Nationwide CCAA for MONARCH BUTTERFLY

Cost-Benefit Evaluation

of the Nationwide CCAA for Monarch Butterfly on Energy and Transportation Lands

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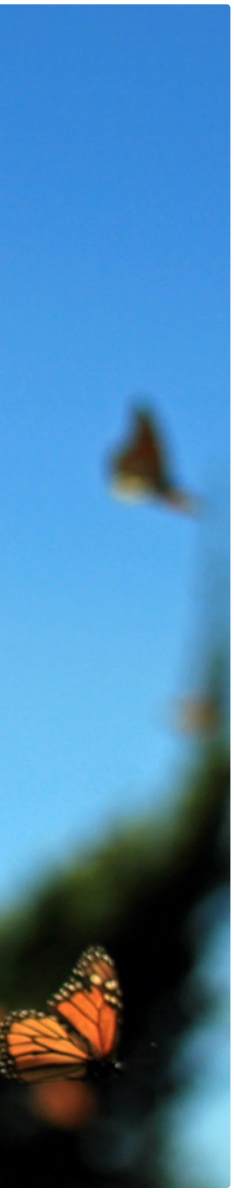
A team conducted a cost-benefit evaluation of participation in the Nationwide Candidate Conservation Agreement with Assurances for Monarch Butterfly on Energy and Transportation Lands.

Their findings lend insights on how the Agreement can leverage a return on the conservation investments made by participants.

Background

The Nationwide Candidate Conservation Agreement with Assurances for Monarch Butterfly on Energy and Transportation Lands (the Agreement) promotes management strategies that enhance, restore and conserve monarch butterfly and other pollinator habitat. In exchange for commitments made, the Agreement will give assurances that no additional regulatory requirements, beyond those outlined in the Agreement, will be requested by USFWS in the event that the monarch butterfly becomes listed. For businesses and rights-of-way managers, these assurances help avoid costly delays and last-minute disruptions associated with species listing requirements for those actions included in the Agreement.



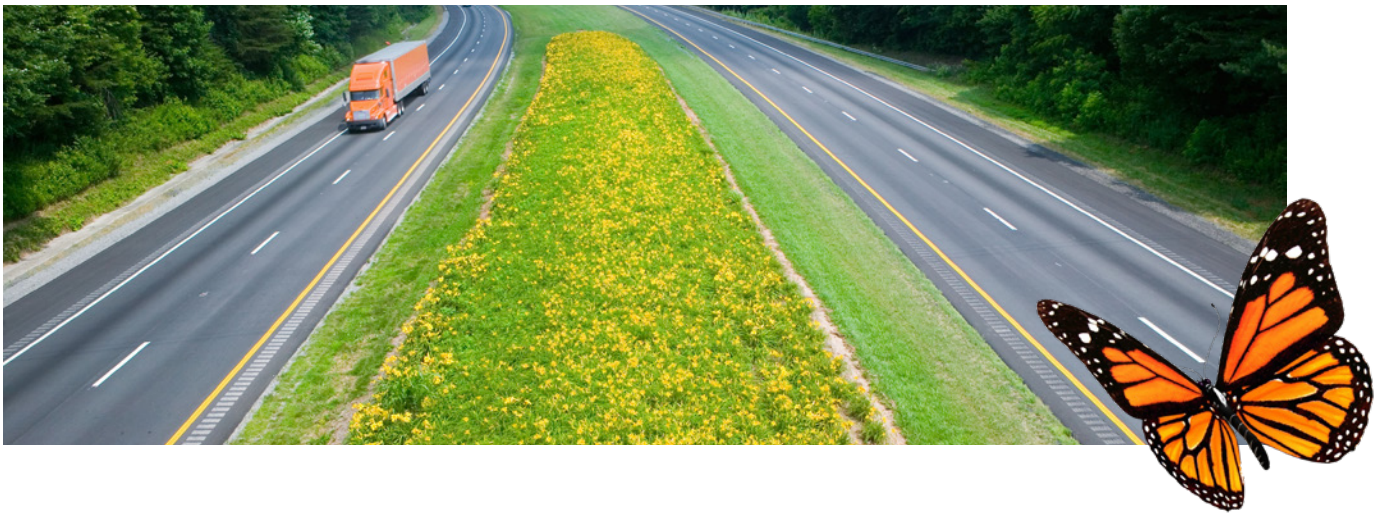
What value does the Agreement bring if the monarch butterfly isn't listed under the Endangered Species Act (ESA)?

The U.S. Fish and Wildlife Service (USFWS) is expected to propose whether or not to list the monarch butterfly under the ESA in June 2019.

- **If listed**, participation in the Agreement will provide lower costs and operational flexibility to energy and transportation operations. Under this scenario, the value of industry participation is readily apparent. The costs of additional project consultations, regulated avoidance measures, and business adaptation to a new listed species can be avoided through participation in the Agreement. These benefits can only be realized if participants enroll in the Agreement prior to the listing.
- **If not listed**, the Agreement can still add value to energy and transportation operations. Adding certainty amidst possible challenges to the listing decision, avoided costs in the event of a court decision requiring a future listing, and decreased costs resulting from the increased use of integrated vegetation management are just some of the cost-saving aspects of enrollment.

