

Public Finance Real Estate Economics Regional Economics Land Use Policy

## **REPORT ADDENDUM**

# **ECONOMIC ANALYSIS OF CRITICAL HABITAT** DESIGNATION FOR THE CALIFORNIA GNATCATCHER

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## ADDENDUM TO CALIFORNIA GNATCATCHER DEA

### INTRODUCTION AND BACKGROUND

This addendum supplements the Draft Economic Analysis of Critical Habitat Designation for the California Gnatcatcher (hereafter "Gnatcatcher DEA"). The Gnatcatcher DEA was prepared by Economic & Planning Systems (EPS), under subcontract to Industrial Economics, (IEc), for the U.S. Fish and Wildlife Service and made available to the public in April, 2004. This addendum assesses the potential implications on the key findings of the Gnatcatcher DEA from the following:

- 1. Changes in type of economic impacts reported. In response to a series of recent court rulings, the Service continues to refine the framework for evaluating the economic impacts of critical habitat (i.e., whether to report fully co-extensive costs or costs due solely to the designation of critical habitat). This addendum isolates costs reported in the Gnatcatcher DEA resulting solely from the critical habitat designation consistent with the Service's current framework.
- 2. **Changes in legal parameters**. A number of court rulings issued since the completion of the Gnatcatcher DEA may affect the type and location of habitat conservation activities undertaken as a result of designation. This addendum considers the implications of these court rulings on the Gnatcatcher DEA.
- 3. Changes in baseline regulations. A number of baseline regulations affecting the Gnatcatcher have been approved or modified since completion of the DEA, such as regional Habitat Conservation Plans (HCPs). This addendum considers the implications of these new or modified regulatory protections on the impact estimates reported in the Gnatcatcher DEA.
- 4. Changes in key economic and demographic data. More up-to-date demographic and market data have become available since the completion of the Gnatcatcher DEA. This addendum considers the implications of the most recent economic data available on the impact estimates reported in the Gnatcatcher DEA.

It is important to note that this addendum does not recreate the analysis provided in the DEA or re-calculate all the results. Rather it is designed to assess the primary implications of the changes described above. In many cases, the discussion is qualitative, indicating whether a factor is likely to significantly increase or decrease the economic costs reported in the DEA. To the extent necessary data are readily available, this analysis estimates the relative magnitude of potential changes in expected economic costs within affected critical habitat units. The discussion relies on the proposed CHD boundaries described in the DEA.

Finally, this Addendum does not address information, data or issues raised in the public comments to the Gnatcatcher DEA. These issues are addressed in the Response to Comments to the DEA.

### SUMMARY OF FINDINGS

**Table 1** summarizes the discrete affect of the key factors described above on the economic cost estimates reported in the Gnatcatcher DEA (all costs are in real 2002 dollars so as to be directly comparable to the DEA). As shown, in some cases actual quantitative estimates of the potential change in economic costs are provided whereas in others the expected direction of the impact is indicated. It should be noted that each factor has been evaluated independently or in isolation of the others and thus the estimates cannot be added by category (i.e., across columns). A complete analysis of the cumulative impact of all of these factors described above is outside the scope of this Addendum. A summary of the key finding by category is provided below:

- 1. Changes in type of economic impacts reported: As shown in the third column of Table 1, about 62 percent of the DEA costs, or about \$565 million, are estimated to be attributable to designation only. This is because Federal action agencies already routinely initiate consultations with the Service given the presence of Coastal Sage Scrub (CSS), a primary constituent element of Gnatcatcher habitat that, according to the Service, occupies about 40 percent of the designation. Thus, about 40 percent of the time, the designation is not expected to provide any new information to Federal action agencies beyond what is already provided by the listing.
- 2. Changes in legal parameters: As shown in the fourth and fifth column of Table 1, two court decisions issued since publication of the DEA have the potential to change the economic cost estimates therein. First, the "Pinchot Decision" may significantly reduce opportunity for, and thus increase the cost of, off-site mitigation by restricting acceptable project modifications to critical habitat areas only. The DEA assumed that private developers in Unit 10 would undertake a significant amount of off-site mitigation, which generally occurs at a much lower cost than on-site mitigation. Furthermore, to the extent that the Pinchot Decision results in additional "within critical habitat" conservation above that required by existing HCPs providing baseline protection in other units, additional project modification costs not quantified in the DEA may be incurred. Second, the "Rapanos Decision" may reduce the cost of designation by limiting the scope of "waters of the U.S", the primary federal nexus assumed for private development. However, given the newness of this decision, its implications are difficult to quantify at this time.
- **3.** Changes in baseline regulations: As shown in the sixth column of Table 1, two recently approved HCPs, the Western Riverside County Multi-Species Habitat Conservation and the Southern Orange County HCP/NCCP, may significantly

reduce the DEA cost estimates in Unit 6 and Unit 10 by providing a new layer of baseline protection for the Gnatcatcher. The Western Riverside HCP potentially negates the increased costs in Unit 10 from the "Pinchot Decision".

