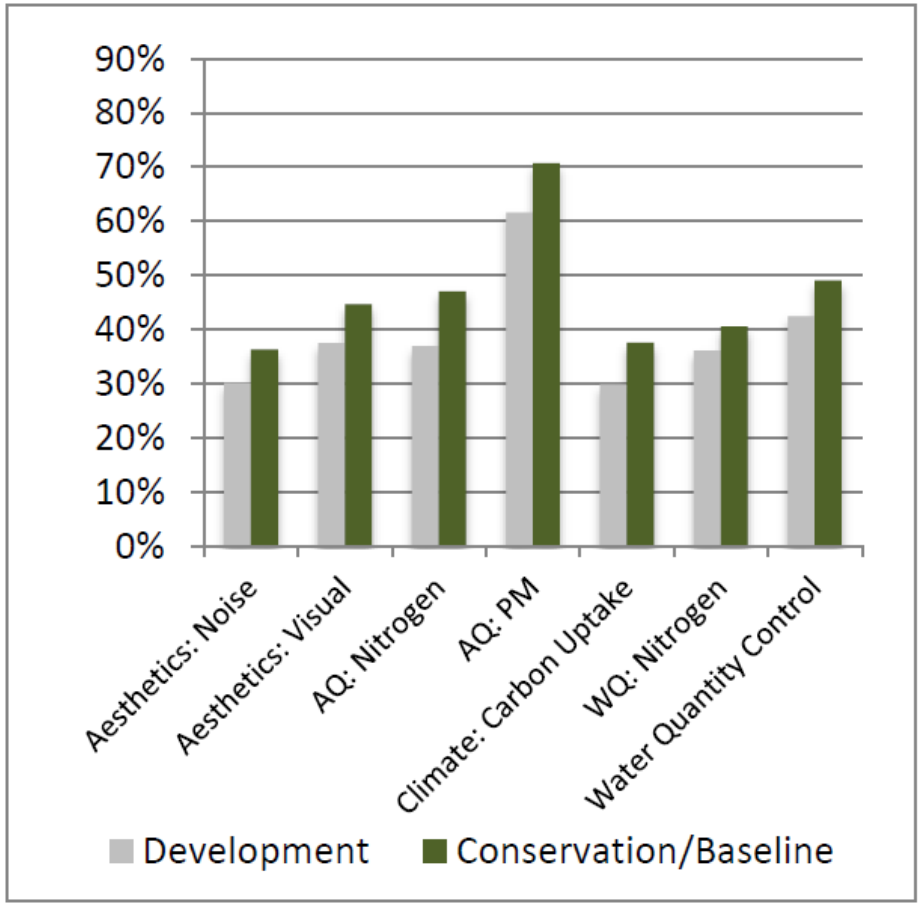
Decision: What to do with greenbelt property?

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)

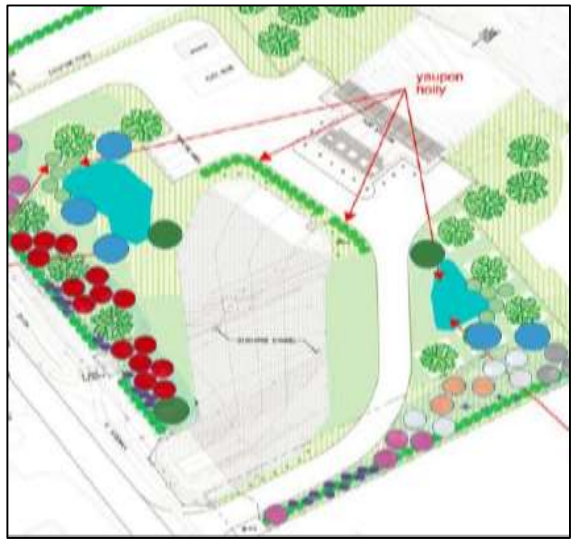
Potential benefits to community: aesthetics, property value enhancement, stormwater control, air quality control, water quality control, and erosion control

Ecosystem benefits: rare wetland forest protected in perpetuity

Jackson Pump House, Freeport, Texas, USA

Original Landscape Plan

Proposed Landscape Plan



Engineered Natural Technologies

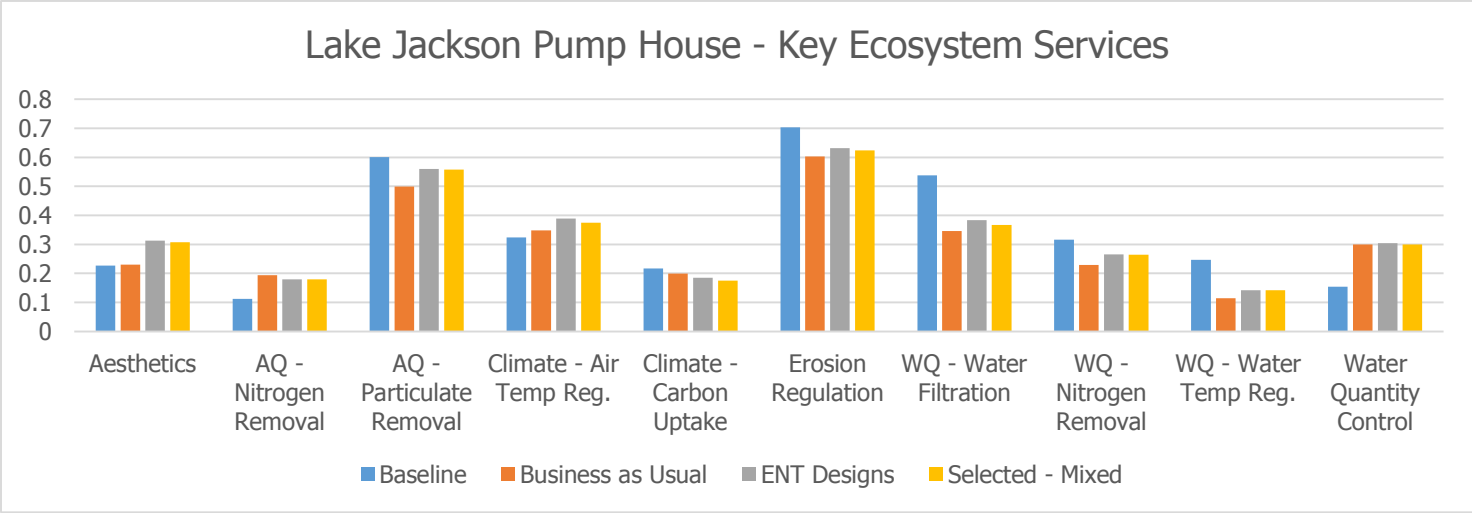
Project: Updating decades-old pumping infrastructure, 50% increase in pumping capacity, and redesign and relocation of the canal infrastructure

Description: 4-ac site along Oyster Creek

Alternatives:

- Business-as-usual design
- Natural solutions for soil stabilization and native ecosystems included in site design

Jackson Pump House, Freeport, Texas, USA



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

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Screen projects for impacts/opportunities

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?