

Final Draft-September 25, 2000

**DRAFT ECONOMIC ANALYSIS
OF CRITICAL HABITAT DESIGNATION
FOR THE ZAPATA BLADDERPOD**

September 2000

Prepared for:

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1. INTRODUCTION AND BACKGROUND

1. In July 2000, the U.S. Fish and Wildlife Service (the Service) proposed designation of critical habitat for the Zapata bladderpod (*Lequerella thamnophila*) on approximately 5,333 acres of south Texas land. The purpose of this report is to identify and analyze the potential economic impacts that would result from the proposed critical habitat designation. This report was prepared by Industrial Economics, Incorporated (IEc), under contract to the U.S. Fish and Wildlife Service's Division of Economics.
2. Section 4(b)(2) of the Endangered Species Act (ESA) requires the Service to base proposed designation of critical habitat upon the best scientific and commercial data available, after taking into consideration the economic impact, and any other relevant impact, of specifying any particular area as critical habitat. The Service may exclude areas from critical habitat designation when the benefits of exclusion outweigh the benefits of including the areas within critical habitat, provided the exclusion will not result in extinction of the species.
3. Under the listing of a species, section 7(a)(2) of the ESA requires Federal agencies to consult with the Service in order to ensure that activities they fund, authorize, or carry out are not likely to jeopardize the continued existence of the species. The ESA regulations define jeopardy as any action that would appreciably reduce the likelihood of both the survival and recovery of the species. For designated critical habitat, section 7(a)(2) also requires Federal agencies to consult with the Service to ensure that activities they fund, authorize, or carry out do not result in destruction or adverse modification of critical habitat. Adverse modification of critical habitat is defined as any direct or indirect alteration that appreciably diminishes the value of critical habitat for the survival and recovery of the species.
4. This analysis must distinguish between economic impacts caused by the ESA listing of the bladderpod and those additional effects that would be caused by the proposed critical habitat designation. The Service only considers the incremental economic impacts of the critical habitat designation above those of the listing and other laws because the ESA specifically excludes the Service from considering the economic impacts of the listing. To evaluate the increment of economic impacts attributable to the critical habitat designation for the bladderpod, above and beyond the ESA listing, the analysis assumes a "without critical habitat" baseline and compares it to a "with critical habitat" scenario. The difference between the two is a measurement of the net change in economic activity that may result from the designation of critical habitat for the bladderpod. In the event that a land use or activity would be limited or prohibited by another existing statute, regulation, or policy, the economic impacts associated with those limitations or prohibitions would not be attributable to critical habitat designation.
5. The critical habitat designation for the bladderpod encompasses land owned or managed by the Service, Texas Department of Transportation (TxDOT), and a private party. This analysis assesses how critical habitat designation for the bladderpod may affect current and planned land uses

and activities on these lands. For Service managed land, designation of critical habitat may affect activities, land uses, and other actions that may adversely affect critical habitat. For TxDOT land holdings and private land subject to critical habitat designation, consultations and modifications to land uses and activities can only be required when a Federal nexus, or connection, exists. A Federal nexus arises if the activity or land use of concern involves Federal permits, Federal funding, or another form of Federal involvement. Activities on state and private land that do not involve a Federal nexus are not affected by critical habitat designation.

6. To be considered in the economic analysis, activities must be "reasonably foreseeable," i.e. activities which are currently authorized, permitted, or funded, or for which proposed plans are currently available to the public. Current and future activities that could potentially result in new or reintiated section 7 consultations or modifications due to the critical habitat designation are considered.

1.1 Description of Species and Habitat

7. The Zapata bladderpod is a silvery-green perennial plant that grows between 17 and 34 inches high and produces yellow flowers and small fruit.¹ The bladderpod exhibits extreme fluctuations in the number of detectable individuals in a population, and such fluctuations are associated with the amount of rainfall. Bladderpod populations are often barely detectable during dry periods, and then appear abundantly after substantial rainfall. Accordingly, detectable populations vary widely from season to season and year to year.