**4.** Changes in key economic and demographic data: The last two columns of Table 1 summarize the impact of updated population and employment forecasts as well as real estate market data on the DEA cost impacts. As shown, although project modifications to land development represent the largest economic cost category in the DEA (at about 93 percent of the total), revised regional growth forecasts are expected to have a relatively insignificant impact on the DEA costs. However, using more up-to-date real estate market data would increase total DEA costs by about \$75 million, or by about 8 percent. However, this estimate represents a snapshot based on the most current market conditions for which data is available, a period marked by a relatively robust residential real estate market.

## ECONOMIC IMPACTS REPORTED

The current practice of the Service in its economic analysis of proposed critical habitat regulations is to estimate the impacts occurring as a result of baseline regulations and then estimate the impacts that are incremental to that baseline (i.e., impacts resulting solely from the designation of critical habitat). This approach differs from the framework applied in the DEA, which discussed all non-section 7 baseline protections qualitatively and then estimated the costs of all section 7 consultations, regardless of whether the projected impacts result from the listing of the species (i.e., co-extensive impacts) or are attributable solely to the designation, as well as the indirect effects of the regulation. Specifically, consultations with the Service resulting from the listing of the species, or project modifications meant specifically to protect the species as opposed to its habitat, may occur even in the absence of CH. In other words, the Gnatcatcher DEA does not disaggregate between costs attributable to the listing from those attributable to solely to CH, as described in Chapter II.

"In an effort to ensure that this economic analysis complies with the instructions of the 10<sup>th</sup> Circuit as well as to ensure that no costs of the proposed designation are omitted, the potential effects associated with all section 7 impacts in or near proposed CH are fully considered. In doing so, the analysis ensures that any critical habitat impacts that are co-extensive with the listing of the species are not overlooked. As a result, this analysis likely overstates the regulatory effects under section 7 attributable to the proposed designation of critical habitat."

<sup>&</sup>lt;sup>1</sup> See page 38 of the Gnatcatcher DEA.

Table 1
Summary of Potential Changes in DEA Economic Impact Estimates (in Real 2002\$s)'
Addendum to Gnatcatcher DEA; EPS #17078

Critical		Type of Economic Impacts	Impact from Ch	•	Impact From	Impact from Econom	•
Habitat Unit	DEA Cost Estimate <sup>1</sup>	DEA Costs Due To CHD Only	Pinchot Decision <sup>2</sup>	Rapanos Decision	Change in Baseline (i.e., new HCPs)*	Population / Employment Projections	Up-Dated Market Data
Unit 1	\$4,014,410	\$2,941,000	⇔ /û	Û	⇔	⇔	\$57,000
Unit 2	\$3,533,136	\$2,586,000	⇔ /û	Û	⇔	$\Leftrightarrow$	\$51,000
Unit 3	\$11,009,233	\$8,196,000	⇔ /û	Û	$\Leftrightarrow$	$\Leftrightarrow$	\$172,000
Unit 4	\$2,719,057	\$1,606,000	⇔ /û	Û	$\Leftrightarrow$	$\Leftrightarrow$	\$0
Unit 5	\$13,806,983	\$10,655,000	⇔ /û	Û	$\Leftrightarrow$	$\Leftrightarrow$	\$256,000
Unit 6	\$89,068,904	\$53,777,000	⇔ /û	Û	(\$80,100,000)	$\Leftrightarrow$	\$7,744,000
Unit 7	\$5,306,404	\$3,270,000	⇔ /û	Û	$\Leftrightarrow$	$\Leftrightarrow$	\$654,000
Unit 8	\$449,115	\$265,000	⇔ /û	Û	$\Leftrightarrow$	$\Leftrightarrow$	\$0
Unit 9	\$42,671,006	\$26,900,000	⇔ /11	Û	$\Leftrightarrow$	⇔	\$3,355,000
Unit 10	\$459,907,538	\$280,073,000	\$376,000,000	Û	(\$413,900,000)	$\Leftrightarrow$	\$41,834,000
Unit 11	\$93,364,387	\$56,165,000	⇔ /û	Û	$\Leftrightarrow$	$\Leftrightarrow$	\$9,230,000
Unit 12	\$4,029,835	\$2,507,000	⇔ /11	Û	$\Leftrightarrow$	$\Leftrightarrow$	\$117,000
Unit 13	\$185,457,233	\$115,576,000	⇔ /11	Û	$\Leftrightarrow$	$\Leftrightarrow$	\$11,810,000
Totals	\$915,337,243	\$564,517,000	Û	Û		⇔	\$75,280,000

<sup>\*</sup> Positive numbers indicate the potential increase in economic costs from those reported in the Gnatcatcher DEA. Negative numbers indicate the opposite. Columns are not additive.

<sup>⇔</sup> indicates factor is estimated to have a negligible impact on the economic impacts reported in Gnatcatcher DEA.

