FINAL ADDENDUM TO ECONOMIC ANALYSIS OF CRITICAL HABITAT DESIGNATION FOR THE PENINSULAR BIGHORN SHEEP

January 2001

INTRODUCTION

In July 2000, the U.S. Fish and Wildlife Service (the Service) published a proposed rule to designate critical habitat for the Peninsular bighorn sheep *(Ovis Canadensis cremnobates*) under the Endangered Species Act of 1973, as amended (the Act). Because the Act also calls for an economic analysis of the critical habitat designation, the Service released a *Draft Economic Analysis of Critical Habitat Designation for the Peninsular Bighorn Sheep* (hereafter *DEA*) for public review and comment in October 2000.[1]

After considering the public comments on the proposed rule, the Service made revisions to the critical habitat designation for the Peninsular bighorn sheep (hereafter "bighorn sheep"). This Addendum addresses the implications of these revisions for the conclusions in the *DEA*, and presents revised estimates of economic impacts where appropriate. Public comments specific to the *DEA* were also considered in preparing this Addendum. In addition, certain topics addressed in the analysis were revisited and additional data were gathered.

In summary, the revised estimates for the *DEA* presented here result from:

- Changes to the area of the critical habitat designation,
- Public comments on the *DEA* itself; and
- Additional research conducted after publication of the *DEA*.

IMPLICATIONS AND REVISED ESTIMATES FOR THE DRAFT ECONOMIC ANALYSIS

The following sections describe the implications of changes in the revised critical habitat designation, public comments, and additional research on the analysis presented in the *DEA*. ***Section numbers presented in the headers of this addendum refer to the section numbers of the DEA.***

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[1] Copies of the *Draft Economic Analysis of Critical Habitat Designation for the Peninsular Bighorn Sheep* are available on the Internet at ''http://pacific.fws.gov/crithab/pbsh'' or by writing to the Field Supervisor, U.S. Fish and Wildlife Service, Carlsbad Fish and Wildlife Office, 2730 Loker Avenue West, Carlsbad, California, 92008.

Critical Habitat Units, Section 2.2

The Service has revised the critical habitat designation to address the concerns of commenters. Specifically, the Service removed approximately 29,900 acres that fall within the proposed critical habitat designation, but outside of the essential habitat designation defined in the Recovery Plan (i.e. "uncertain land"). These changes involve the urbanized areas of the Coachella Valley in Riverside County. This reduction in the size of the designation reduces the number of projects that could potentially be affected by critical habitat, and thus has an impact on the estimates made in the *DEA*. These impacts are discussed in the remainder of this Addendum.

Baseline Statutory and Regulatory Requirements, Section 2.3.1

The *DEA* defines a baseline regulatory scenario, i.e. "without critical habitat" scenario, to determine which economic effects are attributable to the designation of critical habitat and which effects would have occurred without the designation. This Addendum characterizes new or additional baseline elements identified after the publication of the *DEA*.

One such new element is Executive Order 13175, entitled *Consultation and Coordination with Indian Tribal Governments* (hereafter "Order"), which was signed by President Clinton after the publication of the *DEA* on November 6, 2000. This Order builds on the policies outlined in the Presidential Memorandum of April 29, 1994, entitled *Government-to-Government Relations with Native American Tribal Governments* (hereafter "Memorandum"), that was described in the baseline section of the *DEA*. For example, both the Order and the Memorandum state that the executive departments and agencies shall work with federally recognized Indian Tribes on a government-to-government basis. The Order enhances that discussion by stating that, for example;

- The Federal Government shall grant Tribes the maximum administrative discretion possible;

- Federal Agencies shall encourage Indian Tribes to develop their own policies to achieve program objectives and, where possible, defer to Indian Tribes to establish standards;

- No Agency shall promulgate any regulation that has tribal implications, that imposes substantial direct compliance costs on Indian Tribal governments, and that is not required by statute, unless 1) the funds necessary to pay the direct costs incurred by the Tribe in complying with the regulation are provided by the Federal Government, or 2) the agency a) consults with the Tribal officials early in the process of developing the regulation, b) provides a Tribal summary impact statement in the preamble of the regulation, and c)

makes available to the Office of Management and Budget any written communications submitted to the Agency by the Tribal officials;

- Agencies shall review and streamline the processes under which Indian Tribes apply for waivers; and

- Each Agency shall designate an official with the principal responsibility for the agency's implementation of the Order.