8. In the U.S., the Zapata bladderpod is only found in the southern Texas counties of Starr and Zapata along the Rio Grande River. Based on field surveys and research, the Service has identified physical and biological habitat features, referred to as primary constituent elements, that are essential for the survival and recovery of the Zapata bladderpod. Primary constituent elements for the bladderpod include:

arid upland habitats of various soil types, including highly calcareous sandy loam, with low to moderate salinity levels on low, sloping hills;

absence of substantial previous soil disturbance and seeding or sodding of exotic grasses; and

¹ Information on the Zapata bladderpod and its habitat is taken from the *Proposed Determination of Critical Habitat for the Zapata Bladderpod*, July 19, 2000 (65 FR 44717).

sparse overstory of shrub species typical of the Tamaulipian biotic province, but lacking a complete canopy as might be provided by a continuous overstory dominated by mesquite.

1.2 Proposed Critical Habitat

9. The Service has proposed critical habitat designation for the Zapata bladderpod on approximately 5,333 acres of land near the Rio Grande in Starr and Zapata Counties. This land is almost entirely Federally owned by the Service, which manages 5,329 acres of the proposed critical habitat on the Lower Rio Grande Valley National Wildlife Refuge in Starr County. Of the remaining land, the TxDOT controls 3.0 acres in Zapata County and a private landowner owns 1.4 acres in Starr County.

National Wildlife Refuge- The 5,329 acres of Refuge land proposed for critical habitat designation have been divided up into seven separate tracts: two groups of three geographically close tracts, and one geographically isolated tract. The tracts are Cuellar, Chapeno, Arroyo Morteros, Las Ruinas, Arroyo Ramirez, Los Negro Creek, and La Puerta. Only 40.5 acres of the proposed critical habitat are currently within the geographic area known to be occupied by Zapata bladderpod populations.

TxDOT- Proposed critical habitat on TxDOT land consists of two equally sized parcels of 1.5 acre in two locations along the Highway 83 right-of-way. One parcel currently supports an extant population of bladderpods. The other parcel has historically supported bladderpod populations, but is currently unoccupied by the species.

Private- The private land proposed for critical habitat designation sits on a high bluff less than one mile northeast of the Rio Grande and about two miles northeast of the town of Salineno. The land around the proposed critical habitat is used for grazing cattle. This private parcel currently supports a population of the Zapata bladderpod.

10. Although most of the proposed critical habitat is not known to currently support populations of the Zapata bladderpod, the Service finds that all of the land proposed as critical habitat is essential for the conservation of the species. The unoccupied areas proposed for critical habitat designation possess the primary constituent elements necessary for the discovery or establishment of new populations, continued growth of current populations, and the recovery of the species as a whole.

2. **FRAMEWORK, METHODOLOGY, AND IMPACTS**

2.1 Framework for Analysis

11. As noted above, this economic analysis examines the impacts to specific land uses or activities within those areas proposed as critical habitat for the bladderpod. An impact of critical habitat designation includes any effect of the designation above and beyond the impacts associated with the listing of the species. This report employs a framework that compares economic activity with critical habitat designation to economic activity without critical habitat designation. The without-critical-habitat baseline for analysis represents current and expected economic activity under all modifications prior to critical habitat designation, including protections already accorded to the bladderpod under state and Federal laws, such as the National Environmental Policy Act. The difference between the two scenarios measures the net change in economic activity attributable to the designation of critical habitat for the bladderpod. The ESA listing of the bladderpod is the most significant aspect of baseline protection, as it provides the most protections since it makes it illegal for any person to remove or reduce to possession the species from areas under Federal jurisdiction; maliciously damage or destroy the species on any such area; or remove, cut, dig up, or damage or destroy the plant species on any other area in knowing violation of any law or regulation of any state or in the course of any violation of a state criminal trespass law.

2.2 Methodological Approach

12. This report relies on a sequential methodology and focuses on distilling the salient and relevant aspects of potential economic impacts of designation. The methodology consists of:

Considering what specific activities take place on the Refuge, TxDOT, and private land affected by critical habitat designation;

Identifying whether activities taking place on the state and private land are likely to involve a Federal nexus;

Evaluating the likelihood that identified Federal nexuses will result in consultations and, in turn, that consultations will result in modifications to projects;

Determining if critical habitat designation on Refuge land will lead to additional consultations or project modifications;²

² Two types of consultations could occur as a result of critical habitat designation. A section 7 consultation for activity on Refuge, TxDOT, or private land could take place between the Service and a Federal agency with a nexus to the activity. An intra-agency consultation for activity

Attributing costs to any expected consultations and project modifications;

Assessing if critical habitat designation will create costs for small businesses as a result of modifications or delays to projects;

Enumerating economic costs associated with public perception about the effect of critical habitat on the private land subject to the designation;

Establishing benefits of critical habitat designation.