<sup>1</sup> indicates factor is estimated to reduce the economic impacts reported in Gnatcatcher DEA by an unknown amount.

indicates factor is estimated to increase the economic impacts reported in Gnatcatcher DEA by an unknown amount.

<sup>(1)</sup> For detailed summary of economic cost estimates in DEA see Table A-1.

<sup>(2)</sup> Dollar estimates assume that project modifications included in HCPs are equivalent to those associated with CHD. If this is not the case the Pinchot decision will likely result in additional costs.

In accordance with the new guidance from the Service, this section describes those economic costs estimated in the Gnatcatcher DEA that are primarily attributable to CH rather than the listing per se. Two general categories have been identified, direct consultation costs and indirect costs, as described below.

#### DIRECT CONSULTATION COSTS

Upon the listing of a species, section 7(a)(2) of the Act requires Federal agencies to consult with the Service in order to ensure that activities they fund, authorize, permit, or carry out are not likely to jeopardize the continued existence of the species. Thus, if a project or land use activity has a Federal nexus, action agencies must initiate consultations with the Service if they suspect the proposed actions may affect a listed species, even if critical habitat has not been designated. Although the presence of a Gnatcatcher can be difficult to determine given its mobile nature, Coastal CSS is a primary constituent element for Gnatcatcher critical habitat and is easily recognizable.

According to the Service and other Federal and State sources, CSS is widely recognized as a potential marker species for the potential presence of Gnatcatcher. Indeed, the Gnatcatcher DEA found that, in many areas within CHD, CSS mitigation resulting from the California Environmental Quality Act (CEQA) review process provides pre-existing protection for Gnatcatcher habitat. Specifically, the DEA assumes that CEQA serves as a baseline regulation in San Diego and Orange County as well as parts of Los Angeles County. In addition, according to the Service, Federal Agencies active in Southern California routinely consult with the Service for projects that occur in areas with CSS.<sup>2</sup> In other words, critical habitat does not provide any new information about the potential presence of the species in areas with CSS because CSS would likely already trigger a consultation and regulatory protection under the listing. According to data provided by the Service, about 41 percent of the Gnatcatcher critical habitat contains CSS.<sup>3</sup>

Given the above, this Addendum assumes that the presence of CSS in an estimated 41 percent of Gnatcatcher CH means that consultation costs in these areas should be attributable to the listing of the species rather than to the designation. Thus, in approximately 59 percent of Gnatcatcher critical habitat lacking CSS, the designation may provide new information to the action agencies and the corresponding costs would be attributable solely to designation. In addition, for any section 7 administrative or project modification costs estimated in the DEA for projects occurring in CSS, the portion of the administrative costs associated with addressing the adverse modification

<sup>&</sup>lt;sup>2</sup> Based on discussions with Service staff.

<sup>&</sup>lt;sup>3</sup> Estimate based on land coverage data provided by the Service Carlsbad Office.

<sup>&</sup>lt;sup>4</sup> The issue of whether CSS is in fact ubiquitous throughout CH was raised in public comment with respect to the CEQA baseline (in certain counties CEQA was considered a baseline regulation because it generally required mitigation for CSS habitat). The commenter stated that CEQA should not be considered a baseline regulation in CH areas where CSS is not present. This issue is addressed further in the Response to Comments.

standard results solely from CHD. Finally, this Addendum assumes that re-initiation of past consultations to address the adverse modification standard are attributable solely to CHD. These costs were discussed qualitatively in the DEA.

Note that this approach assumes that project modifications required as a result of the jeopardy standard are identical to project modifications resulting from the adverse modification standard. As we discuss later in this Addendum, these assumptions may no longer be valid in light of the recent Gifford-Pinchot court ruling.

#### **INDIRECT COSTS**

The designation may, under certain circumstances, affect actions that do not have a Federal nexus and thus are not subject to the provisions of section 7 under the Act. These effects often do not stem directly from the listing but indirectly from designation and thus their cost should be attributed as such. The Gnatcatcher DEA quantifies the economic costs associated with several types of such indirect effects as described further below.

#### Creation of HCPs

In cases in which development of one or more HCPs can be documented as being precipitated by CHD (i.e., to avoid designation or to reduce the costs of the designation), the costs of development of the HCP and the added costs of management imposed by the HCP should be attributable solely to the designation rather than the listing. The Gnatcatcher DEA discussed this possibility qualitatively but did not quantify the economic impact, if any.

#### State and Local Laws

As noted in the DEA, under certain circumstances, CHD may provide new information to a community about the sensitive ecological nature of a geographic region, potentially triggering additional economic impacts under other State or local laws. For example, CHD can have an indirect effect on the requirements of the CEQA. In some cases, applicants who were "categorically exempt" from preparing an Environmental Impact Report under CEQA may no longer be exempt once critical habitat is designated. In cases where the designation triggers the CEQA significance test or results in a reduction of categorically exempt activities, associated costs are considered to be an indirect effect and attributable solely to the designation. The economic costs of additional CEQA related impacts are estimated in the DEA.