While the full effect of this Order will depend on its implementation, it appears that the net effect is likely to be a reduction in the potential for unfunded section 7 consultations, project modifications, and other impacts associated with the designation of critical habitat for the bighorn sheep. The cost impact of the Order on the Tribes is discussed in the Trust lands section of this Addendum.

Socioeconomic Profile of the Critical Habitat Areas, Section 2.3.2

The *DEA* describes the socioeconomic indicators for areas in and around the proposed critical habitat designation, and provides the average annual growth rates in housing units over the past ten years for several cities in the Coachella Valley. One comment mentioned the fact that the *DEA* does not list the growth rate of Palm Springs. The average annual growth rate in housing units in Palm Springs was 0.5 percent between 1990-2000, which is below the growth rates of the other municipalities in the area and the state average of 0.9 percent.[2]

Categories of Economic Impacts, Section 3.1.1

The *DEA* defines the potential economic impacts that could be attributed to the designation of critical habitat. Several commenters mention the possibility that the Service could require mitigation fees and land purchases as a result of section 7 consultations. The implications of the inclusion of mitigation fees and land purchases as possible results of the section 7 consultation process are discussed in the total economic impacts section of this Addendum.

Potential Federal Nexuses Within Critical Habitat, Section 3.2

The *DEA* identifies potential Federal nexuses that could occur for activities on areas designated as critical habitat. One comment suggests that the *DEA* should address the swap and sale of BLM land as a potential Federal nexus for the Bureau of Land Management and the sale and lease of Indian owned or Allottee land as a potential Federal nexus with the Bureau of Indian Affairs. The

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[2]State of California, Department of Finance, "City/County Population and Housing Estimates, 1991-2000, with 1990 Census Counts."

implications of these additional nexuses are addressed in the land owner or manager impacts section below.

Potential Costs and Benefits Due to Critical Habitat, Section 3.3

The *DEA* establishes a methodology for determining which land areas will have economic effects associated with the listing of the bighorn sheep, and which lands will have economic effects attributable to the designation of critical habitat. The *DEA* assumes that all economic impacts on activities taking place within the essential habitat are attributable to the listing, while impacts on activities taking place within the "uncertain land" have the potential to be attributable to the designation of critical habitat. The *DEA* defines "uncertain land" as the land outside of essential habitat but contained within the proposed designation of critical habitat. For the uncertain lands that support a current or reasonably foreseeable activity with a Federal nexus, the *DEA* provides a framework for determining whether the activity will be impacted by the designation of critical habitat. The possible economic costs include the costs associated with informational conversations, habitat evaluations, section 7 consultations, project modifications, project delays, and California Environmental Quality Act (CEQA) conversations and Environmental Impact Reports (EIRs).

However, several commenters provided new information indicating that economic costs associated with project modifications could be higher than the costs estimated in the *DEA*. While the *DEA* does provide a range of potential economic impacts associated with modifying projects (see paragraph 91), several commenters provide examples of hypothetical or historical project modifications whose economic impacts are likely to be higher than the range of impacts presented in the *DEA*. These examples include modifications to golf courses and housing developments near the urbanized areas of the Coachella Valley. The economic effects on these projects could include mitigation fees, land purchases, fencing requirements, and modifications in the scope of the project. This type of project modification is only likely to occur in around the urbanized areas of the Coachella Valley in Riverside County and is not characteristic of the type of project modifications that could be required throughout the entire critical habitat designation. Therefore, these costs are considered in a separate category of potential economic effects. Estimations of the costs and frequency of these project modifications attributable to the revised critical habitat designation are made in the Total Economic Costs section of this Addendum.

LAND OWNERS AND MANAGERS POTENTIALLY IMPACTED BY CRITICAL HABITAT

The *DEA* lists the major categories of land owners and managers affected by the critical habitat designation. For each land owner or manager, the *DEA* identifies the activities on the affected land, the past consultations regarding the bighorn sheep, and the potential future consultations. The *DEA* also identifies which future impacts are likely to be attributable to the proposed designation of critical habitat. This section of the Addendum reconsiders the likelihood

that each land owner or manager will face incremental impacts due to the designation of critical habitat. These revised projections are based on new information provided by the commenters, additional research, and the revised critical habitat designation. Exhibit 1 presents a qualitative summary of the revised potential for impacts for each land owner or manager. These revised projections are used to estimate the frequency of economic impacts in the total economic costs section below.