To determine if there is a financial benefit for participants regardless of a monarch listing decision, five participants involved in the Agreement development conducted a standardized cost-benefit evaluation of the Agreement. The five participants envisioned cost and benefit scenarios for operations they are involved in: two representing electric transmission, one utility-scale solar, one gas and electric transmission and distribution, and one state department of transportation. This evaluation considered only an "if not listed" scenario – weighing only the costs and benefits of a decision to preclude listing of the monarch butterfly.

In all scenarios evaluated, the benefits of participation outweighed the associated costs. Even though the results varied between the organization and individuals conducing the evaluation, participation in the Agreement added value. If USFWS proposed listing the monarch as Threatened or Endangered, then the benefits of participation would be greater still.



METHODS

To conduct this evaluation, the participants used the following methods to complete a thorough and consistent approach:

1. **Gathering Variables** – Participants at the Fall 2018 Rights-of-Way as Habitat Working Group meeting helped brainstorm variables to quantify in the evaluation. The participants then narrowed these variables to those that could be easily and consistently quantified.
2. **Formatting and Testing Analysis** – The participants then reviewed and tested the cost-benefit evaluation framework to verify that the approach would provide an unbiased, quantifiable approach.
3. **Conducting the Evaluation** – The participants then used the evaluation tool to estimate the costs and benefits of participation in the Agreement on an annual basis.
4. **Results** – The annual evaluations were extrapolated across a 5-year duration to assess the short-term return on investment (ROI).
5. **Comparison and Feedback** – Participants then compared results, discussed insights and shared the collective results with participants at the Spring 2019 Rights-of-Way as Habitat Working Group meeting.
6. **Refining the Evaluation Tool** – Sharing these results and insights in Spring 2019 allowed additional insights into the evaluation and its application.

COSTS

- Administrative and Legal Costs
- Implementation Costs
- Annual Reporting
- Compliance Tracking
- Effectiveness Monitoring

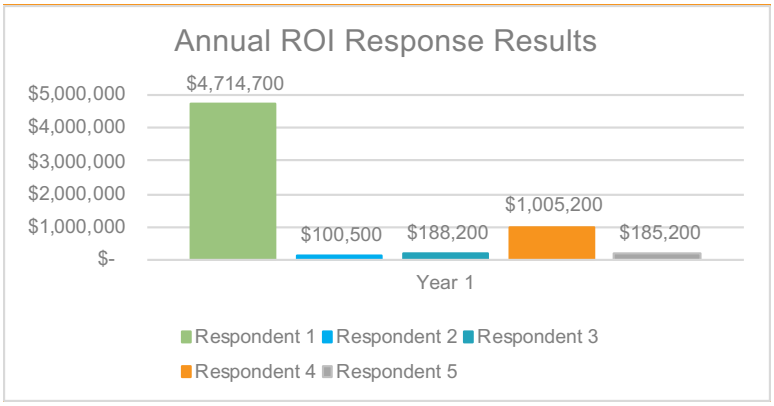
BENEFITS

- 3rd Party Administration and Reporting
- Reduced Implementation Costs
- Benefits from Future Adaption
- Technical Support
- USFWS Coordination
- Cost Reduction from Regulatory Assurances

FINDINGS

Based on the responses received, the five participants in this exercise all forecasted a net benefit from participation in the Agreement even if the monarch is not listed under the ESA. The degree to which benefit is returned varies by each participant. Factors driving such variation included:

- **Degree of operational cost-savings** promoted by conservation measures. Some participants envision that a shift to more targeted vegetation management can save time and reduce costs for their operations.
- **Size of enrolled system.** Participants with more enrolled lands generally exhibited a greater ROI and higher cost-benefit ratio.
- **Value of regulatory certainty.** Some partners valued the ability of the Agreement to address regulatory certainty more than others. Some participants placed a higher value on the ability of the Agreement to provide certainty in the event of challenges to the listing decision, which could result in frequent changes in listing status (similar to the history of the gray wolf and grizzly bear).



- **Value of technical support and information sharing.** Participants involved in the development of the Agreement have found value in the information sharing and technical resources gained through the partnership involved in its development. Such technical support and information sharing to ease implementation can provide real financial value to participants.

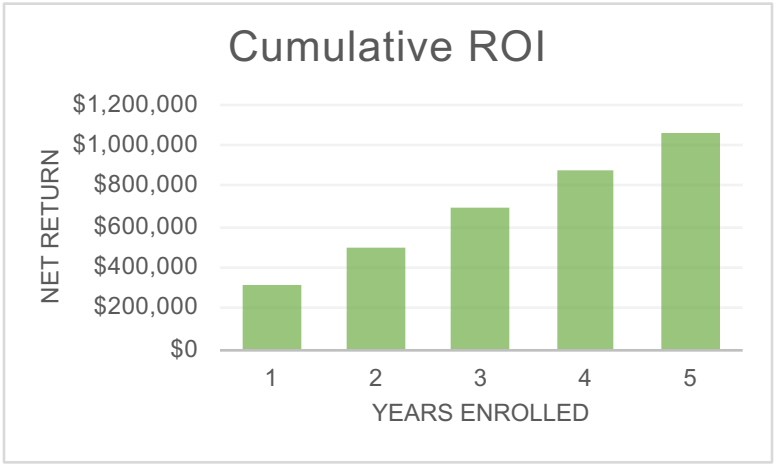
EXAMPLE SCENARIOS

The two scenarios outlined here provide examples of individual participant cost-benefit analysis. Company and individuals that conducted these assessments are kept anonymous. The example scenarios shared here provide a glimpse into how individual participants quantified their cost-benefit evaluation for their particular organization.