## Time Delays and Regulatory Uncertainty

Two other types of indirect costs estimated in the DEA include costs resulting from project delays associated with the consultation process or compliance with other regulations or loss in property values caused by regulatory uncertainty and/or public perceptions regarding the effects of critical habitat. Both types of impacts would be attributable solely to the designation.

## **LEGAL ISSUES**

This section discusses the implications of several court decisions issued since publication of the Gnatcatcher DEA on the economic costs described therein.

#### GIFFORD PINCHOT TASK FORCE DECISION

On August 6, 2004, the Ninth Circuit Court of Appeals rendered a decision in the Gifford Pinchot Task Force v. US Fish and Wildlife Service finding that the Service's regulatory definition of "destruction or adverse modification" of critical habitat is contrary to law. Subsequent to this decision, the Acting Director of the Service released a memorandum on December 9, 2004 providing interim guidance for adverse modification determinations. This guidance has implications on the type and location of habitat conservation activities undertaken as a result of designation and thus on the economic cost estimates provided in the Gnatcatcher DEA.

Of particular importance is the Directors guidance stating that "conservation activities (e.g., management, mitigation, etc.) outside of critical habitat should not be considered when evaluating effects to critical habitat." This guidance is relevant to the economic analysis of the California Gnatcatcher because the DEA assumed that project modifications could include the purchase of credits at off-site mitigation banks, many of which are likely to be located outside critical habitat. If the Service no longer considers these purchases as an appropriate or acceptable means of avoiding "adverse modification," then project applicants (e.g., land owners or developers) will need to undertake alternative, and potentially more costly, habitat conservation measures. These alternative habitat conservation measures will likely include (1) an increase in the number of acres preserved on-site or (2) the purchase from off-site mitigation banks located within critical habitat areas, to the extent such land is available.

In assessing the potential availability of off-site mitigation land within critical habitat, it is important to note that much of the habitat preserve or mitigation bank lands that have historically served this purpose are located in areas proposed for exclusion from critical habitat designation under section 4(b)(2). For example, the proposed Gnatcatcher designation identified approximately 257,540 acres for exclusion including lands covered by approved Habitat Conservation Plans including the San Diego Multiple Species Conservation Program (MSCP) and the Orange County Central–Coastal NCCP/HCP. To the extent that these lands could have accommodated off-site mitigation but will no longer be available for this purpose, the amount of land available for off-site conservation activities is likely to be significantly diminished going forward.

<sup>&</sup>lt;sup>5</sup> See, "Application of the 'Destruction or adverse Modification' Standard under Section 7(a)(2) of the Endangered Species Act." December 9<sup>th</sup> 2004 memorandum from U.S. Department of Interiors, Acting Director. FWS/AES/DCHRS/019634

The Gnatcatcher DEA estimated that approximately 6,000 acres would be satisfied through the purchase of off-site mitigation land, mostly to offset impacts in Unit 10, at an estimated average cost of about \$9,500 per acre, significantly less expensive than onsite set-aside (in Unit 10 the on-site mitigation costs were estimated to range from \$133,000 per acre to \$208,000 per acre depending on land use). However, the DEA did not estimate what percentage of off-site credits would be purchased within the CHD boundaries versus outside CHD boundaries as this distinction was not relevant at the time of publication. From an economic perspective, a reduction in the amount of land available for off-site mitigation is likely to increase the costs of the remaining mitigation bank opportunities located within critical habitat. Indeed, as off-site mitigation land becomes in short supply relative to demand, the price of this land may ultimately be bid up until it approaches the cost associated with on-site mitigation.

**Table 2** summarizes the potential in economic implications assuming all Gnatcatcher habitat set-aside conservation activities occur at costs that approach the estimated onsite set-aside costs. As shown, the DEA estimated the total cost of off-site mitigation to be about \$43 million. If all of these acres were preserved on-site rather than off-site, the cost would be significantly higher. Specifically, the economic costs estimated in the DEA would increase by about \$376 million over the 23 year forecast period.

It is important to note that the above calculation represents a "worse case" estimate of the economic impact of the Pinchot decision because some set-aside conservation is likely to occur at less costly off-site locations within critical habitat. In addition, as described further below, these increased costs are restricted to Unit 10 which is now covered by a recently approved HCP. This HCP provides baseline protection, which would limit the costs attributable to section 7.

#### **Clean Water Act Rulings**

Based on input from the Service and the development community, as well as a review of historical section 7 consultations involving the Gnatcatcher, the DEA assumed that the primary Federal nexus for future private development activities is the issuance of section 404(b) permits by the U.S. Army Corp of Engineers (USACE). Under section 404(b) of the Clean Water Act, the USACE regulates development in jurisdictional "waters of the U.S.," which potentially encapsulate a large amount of future development.