Trust Lands[3], Section 3.3.3

As mentioned above, Executive Order 13175 supplements the economic baseline characterized in the *DEA*. While it is difficult to predict how this Order will affect the cost estimates made in the *DEA*, it seems likely that the Order will reduce economic impacts associated with incremental section 7 consultations and project modifications. This is because the Order requires the Service to grant the Tribes the maximum administrative discretion possible and avoid imposing substantial direct compliance costs on the Tribes. This Order is likely to reduce any potential of incremental impacts for all of the effected Tribes (e.g., a "moderate" potential for incremental impacts is reduced to a "low/moderate" potential for incremental impacts.)

As mentioned above, one commenter provided information that the sale and lease of Indian owned and Allottee land prompts a Federal nexus with the Bureau of Indian Affairs. All of the Tribal reservations have the potential to contain Indian-owned or Allottee land that is within the uncertain land of the revised critical habitat designation. While no specific example was mentioned in the public comments, there is a possibility that this nexus could create incremental economic impacts ranging from informational conversations to project modifications for all of the Tribes. However, due to the effects of Executive Order 13175 mentioned above, this nexus is only likely to have a low to moderate potential for incremental impacts. This new nexus for all of the Tribes is presented in Exhibit 1.

Morongo Tribe. The *DEA* estimates that critical habitat is unlikely to have any economic impact on the Morongo reservation because the Service states that section 7 consultations with the Tribe are unlikely in the near future. One commenter provided new information that the Tribe may have a potential Federal nexus regarding windmill leases or access roads through the Bureau of Indian Affairs, and that these activities could take place on "uncertain land." This new information increases the potential for the Morongo Tribe to incur incremental costs associated with the designation of critical habitat. However, due to Executive Order 13175, there is only a low to moderate potential for incremental impacts. This revised potential is shown in Exhibit 1.

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[3]One commenter mentioned that the term "manages" is incorrectly used in the *DEA* to describe the Tribes' association with the Trust land. The comment states that the Tribes are sovereign nations and not land managers. The Tribes reserved title to the land and it is held in trust for the Tribes by the United States.

Torres Martinez. The *DEA* states that the designation of critical habitat is not likely to impact the Torres Martinez Tribe above and beyond the impacts associated with the listing. The Torres Martinez Tribe comment provides new information that the Tribe is considering some natural resource development projects within their Reservation that may fall on uncertain land. The Tribe also comments that, contrary to the information provided in the *DEA*, the conservation of the bighorn sheep is a high priority for the Tribe, although they are not currently preparing a formal Habitat Management Plan. This information regarding the proposed natural resource development projects and the lack of a Tribal Habitat Management Plan increases the potential that the Torres Martinez Tribe will face incremental costs due to the designation of critical habitat. However, due to Executive Order 13175, there is only a low to moderate potential for incremental impacts. Exhibit 1 reflects this change.

Agua Caliente. The *DEA* states that the designation of critical habitat is unlikely to adversely impact the Agua Caliente Tribe. However, the Agua Caliente Tribe comments that the economic analysis does not address the numerous proposed projects within, or adjacent to, Tribal lands that will be affected by the designation of critical habitat. The Tribe believes that critical habitat designation on Tribal lands will threaten the economic viability of those projects by considerably increasing delays, alterations, and mitigation requirements related to them. The Tribe believes that the economic impact estimates, therefore, underestimate the costs by "hundreds of millions of dollars."

Based on the information provided by the Tribe, some direct or spill-over impacts to the Agua Caliente Tribe are likely for developments on uncertain land. Yet, based on review of detailed aerial photos and land ownership maps, the revised critical habitat designation removes approximately 85-90 percent of the uncertain land that was originally designated on the Agua Caliente Reservation. In addition, Executive Order 13175 is likely to reduce the Tribe's potential for incremental impacts due to critical habitat designation. Thus, the revised designation is not likely to impose significant economic impacts on the Tribe.

State and Local Lands, Section 3.3.4

California Department of Parks and Recreation. The *DEA* identifies the activities and land uses within Anza-Borrega Desert State Park that could potentially affect the bighorn sheep. These activities include hiking, camping, wildlife viewing and research. Some commenters mentioned that off-road vehicle use and horseback riding should be included in this list of activities. Currently, these activities do not have a Federal nexus and thus do not trigger section 7 consultations. Therefore, critical habitat designation is not anticipated to impact off-road vehicle use or horseback riding in this area.