2.3 Information Sources

13. The methodology outlined above relies on input and information from Service staff at field and regional offices and TxDOT staff. As comments and information on land uses and the effects of critical habitat designation were not available from the private landowner, Service field office staff could only speculate as to activities likely to occur on the private land.

2.4 Impacts

2.4.1 Lower Rio Grande Valley National Wildlife Refuge

14. Multiple activities that could affect bladderpod habitat take place in or near the proposed critical habitat on the Wildlife Refuge. According to the Service, road work, vegetation management, oil and gas leasing, land sales and exchanges, pipeline work, and right-of-way work all have taken place in the past or could potentially take place in the future.³ Section 7 consultations have addressed completed road work, completed pipeline work, and an on-going project to install new electrical lines through the proposed critical habitat areas.
15. Service staff indicate that critical habitat designation will not likely expand or prolong the existing consultation for the electrical line work. However, Service staff believe that critical habitat

on the National Wildlife Refuge could be initiated between Service staff from the field office and Service staff at the National Wildlife Refuge.

³ Personal communications with Wildlife Biologist, Ecological Field Services Office, U.S. Fish and Wildlife Service, Corpus Christi, Texas, August 25 and 29, 2000; and with Ecological Field Service Personnel, U.S. Fish and Wildlife Service, Lower Rio Grande Valley Wildlife Refuge, Texas, August 28, 2000.

designation on unoccupied land will necessitate an informal intra-agency consultation for a project to eliminate exotic grasses and reintroduce native grasses on the National Wildlife Refuge. Service staff indicate that the cost of this consultation will be so low as to be considered negligible.⁴

16. Currently, TxDOT has developed a plan to expand and reroute Highway 83 through tracts of the Wildlife Refuge containing proposed critical habitat. The Service indicates that critical habitat designation will necessitate an inter-agency consultation with the Federal Highways Administration (FHWA) for this highway project. Again, Service staff maintain that the costs for this consultation will be negligible.
17. Finally, some owners of land bordering the Refuge have initiated the planting of buffelgrass on their property to improve pasture and provide right-of-way cover. This non-native species is characterized by a high germination rate, and has the potential to migrate onto the critical habitat areas proposed on Refuge land. While buffelgrass planting on these adjacent lands may pose a threat of adverse modification to the proposed Refuge critical habitat areas, the extent of these initiatives and the potential for a Federal nexus (e.g., funding from the Natural Resource Conservation Service (NRCS) of the U.S. Department of Agriculture) is unclear at this time. The Service is seeking information from reviewers of this document and the proposed critical habitat designation rule on the extent of buffelgrass planting in areas adjacent to the Refuge, and any potential Federal nexuses associated with these activities.

2.4.2 Texas Department of Transportation

18. TxDOT is conscious of the need to protect the bladderpod, and has taken protective measures on its land in the past, such as posting signs and developing a handbook to warn employees not to mow bladderpod habitat. However, TxDOT plans to expand Highway 83 from two to four lanes, into one of the critical habitat areas, and to expand the right-of-way in order to allow for further road expansion in the future.⁵ Approximately 90 percent of the funding for TxDOT road construction comes from Federal sources such as the FHWA. Therefore, this planned project involves a Federal nexus, which requires the FHWA to initiate a consultation with the Service under critical habitat designation.
19. TxDOT reports that, even in the absence of critical habitat designation, the Service would have reviewed this project, under the Fish and Wildlife Coordination Act (FWCA), so any costs due

⁴Correspondence with Regional Section 7 Coordinator, U.S. Fish and Wildlife Service, Albuquerque, New Mexico Office, August 30, 2000.

⁵ Personal communication with District Environmental Coordinator, Texas Department of Transportation, Pharr Office, August 30, 2000.

to consultation would not be attributable to critical habitat designation. According to TxDOT, this “consultation” would likely not have led to the need for modifications to the project because the land is believed to be unoccupied. Under critical habitat designation, however, economic impacts to this project could result from the need to avoid or minimize potential adverse modifications of critical habitat. However, the Service believes that consultation would have been appropriate due to the listing of the bladderpod.