Since publication of the DEA, the U.S. Supreme Court has issued rulings which address jurisdiction over waters of the U.S. under the Clean Water Act. Specifically, the Supreme Court's ruling in June, 2006 in the consolidated cases Rapanos v. United States and Carabell v. United States (generally referred to as "Rapanos"), and subsequent guidelines issues by the USACE and the U.S. Environmental Protection Agency, appear to have scaled back the type of waters that fall under the jurisdiction of these agencies. However, given that the Supreme Court decision in June, 2007 and subsequent guidance issued in June, 2007 are relatively recent, their practical implications are still unclear.

Table 2
Potential Economic Impact of Pinchot Decision on Gnatcatcher DEA
Addendum to Gnatcatcher DEA; EPS #17078

	Change in		Change in Economic Impact <sup>3</sup>					
	On-site Mitigation	On-site	New On-Site	DEA Off-site				
	(acres) <sup>1</sup>	Cost / Acre <sup>2</sup>	Cost Estimate	Cost Estimate	Cost Increase			
			b	a	= a - b			
Unit 10								
Retail	1,266	\$112,908	\$48,000,000					
Residential	1,453	\$208,516	\$102,000,000					
Commercial	<u>5,263</u>	\$152,460	\$269,000,000					
Total	7,982		\$419,000,000	\$43,000,000	\$376,000,000			

<sup>(1)</sup> Based on off-site mitigation acres estimated in the Gnatcatcher DEA.

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<sup>(2)</sup> Based on land value assumptions used in the Gnatcatcher DEA.

<sup>(3)</sup> Represents the net present value of future foregone development assuming a 12% discount rate.

The Gnatcatcher DEA used a GIS analysis to estimate the approximate percentage of land proposed for CH that the USACE would consider "waters of the U.S." The GIS analysis compared the relationship between United States Geological Survey (USGS) "blue line" stream networks and "waters of the U.S.," as identified by the USACE in a detailed survey of the San Jacinto/Santa Margarita drainage basin in Riverside County. A digital elevation model was used to estimate the prevalence of "waters of the U.S." relative to slope classes and "blue line" stream coverage. Results of this "pilot area study" were then applied to slope classes and "blue line" streams throughout the entire proposed CH area. This analysis estimated that approximately 69 percent of land within proposed CH would be subject to a Federal nexus through the USACE.

To the extent that the recent Court rulings described above reduce the amount of proposed CH that would be subject to a Federal nexus, the corresponding economic costs estimates would be reduced accordingly. This is because a large proportion of DEA costs (about 93 percent) result from project modifications to private development projects from consultations triggered by a USACE nexus. Thus, if the USACE jurisdictional authority were reduced from 69 percent to 50 percent, the corresponding economic costs would be reduced by nearly an equivalent amount (the actual economic impact would decrease by slightly less than 19 percent because a small proportion of DEA costs result from public sector habitat conservations activities that are not linked to a USACE nexus). However, given the high degree of uncertainty associated with actual implementation of these Court designs, this Addendum does not quantify their impact.

### **BASELINE REGULATIONS**

As described in the DEA, a number of existing regulations and regulatory regimes require agencies and applicants to consider the impacts of their actions or projects on CSS, and thus Gnatcatcher habitat, and to mitigate those impacts independent of section 7. In other words, in the "world without section 7," project applicants would be required to mitigate CSS impacts under these baseline regulations and costs associated with such mitigation should not be attributed to project modification requirements under section 7. The Gnatcatcher DEA identified the following baseline regulations:

- Section 4(d) Special Rule. The 4(d) Rule, issued in December 1993, exempts from the take prohibitions of section 9 of the Endangered Species Act incidental take of Gnatcatchers resulting from projects in local jurisdictions that have voluntarily enrolled lands in the NCCP program, and that are actively developing NCCPs that address the Gnatcatcher and CSS.
- California Environmental Quality Act. CEQA requires that lead agencies—public
  agencies responsible for project approval—consider the environmental effects of
  proposed private projects that are considered "discretionary" in nature. Among
  other effects, the CEQA statutes specifically require lead agencies to consider
  a project's effects on rare or endangered plant and animal communities. Lead

agencies are not, however, legally required to ensure mitigation. As a result, there are regional variations in the CEQA requirements associated with CSS impact mitigation.

• Habitat Conservation Plans/Integrated Natural Resource Management Plans. Habitat Conservation Plans are conservation plans provided for in section 10(a) of the Act that identifies conservation measures an applicant will undertake to minimize and mitigate the impacts of "take' on a listed species. An HCP must be approved by the Service and applied within a specific geographic area. Integrated Natural Resource Management Plans require the Department of Defense to develop a management plan to provide for the conservation, protection, and management of wildlife resources.

As part of the Addendum, EPS reviewed each of these baseline regulations and determined that the baseline regulatory framework remains, for the most part, unchanged. <sup>6</sup> New regional HCPs that overlap with the critical habitat units have, however, been approved. The implications of these HCPs for the cost estimates associated with critical habitat designation are described below.