Coachella Valley Water District (CVWD). The CVWD owns and maintains facilities throughout the critical habitat designation. The CVWD comments that the designation of critical habitat will cost the CVWD $208 million because the designation will impact all of the CVWD

facilities in the critical habitat region and require substantial project modifications. This estimate likely greatly overstates actual costs for the three reasons explained below.

First, the final designation has removed many of the lands on which CVWD facilities lie. Much of the land encompassing CVWD's facilities in the urbanized areas of the Coachella Valley were removed from critical habitat in the revised critical habitat designation. Close inspection of detailed aerial photographs indicate that approximately 14 of the large water storage tanks that were in uncertain land have been removed from critical habitat by the Service. These facilities are no longer in critical habitat and thus have no impacts due to the designation of critical habitat.

Second, some of these facilities are within the boundary of essential habitat for the bighorn sheep, and therefore only some of the facilities are within the uncertain land of the proposed critical habitat designation. The *DEA* assumes that any consultations, project modifications, or other impacts associated with the bighorn sheep regarding activities on essential habitat will be attributable to the listing of the species and not the designation of critical habitat. Therefore, the CVWD's estimate of economic impacts is likely to be an overstatement because it appears to include listing effects.[4]

Finally, the CVWD likely overestimates the magnitude of project modifications required as a result of the critical habitat designation. There are approximately six CVWD water storage tanks that are partially or completely within the uncertain land of the revised critical habitat designation. A portion of the $208 million estimate of economic impact by the CVWD is based on the assumption that the Service would require the CVWD to relocate current and proposed elevated water storage tanks from sites in the mountains and alluvial fan areas to the desert floor.[5] The Service maintains that this is not a likely modification it would require in reference to CVWD facilities.[6] Instead, the Service states that it is more likely to require that the CVWD conduct disruptive construction and maintenance in the months when bighorn sheep lambing does not occur. These types of project modifications are likely to cause impacts through delays to certain projects. The economic impacts of these project delays are likely to fall within the average range of historically observed impacts of $5,000 to $80,000 (see paragraph 91 of the *DEA*).

Therefore, for the reasons mentioned above, the CVWD's estimate of incremental economic impacts of the designation of critical habitat is likely to be overstated. Due to the small number of facilities in the uncertain land of the revised critical habitat designation, the CVWD has a

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[4]The magnitude of the listing effects included in this cost estimate is not determinable at this time because the commenter did not provide estimated impact by facility or by location. Requests for this information were not answered at the time of the publishing of this Addendum.

[5]Personal communication with Biologist, CVWD on September 13, 2000.

[6]Personal communication, Biologist, Carlsbad Field Office, U.S. Fish and Wildlife Service, on December 7, 2000.

low/moderate potential for incremental impacts. The cost implications of this revised potential for impacts is addressed in the total economic costs section below.

The CVWD comment also offers new information on the installation of Reservoir 6725 in 1997. While the *DEA* states that the conference between the CVWD and the Service regarding this installation did not result in any significant project modifications, the CVWD contends that the consultation applied seasonal restrictions on construction and caused additional project costs due to the project delay. Although these impacts occurred prior to the designation of critical habitat, they are an important aspect of the consultation history of the CVWD, and thus help to inform the likelihood of incremental project modifications and impacts associated with the designation of critical habitat.

Private Lands, Section 3.3.5

The *DEA* details the economic impacts of the designation of critical habitat on privately held lands. The revised critical habitat designation removes many of the privately held areas of uncertain land where the *DEA* assumed incremental impacts would occur. This will likely decrease the potential of the number of incremental impacts associated with the designation of critical habitat on private land. However, a commenter mentions that one project, a planned expansion of a private railroad project in the uncertain lands in the northwest of the critical habitat designation, is likely to remain in the uncertain land. Exhibit 1 reflects this new information.