20. As the alignment of the road has not yet been developed, TxDOT and the Service will meet to discuss development of plans for the highway (under FWCA). TxDOT indicates that this meeting would have occurred without proposed critical habitat designation. Nevertheless, TxDOT has raised concerns that the designation of critical habitat will necessitate further project modifications that would not have been necessary under the listing and that these project modifications will create costs to TxDOT and private landholders. Specifically, if bladderpod critical habitat is in the right-of-way for the new highway, future TxDOT road work could be affected. Also, critical habitat designation could limit development in the right-of-way and property access to the expanded highway, thereby affecting private landowners along the highway. However, TxDOT did not indicate that specific plans exist for development along Highway 83.
21. Conversations with TxDOT reveal that critical habitat designation for the bladderpod will likely result in the need for mitigation for the Highway 83 expansion project.⁶ Due to the preliminary stage of planning for the highway expansion, it is unclear what specific mitigation measures will be necessary. Possible mitigation measures include providing additional habitat for the bladderpod elsewhere and altering the alignment of the road from what it would have been without critical habitat designation. In southern Texas, an acre of land costs between \$600 and \$1500. Land suitable for bladderpod habitat would likely be around \$1000 per acre.⁷ For mitigation involving acquisition of new habitat for the bladderpod, TxDOT would likely purchase land of similar size to that of the proposed critical habitat, on the scale of 0.5 to 2.0 acres, leading to a total cost of approximately \$500 to \$2000. The cost to lay one mile of four-lane, divided highway is approximately \$1 million.⁸ If mitigation necessitates a change of the alignment, the increase in the length of Highway 83 would likely be on the scale of 0.05 to 0.2 mile, requiring an outlay of approximately \$50,000 to \$200,000.

⁶ Personal communication with Environmental Coordinator, Texas Department of Transportation, Pharr Office, September 13, 2000.

⁷ Personal communication with Wildlife Biologist, U.S. Fish and Wildlife Service, Ecological Field Service Personnel at Lower Rio Grande Valley National Wildlife Refuge, Texas, September 13, 2000.

⁸ Personal communication with Environmental Coordinator, Texas Department of Transportation, Pharr Office, September 13, 2000.

22. As mentioned above, TxDOT also has plans to expand Highway 83 in the National Wildlife Refuge. The Service insists that no project modifications to the highway expansion will result from critical habitat designation. The Service already requires any party seeking to use National Wildlife Refuge land to perform surveys, environmental assessments, and a determination of compatibility with the goals of the National Wildlife Refuge, regardless of whether the proposed project will take place in critical habitat. A project can take place on the Refuge only if the Service deems that the project does not significantly and adversely impact National Wildlife Refuge land. Therefore, the Service believes that any costs to TxDOT associated with project modifications or administrative effort would be due to the listing of the bladderpod and the National Wildlife Refuge's requirement to comply with the Refuge Compatibility Act, not due to the designation of critical habitat.

2.4.3 Private Land

23. Conversations with the Service reveal that, on the whole, little activity takes place on the private land proposed as critical habitat for the Zapata bladderpod.⁹ While the proposed critical habitat is located on land used for cattle grazing, the Service reports that cattle would not likely graze in the rugged terrain of the high bluff on which the critical habitat sits.
24. Nonetheless, it is possible that the owner could attempt to convert the proposed critical habitat area into buffelgrass for grazing. Such a conversion could create a Federal nexus if the private landowner used funding or equipment from the NRCS. This nexus would lead to a consultation between NRCS and the Service. However, no specific information about intended land uses is available from the land owner, so consideration of a conversion to buffelgrass is purely speculative at this point.
25. The Service also suggested that oil drilling could possibly take place near proposed critical habitat if oil were found under the bluff. However, no information exists as to indicate that oil activity could likely take place in the proposed critical habitat. In addition, the Service does not believe that critical habitat designation would affect oil drilling, because the height of the bluff would require the use of directional drilling, which would take place away from the critical habitat.
26. In sum, to the best of the Service's knowledge, impacts on private land are expected to be minimal. The site is currently in the geographic area occupied by the bladderpod, so any consultations or modifications to projects would result from the listing of the bladderpod and not from the designation of critical habitat. Furthermore, no significant activity takes place in the proposed critical habitat on private land, or will likely take place in the future.

⁹ Personal communication with Wildlife Biologist, Ecological Field Services Office, U.S. Fish and Wildlife Service, Corpus Christi, Texas, August 25 and 29, 2000.

2.5 Summary of Impacts

27. Exhibit 1 summarizes the potential for new consultations and project modifications and the expected costs that will result from critical habitat designation for the Zapata bladderpod.