The Gnatcatcher DEA considered approved and officially adopted HCPs to be "baseline regulations". This included project-specific HCPs and regional HCPs, including areas within the San Diego Multi-Species Conservation Plan and the Orange County Central/Coastal NCCP/HCP planning areas. Ultimately, however, these HCPs were excluded from the critical habitat designation.

The Gnatcatcher DEA also noted that there were a number of regional HCPs under development, before the proposed designation, that would directly address the Gnatcatcher. It also noted that the completion of one or all of these HCPs would impose an additional layer of land use regulation specifically focused on CSS and Gnatcatcher habitat, which would be applied independent of section 7. In turn, such approved HCPs could therefore significantly reduce the "net" cost burden attributable to section 7.

The four regional HCPs under development described in the Gnatcher DEA included:

- Western Riverside County Multi-Species Habitat Conservation Plan
- Southern Orange County HCP/NCCP
- Northern San Diego County Multiple Habitat Conservation Plan
- North County Subarea Plan to the San Diego MSCP

A review of the current status of these plans in addition to other regional plans that might overlap with critical habitat was conducted. Two regional plans have now been approved:

 $<sup>^{6}</sup>$  This analysis has not evaluated the legal implication of the Gifford Pinchot decision on the implementation of the 4(d) Rule.

- 1. Western Riverside County Multi-Species Habitat Conservation Plan has been completed and approved with the permit issued in June 2004.
- 2. Southern Orange County HCP/NCCP has been completed and approved with the permit issued in January 2007.

Other regional plans, including the Northern San Diego County Multiple Habitat Conservation Plan, the North County Subarea Plan to the San Diego MSCP, the City of Palos Verdes HCP/NCCP, San Bernardino Valley MSHCP, and Matrix/ Northern Orange County HCP/ NCCP, are either still under development or as yet unapproved.

As part of this Addendum, a comparison was conducted between the planning area maps for the two newly approved HCPs with the critical habitat unit boundaries. Unit 10 falls almost completely within the Western Riverside County MSHCP and the large majority of Unit 6 falls within the Southern Orange County HCP/NCCP. As a result, these two HCPs introduce new baseline regulations within these two units.

The Gnatcatcher DEA described the implications for the economic impact analysis of the inclusion of some of the existing HCPs in critical habitat designation. In the case of the San Diego County MSCP, for example, interviews with Service staff and a review of several Biological Opinions in the relevant planning area indicated that the section 7 consultations would not require any additional project modifications over and above what was already required by the MSCP. As a result, the only cost would be the cost of conducting informal consultations. A detailed analysis would be necessary to determine the difference in habitat conservation measures undertaken pursuant to section 7 and those required by the Western Riverside County MSHCP and the Southern Orange County HCP/NCCP. However, a preliminary review of these recently approved HCPs suggests that the habitat conservation protocols are comparable to section 7. As a result, the effects of plan approval on the cost estimates are significant.

In the Gnatcatcher DEA, the estimated costs in units 6 and 10 included project modification costs, administrative costs, delay costs, and uncertainty costs. The presence of the HCPs in these two units would largely remove any delay, uncertainty, and project modification costs associated with critical habitat designation. It would also significantly reduce the administrative costs, a small proportion of the total costs, as the consultations now required would be informal. The reduction in the cost estimate includes:

- Unit 6. The total cost estimate associated with the proposed designation in unit 6 was estimated as \$89.0 million in the Gnatcatcher DEA. Assuming that 90 percent of unit 6 falls with the Southern Orange County HCP/NCCP, a new baseline regulation, the cost estimate reduction is \$80.1 million, with a remaining cost estimate of \$8.9 million.
- Unit 10. The total cost estimate associated with the proposed designation in unit 10 was estimated as \$459.9 million in the Gnatcatcher DEA. Assuming that 95 percent of unit 10 falls with the Western Riverside County MSHCP, a new baseline regulation,

the cost estimate reduction is \$413.9 million, with a remaining cost estimate of \$46 million.

As discussed above, the remaining costs associated with each of these units could be higher if the project modifications associated with section 7 consultation are higher than under HCP requirements. In this case, these additional requirements could be attributed to the critical habitat designation. In addition, to the extent that the Directors guidance associated with the Gifford Pinchot decision requires the Service to conduct additional formal consultations and/or require additional project modifications above-and-beyond the habitat conservation activities required under the HCPs, the cost impacts of the critical habitat designation would increase.

## ECONOMIC AND DEMOGRAPHIC DATA

The section discusses the implications of updated demographic and real estate market data that has become available subsequent to publication of the Gnatcatcher DEA on the economic costs reported therein.

## DEMOGRAPHIC GROWTH PROJECTIONS

The Gnatcatcher DEA relies on demographic growth projections published by the Southern California Association of Governments in 2004 and San Diego Association of Governments in 2003. Since publication of the DEA, both of these entities have published revised and updated projections (released in 2007) which have implications on the calculation of economic costs by unit. Specifically, both the amount and time horizon of population and employment growth projected by these entities has changed since publication of the Gnatcatcher DEA.