Exhibit 1

REVISED SUMMARY OF POTENTIAL CONSULTATIONS AND IMPACTS WITHIN CRITICAL HABITAT FOR THE PENINSULAR BIGHORN SHEEP

Type of Land Owner or Manager	Land Owner or Manager	Current or Future Activities that May Require Consultation	Federal Nexus	Potential for New or Reinitiated Consultations or Other Impacts Attributable to Critical Habitat*	
				DEA	Revised
Federal	Bureau of Land Management	Recreational trail management	Federal land ownership	Low	Low
		Land use permits	Federal land ownership	Low	Low
		Research activities	Federal land ownership	Low	Low
		Management of grazing allotments	Federal land ownership	Low	Low
	United States Forest Service	Management of grazing allotments	Federal land ownership	Low	Low
		Recreational trail management	Federal land ownership	Low	Low
		Research activities	Federal land ownership	Low	Low
	Department of Transportation	Maintenance of Interstate 8	Federal land ownership/easement	Low	Low
Trust	All Tribes	Sale/lease of Indian-owned or Allottee land	Bureau of Indian Affairs oversight	NA	Low/moderate
	Morongo Tribe	Access roads or windmill leases	Bureau of Indian Affairs oversight	NA	Low/moderate
	Agua Caliente Tribe	Development on Indian owned land	Section 404 permit, Bureau of Indian Affairs oversight	NA	Low
		Recreational trail maintenance	Bureau of Indian Affairs oversight	Low	Low
		Management of Indian Canyons	Bureau of Indian Affairs oversight	Low	Low
		Habitat management	Bureau of Indian Affairs oversight	Low	Low
	Torres Martinez Tribe	Habitat management	Bureau of Indian Affairs oversight	Low	Low
		Natural resource development	Bureau of Indian Affairs oversight	NA	Low/moderate

Exhibit 1

REVISED SUMMARY OF POTENTIAL CONSULTATIONS AND IMPACTS WITHIN CRITICAL HABITAT FOR THE PENINSULAR BIGHORN SHEEP

Type of Land Owner or Manager	Land Owner or Manager	Current or Future Activities that May Require Consultation	Federal Nexus	Potential for New or Reinitiated Consultations or Other Impacts Attributable to Critical Habitat*	
				DEA	Revised
State and Local	CA Department of Parks and Recreation	Acquisition of land along highways	Use of Department of Transportation grants	Low	Low
	CA Department of Fish and Game	Research activities	University of California system Federal funding	Low	Low
	CA Department of Transportation	Road maintenance	Use of Department of Transportation funding	Low	Low
	Coachella Valley Water District	Delivery of irrigation and domestic waters	Section 404 permit	Low	Low
		Construction and maintenance of water works	Located on BLM lands	Moderate	Low/moderate
	Riverside County Regional Parks	Recreation activities	Use of Bureau of Reclamation water	Low	Low
Private	Private landowners	Residential and commercial development	Section 404 permit	Moderate	Low/moderate
		Railroad operation	Department of Transportation licensing	Low	Low/moderate

Sources: Information in table based on personal communications with US Fish and Wildlife Field Biologist, Carlsbad, CA Office, August-December 2000, and other stakeholders (see footnotes).
* Note: Any potential new or reinitiated consultation or other impact attributable to critical habitat presumes a pre-existing Federal nexus as identified in the preceding column.

TOTAL ECONOMIC COST

The *DEA* provides estimates of the number of each type of economic impact (i.e., informational conversations, habitat evaluations, section 7 consultations, project modifications and delays, and CEQA costs) associated with the designation of critical habitat. This estimate is based on the amount and location of uncertain land, the consultation history of the land owners and managers in the region, and the future potential for consultations and impacts. As a result of new information provided during the comment period, new research since the publishing of the *DEA*, and the Service's revised designation of critical habitat, these estimates are revised (see Exhibit 2). These revisions affect the total economic cost of the critical habitat designation.

Informational Conversations. The *DEA* estimates that the proposed critical habitat designation will trigger 50 incremental informational conversations over the next ten years. This estimate is based on the assumption that many of the incremental informational conversations would be initiated by the land owners in the urbanized areas of the Coachella Valley within the proposed designation of critical habitat. The revised critical habitat designation excludes 29,900 acres, or approximately 85 to 90 percent, of this uncertain land in the Coachella Valley. This change in the amount of uncertain land greatly reduces the number of impacted land owners and thus reduces the number of potential conversations. A conservative revised estimate is that 50 percent of the conversations assumed in the *DEA* will not occur. Thus, the revised estimate of the number of incremental informational conversations is 25, as reflected in Exhibit 2.