1 An Energy Transmission & Distribution Utility

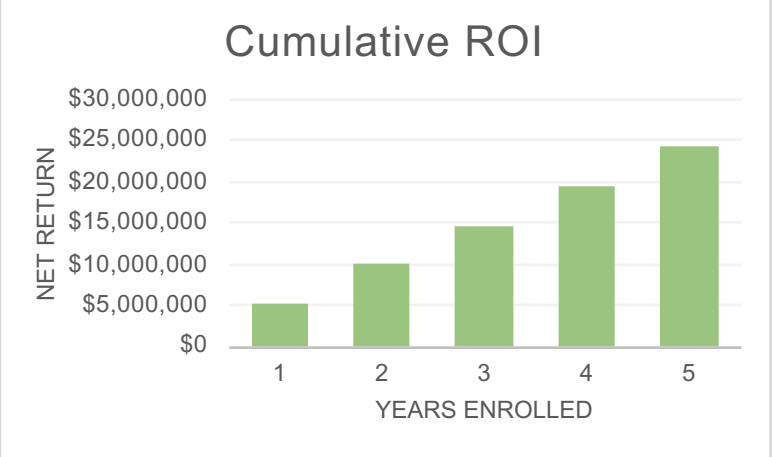
Key considerations and assumptions made by this participant:

- Estimated an annual enrollment fee of $15,000
- Enrolls and implements conservation measures on 2,000 adopted acres
- Assumes in-house annual reporting, compliance tracking, and monitoring costs $5,000 each year.
- The participant found the most value in the benefits of "reducing the risk of uncertainty" and "technical guidance and information sharing" gained through participation.



In this scenario, the company incurred some additional administrative costs from participating. However, operational costs were minimal since conservation measures involved minor amendments to the integrated vegetation management already being conducted for maintenance purposes. Benefits valued most by this participant were a) business certainty and the costs saved from avoiding any potential future listing, and b) the value-added and costs saved through the technical guidance and information sharing gained through involvement in the partnership supporting the Agreement, which totaled $315,800.

The estimated Annual Implementation Cost of $125,600 vs. the Annual Implementation Benefit of $315,800 yields an expected annual benefit of $190,200. In other words, **for every $1.00 spent on participation in the Agreement, approximately $2.50 was returned in benefits gained**. The cumulative ROI over five years of participation are expected to be over $1 million.



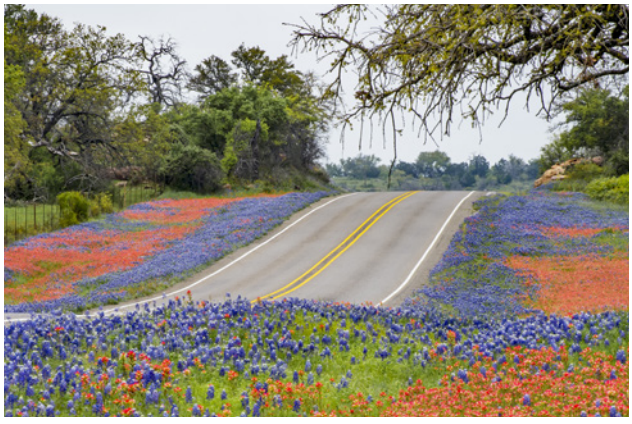
In this scenario, the Annual Implementation Cost of $516,100 vs. the Annual Implementation Benefit of $5,235,800 yields an expected annual benefit of $4,719,700. In other words, **for every $1.00 spent on participation in the Agreement, approximately $10.00 was returned in benefits gained**. The cumulative ROI over five years of participation are expected to be over $24 million.

EXAMPLE SCENARIOS

2 State Department of Transportation

Key considerations and assumptions made by this participant:

- Estimated an annual enrollment fee of $15,000
- Enrolls and implements conservation measures on 80,000 acres. Most implementation costs are already covered by routine vegetation management. The only added implementation costs expected are additional native species seeding on construction projects, assumed at a cost of $400/acre or $480,000 annually.
- Assumes in-house annual reporting, compliance tracking, and monitoring at around $19,100.00 annually.
- The participant found the most value in the reduced implementation costs resulting in changing routine vegetation management to promote conservation measures like conservation mowing, for an estimated total of $4.8M annually.
- The participant also found value in savings resulting from "reducing the risk of uncertainty", "technical guidance and information sharing", and "ability to adapt to other species or industry needs."



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