As part of this Addendum, EPS compared the new growth projections with those used in the Gnatcatcher. Although the new projections extend out to 2030 rather than 2025, they only provide population and employment projections at the jurisdiction level rather than by Census Tract. As summarized in **Table 3**, these more aggregate-level projections suggest a relatively modest increase in population and employment relative to previous estimates (8 percent and 3 percent, respectively over a 25 year period). In addition, in unincorporated areas residential development actually declines while employment increases by 21 percent relative to previous projections.

In order to estimate the overall impact of these updated demographic projections, EPS allocated growth to various habitat units based on its land area relative to the jurisdiction in which it resides. For example, given that unit 2 is located entirely within the unincorporated area of San Diego County and represents about 0.7 percent of land area, it is allocated 0.7 percent of the growth. The growth estimates and potential land set-aside requirements were then compared with those used in the Gnatcatcher DEA to identify any major discrepancies.

Table 3
Changes in Regional Growth Forecasts (RGF) for 2000-2025
Addendum to Gnatcatcher DEA; EPS #17078

					jected for 2000-202		Chango		
County	Housing 2003 RGF	2007 RGF	Change	<del>=</del> %	Employmer 2003 RGF	2007 RGF	Change #	%	
	2003 NGI	2007 NGI	#	70	2003 KGI	2007 NGI	#	/0	
San Diego Cnty	260,160	306,472	46,312	18%	445,851	442,758	(3,093)	-1%	
Incorporated	196,003	234,871	38,868	20%	379,870	403,019	23,150	6%	
Unincorporated	64,157	71,601	7,444	12%	65,981	39,739	(26,243)	-40%	
Orange Cnty	155,960	161,539	5,579	4%	550,224	517,172	(33,052)	-6%	
Incorporated	105,458	110,266	4,808	5%	475,592	452,085	(23,507)	-5%	
Unincorporated	50,502	51,273	771	2%	74,632	65,087	(9,545)	-13%	
Riverside Cnty	438,689	617,023	178,334	41%	501,489	756,645	255,156	51%	
Incorporated	248,993	396,354	147,361	59%	363,382	569,542	206,160	57%	
Unincorporated	189,696	220,669	30,973	16%	138,107	187,103	48,996	35%	
San Bernardino Cnty	365,013	395,626	30,613	8%	520,424	611,940	91,516	18%	
Incorporated	245,817	330,963	85,146	35%	471,110	520,965	49,855	11%	
Unincorporated	119,196	64,663	(54,533)	-46%	49,314	90,975	41,661	84%	
Los Angeles Cnty	959,537	841,940	(117,597)	-12%	831,559	600,720	(230,839)	-28%	
Incorporated	765,452	679,266	(86,186)	-11%	734,414	477,443	(256,971)	-35%	
Unincorporated	194,085	162,674	(31,411)	-16%	97,145	123,277	26,132	27%	
Ventura Cnty	56,075	92,476	36,401	65%	98,053	120,890	22,837	23%	
Incorporated	47,875	84,680	36,805	77%	94,747	106,906	12,159	13%	
Unincorporated	8,200	7,796	(404)	-5%	3,306	13,984	10,678	323%	
Total	2,235,434	2,415,076	179,642	8%	2,947,600	3,050,125	102,525	3%	
Incorporated	1,609,598	1,836,400	226,802	14%	2,519,115	2,529,960	10,846	0%	
Unincorporated	625,836	578,676	(47,160)	-8%	428,485	520,165	91,680	21%	

<sup>(1)</sup> Original SCAG and SANDAG forecasts compared to the most recently available 2007 Regional Growth Forecast (RGF) updates; 2025 projections calculated by EPS from using SANDAG 2020 and 2030 benchmarks.

Sources: SCAG; SANDAG; Economic & Planning Systems, Inc.

The calculations described above are summarized in **Table 4** (detailed calculations are provided in **Appendix B**). As shown, the overall growth in developed increases slightly relative to the previous projections with demand for residential acres decreasing but employment acres increasing, reflecting the growth patterns in unincorporated areas describe above. Nevertheless, these projections suggest that the total number of acres set-aside as a result of critical habitat will decline by about 130 acres relative to the DEA. However, given that this decline is less than 1 percent of the total set-aside acres projected in the DEA, the economic implications are expected to be minimal.

#### MARKET VALUE ASSUMPTIONS

The Gnatcatcher DEA relies on a variety of real estate market data sources to estimate the likely economic costs associated with foregone land development due to critical habitat. Given the importance of the market value assumptions in calculating the potential economic impacts of designation, this addendum evaluates the implications of updated data on the economic costs estimates of the Gnatcatcher DEA. However, since market values can fluctuate significantly because of business cycle conditions, the information provided herein is intended as a "snapshot" for comparison purposes rather than a reflection of long-term economic relationships.

**Table 5** summarizes the change in raw land value based on the most up-to-date real estate market data available. As shown, residential values have increased substantially in real terms during this period in all counties, as would be expected based on market trends. However, the results for office, industrial, and retail uses are more mixed, with some counties actually experiencing a decline in market values (detailed calculations are provided in **Appendix C**).