Habitat Evaluation. The *DEA* states that fewer than half of the incremental conversations will result in a habitat evaluation. However, because a large portion of the urbanized area was removed from critical habitat, this estimate is adjusted downward in this Addendum. Absent the urban sites, informational conversations are more likely to be in reference to sites that are closer to essential habitat. Therefore, it will be more difficult for the Service to confirm the presence or lack of primary constituent elements on the site, making it more likely that the Service will require a habitat evaluation. Thus, a revised estimate is that most (20 out of 25) of the informational conversations are likely to require a habitat evaluation.

The *DEA* estimates that the cost of a habitat evaluation is likely to range from $1,500 to $12,000 depending on the size of the land parcel. One comment suggested that these evaluations cost $5,000 per case. This adds support to the estimates made in the *DEA* because it falls within the estimated range of impacts associated with a habitat evaluation.

Consultations. The *DEA* estimates that approximately ten consultations will occur on uncertain land. As shown in Exhibit 1, the estimated potential for incremental section 7 consultations and other impacts for the Tribes and the private railroad owners has been increased due to new information about potential activities and nexuses provided by the public comments. The estimated potential for incremental section 7 consultations and other impacts for the CVWD and the private developers has been decreased because of the reduction in size of the critical habitat designation. It appears that the effects of these revisions will tend to cancel each other out and thus the estimate of the total number of incremental consultations is unchanged from the *DEA*.

Project Modifications. As mentioned above, several commenters stated that the range of costs associated with project modifications in the *DEA* was too low. These comments suggest that high impact project modifications are likely to affect projects near the urbanized areas of the Coachella Valley. Since most of the uncertain land was removed in these areas in the revised critical habitat designation, the potential for these costly project modifications associated with critical habitat is low. This analysis estimates that as a result of the revised critical habitat designation, up to two of the estimated incremental project modifications are likely to have large economic impacts.

Additional research since the publication of the *DEA* shows that the modifications, mitigation

fees, land purchases, fencing requirements, etc., associated with a project modification could cause economic impacts ranging from approximately $400,000 to $1 million.[7] In addition, several commenters mention that if a project modification results in a reduction in the number of hotel rooms or housing units, the municipality in which the modification occurs has the potential to lose 1) Transient Occupancy Taxes (TOT); 2) sales taxes; 3) property taxes; and/or 4) tax increment in Redevelopment Areas. Taking these costs into consideration, the total cost of a high impact project modification could range from $500,000 to $1.3 million.

The estimations of the economic cost of a high impact project modification above are based on historical data about modifications to projects that lie completely within the essential habitat area and were triggered by the listing of the bighorn sheep. Economic costs incremental to the designation of critical habitat are assumed to only occur on the uncertain land outside of essential habitat. Due to the revisions made in the critical habitat designation by the Service, the amount of uncertain land in the urbanized areas of the Coachella Valley is greatly reduced. The revised uncertain land is a band of land along the toe slope of the mountains up to 100 meters in width. Thus, the amount of uncertain land on any particular project site is likely to be relatively small and only affect a portion of the project. Therefore, the modifications attributable to critical habitat on these areas are not likely to be as extensive as the modifications that were required due to the listing for projects entirely within essential habitat. This analysis estimates that the economic cost of a high impact project modification attributable to the designation of critical habitat is approximately half of the historical costs estimated above, or $250,000 to $650,000. These estimates are reflected in Exhibit 2.

CEQA Impacts. As explained in the *DEA*, the designation of critical habitat may trigger some incremental costs associated with the CEQA regulations. The *DEA* suggests that each project on uncertain land that prompts an informational conversation will also prompt a CEQA conversation and that each incremental consultation on uncertain land will also require the preparation of an incremental environmental impact report (EIR). The Service now believes that this may understate the economic impacts associated with the CEQA regulations, and that more projects may require an EIR due to the designation of critical habitat. This analysis assumes that each project on uncertain land that prompts an informational conversation will require the preparation of an EIR. With the revised estimates of 25 informational conversations, the revised designation of critical habitat will likely cause 25 CEQA conversations and 25 EIRs.