Exhibit 1				
SUMMARY OF ECONOMIC IMPACTS ASSOCIATED WITH CRITICAL HABITAT DESIGNATION FOR THE ZAPATA BLADDERPOD				
Land Owner	Reasonably Foreseeable Activities and Land Uses within Proposed Critical Habitat	Likelihood of New Consultations	Likelihood of Project Modifications	Expected Costs
Fish and Wildlife Service	Vegetation management, Highway 83 expansion and rerouting	High	Low	Negligible
Texas Department of Transportation	Highway 83 expansion and rerouting	Low	High	Provide Alternate Habitat \$500-\$2000
				Change of Alignment \$50,000-\$200,000
Private landowner	Grazing	Low	Low	Undeterminable

2.6 Potential Impacts to Small Businesses

28. Under the Regulatory Flexibility Act (as amended by the Small Business Regulatory Enforcement Fairness Act (SBREFA) of 1996), whenever a Federal agency is required to publish a notice of rulemaking for any proposed or final rule, it must prepare and make available for public comment a regulatory flexibility analysis that describes the effect of the rule on small entities (i.e., small businesses, small organizations, and small government jurisdictions).¹⁰ However, no regulatory flexibility analysis is required if the head of an agency certifies that the rule will not have a significant economic impact on a substantial number of small entities. SBREFA amended the Regulatory Flexibility Act to require Federal agencies to provide a statement of the factual basis for certifying that a rule will not have a significant economic impact on a substantial number of small entities.

29. The only small business potentially affected by the designation is the livestock operation that takes place on the one parcel of private land proposed for critical habitat designation. Given that the

¹⁰ 5 U.S.C. 601 et seq.

proposed critical habitat area is located on a high bluff, covers so little area, and is already a geographic area occupied by the species, the impact to the grazing operation should be minimal.

2.7 Potential Impacts Associated with Project Delays and Property Values

30. Proposed critical habitat for the bladderpod on the National Wildlife Refuge and TxDOT right-of-way present no currently known or foreseeable opportunities for commercial and residential development. Due to the lack of information regarding the privately owned land, it is unclear what future land uses may be. However, discussions with Service staff indicate that the topography of the area precludes plans for major land-modifying projects that could require lengthy Section 7 consultation. Additionally, the private parcel is quite small, and would not likely support a large scale development. Lastly, the private parcel is a geographic area occupied by the bladderpod, so any costs associated with project delays would be attributable to the listing of the plant, and not the designation of critical habitat.
31. Based on the rugged terrain and small area of the proposed critical habitat on private land, Service staff do not believe that property values of the private land would be impacted by public perceptions of the critical habitat designation.¹¹ However, this will be further explored in communications with the private landowner prior to completing the final economic analysis.

¹¹ Personal communication with Wildlife Biologist, Ecological Field Services Office, U.S. Fish and Wildlife Service, Corpus Christi, Texas, August 25 and 29, 2000.

2.8 Benefits

32. The Service cites regulatory, educational, and informational benefits that may result from critical habitat designation.¹² Designation will likely do the following:

help focus conservation activities for the bladderpod by identifying areas that are essential for the conservation of the bladderpod;

alert the public as well as the National Wildlife Refuge and TxDOT to the importance of these areas;

provide for the conservation and recovery of the bladderpod within this portion of its geographic range in the United States.

¹² Personal correspondence with Wildlife Biologist, Ecological Field Services Office, U.S. Fish and Wildlife Service, Corpus Christi, Texas, September 12, 2000.

REFERENCES

Personal communication and correspondence with Wildlife Biologist, U.S. Fish and Wildlife Service, Ecological Field Services Office, Corpus Christi, Texas Office, August 25 and 29, and September 12, 2000.

Personal communication with Wildlife Biologist, U.S. Fish and Wildlife Service, Ecological Field Service Personnel at Lower Rio Grande Valley National Wildlife Refuge, Texas, August 28, 2000.

Personal communication with Wildlife Biologist, U.S. Fish and Wildlife Service, Ecological Field Service Personnel at Lower Rio Grande Valley National Wildlife Refuge, Texas, August 28 and September 13, 2000.

Personal communication with Chief of Section 7 Consultations, U.S. Fish and Wildlife Service, Albuquerque, New Mexico Office, August 28 and 30, 2000.

Personal communication with District Environmental Coordinator, Texas Department of Transportation, Pharr Office, August 30, 2000.

Personal communication with Environmental Coordinator, Texas Department of Transportation, Pharr Office, September 13, 2000.