The *DEA* estimates that the costs associated with CEQA impacts include the cost of the time spent during conversations regarding CEQA issues (ranging from $75 to $260 per conversation) and the costs of preparing an Environmental Impact Report (EIR) (approximately $50,000 per EIR). Several comments suggested that the estimate of the cost of an EIR is too low because it is based on 1990 regulations that have recently changed, and because it does not include mitigation costs. One commenter estimates that a reasonable cost for an EIR is $100,000 based on the commenter's

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[7]Lucas Velush, "Agencies need to learn to say no, bighorn advocates say," *The Desert Sun,* October 15, 2000.

experience participating in EIRs, and another commenter estimates the cost could reach $200,000. Taking this information into account, the revised costs of an average EIR are likely range from $50,000 to $200,000. Exhibit 2 reflects these changes.

Time Frame. As described above, the *DEA* estimates the number of each type of potential impact over the next ten years. Several commenters wondered why ten years was chosen as a time limit for the number of potential consultations. A ten year time limit was chosen because estimations of impacts beyond ten years become too speculative for several reasons, including the potential that the status of the bighorn sheep could change and that land uses and development pressures could dramatically shift.

Revised Total Economic Impact. The revised estimates described above affect the total estimated economic cost which will likely be incremental to the revised critical habitat designation. Based on the assumptions and estimations presented in the *DEA* and in this Addendum, it appears that the total economic cost of the final critical habitat designation for the bighorn sheep is likely to fall well under $10 million. Values for the *DEA* and revised cost estimates are provided in Exhibit 2.

Exhibit 2

TOTAL ESTIMATED ECONOMIC COST INCREMENTAL TO THE PROPOSED CRITICAL HABITAT DESIGNATION

Low Estimate

Impact	***DEA* Estimates**			**Revised Estimate**		
	Impacts	Cost per Case	Total Cost	Impacts	Cost per Case	Total Cost
Informational conversation	50	$75	$3,750	25	$75	$1,875
Habitat evaluation	20	$1,500	$30,000	20	$1,500	$30,000
Second evaluation	5	$1,500	$7,500	5	$1,500	$7,500
Consultation	10	$1,000	$10,000	10	$1,000	$10,000
Project modification	5	$5,000	$25,000	5	$5,000	$25,000
-High impact	NA	NA	NA	0	$250,000	$0
Project delay	5	$0	$0	5	$0	$0
CEQA conversation	40	$75	$3,000	25	$75	$1,875
CEQA EIR	10	$50,000	$500,000	25	$50,000	$1,250,000
Total			**$579,250**			**$1,326,250**

High Estimate

Impact	***DEA* Estimates**			**Revised Estimate**		
	Impacts	Cost per Case	Total Cost	Impacts	Cost per Case	Total Cost
Informational conversation	50	$260	$13,000	25	$260	$6,500
Habitat evaluation	20	$12,000	$240,000	20	$12,000	$240,000
Second evaluation	5	$12,000	$60,000	5	$12,000	$60,000
Consultation	10	$10,000	$100,000	10	$10,000	$100,000
Project modification	5	$80,000	$400,000	3	$80,000	$240,000
-High impact	NA	NA	NA	2	$650,000	$1,300,000
Project delay	5	$100,000	$500,000	5	$100,000	$500,000
CEQA conversation	40	$260	$10,400	25	$260	$6,500
CEQA EIR	10	$50,000	$500,000	25	$200,000	$5,000,000
Totals			**$1,823,400**			**$7,453,000**

Benefits, Section 3.3.7

Listing Benefits. The *DEA* identifies all of the benefits of the listing of the species, and then attempts to identify which benefits can be attributed to the designation of critical habitat. However, it is difficult to distinguish the benefits attributable to the critical habitat designation from those attributable to the listing of the species without knowing the likely benefits of each incremental consultation and modifications. The information needed to quantify the incremental benefits of critical habitat designation include (1) the details and location of each incremental consultation, (2) the number of sheep affected by the modification, (3) the change in the probability of each sheep's survival potential due to the modification, and (4) the economic value of each sheep including all of the categories of benefits described in the *DEA*.

Wildlife Viewing Benefit. The *DEA* discusses a benefit of the satisfaction people derive from seeing a bighorn sheep in their natural environment. Several commenters mentioned that this should not be considered a benefit because human sheep interactions generally are harmful for the sheep. The wildlife viewing benefit is only a net benefit if the sheep are not disturbed by the viewing. Non-disruptive viewing can occur from long distances using high powered binoculars. Thus, this benefit should be re-stated as a "non-disruptive wildlife viewing benefit."