The implication of these price trends on the economic impact estimated in the DEA are evaluated in **Table 6** by unit (more detailed calculations are provided in the Appendix). Overall, the utilization of these updated market prices would increase economic impacts estimated in the DEA by about \$75 million, or by about 8 percent of total DEA costs (as shown in **Table 1** and **Table A-1**, total DEA costs were estimated at approximately \$915 million). Specifically, the strong gains in residential values would appear to offset declining or relatively flat performance in other real estate sectors. Again, this estimate represents a snapshot based on the most current market conditions for which data is available, a period marked by a relatively robust residential real estate market.

### OTHER ECONOMIC ASSUMPTIONS

In addition to demographic, employment, and real estate data, the DEA relies on a number of other economic assumptions to estimate the costs of CHD. For example, the habitat restoration costs include assumptions about the cost of inputs such as fencing and salaries for staff biologists. In addition, the administrative costs include assumptions about labor costs for both public and private personnel. These costs may have increased slightly since publication of the DEA due to real increases in wages,

Table 4
Estimated Change in Set-Aside Acres Due to Critical Habitat Based on Updated Growth Projections Addendum to Gnatcatcher DEA; EPS #17078

Critical	Change in Pro	jected Growth <sup>1</sup>	•	d Change in with Federal	Projected Change in	Estimated	d Change in C	SS Mitigation	n Acres <sup>4</sup>	Estimated
Habitat Unit	Residential Acres	Non-Residential Acres		exus <sup>2</sup> Non-Residential Acres	Acres Affected by section 7 <sup>3</sup>	On-Site Set-Aside	Off-Site Preservation	CSS Restoration	Total	DEA CSS Mitigation Acres <sup>1</sup>
Unit 1	259	280	179	193	25	1	0	0	1	4
Unit 2	(2)	(1)	(1)	(0)	(0)	(0)	0	0	(0)	3
Unit 3	3	60	2	42	2	0	0	0	0	12
Unit 4	(1)	(0)	(1)	(0)	(0)	(0)	0	0	(0)	0
Unit 5	(4)	(1)	(3)	(1)	(0)	(0)	0	0	(0)	16
Unit 6	(1)	77	(1)	53	7	5	0	0	5	275
Unit 7	(0)	21	(0)	15	20	13	0	0	13	64
Unit 8	(20)	(17)	(14)	(12)	0	0	0	0	0	0
Unit 9	(130)	(15)	(90)	(10)	(100)	(51)	(0)	(28)	(79)	748
Unit 10	(136)	145	(94)	100	` 7 <sup>°</sup>	4	4	O O	` 7 <sup>'</sup>	15,769
Unit 11	<b>9</b>	23	6	16	22	16	0	2	18	2,301
Unit 12	(48)	(16)	(33)	(11)	(44)	(13)	0	(22)	(36)	110
Unit 13	(128)	3	(89)	2	(87)	(27)	0	(33)	(60)	3,964
Totals	(200)	561	(138)	387	(148)	(52)	4	(82)	(130)	23,266

<sup>(1)</sup> See Table B-1 for derivation of these estimates and DEA Table 12 for original calculations.

<sup>(2)</sup> Assumes a nexus exists within 69% of developable land.

<sup>(3)</sup> Excludes projected growth acres covered by existing baseline such as the 4(d) Rule.

<sup>(4)</sup> Calculated by applying "net" section 7 mitigation ratios to "Projected Change in Acres Affected by section 7".

Table 5
Change in Land Value; 2002 to 2007 (in 2002 \$)
Addendum to Gnatcatcher DEA; EPS #17078

	Raw Land \	/alue /		
	Sq. Ft.	(1)	2002-07 Gr	owth
Land Use by County	2002	2007	Amount	%
Residential				
Los Angeles Cnty	\$8.99	\$11.46	\$2.47	22%
Orange Cnty	\$10.08	\$12.01	\$1.93	16%
Riverside Cnty	\$4.79	\$6.14	\$1.35	22%
San Bernardino Cnty	\$3.81	\$5.28	\$1.47	28%
San Diego Cnty	\$8.98	\$10.09	\$1.12	11%
Ventura Cnty	\$8.07	\$9.84	\$1.77	18%
Office				
Los Angeles Cnty	\$5.41	\$5.34	-\$0.07	-1%
Orange Cnty	\$6.16	\$6.46	\$0.30	5%
Riverside Cnty	\$3.50	\$3.83	\$0.33	9%
San Bernardino Cnty	\$3.50	\$3.83	\$0.33	9%
San Diego Cnty	\$5.45	\$5.89	\$0.44	7%
Ventura Cnty	\$4.90	\$4.70	-\$0.20	-4%
Industrial				
Los Angeles Cnty	\$0.87	\$0.93	\$0.06	7%
Orange Cnty	\$1.18	\$1.23	\$0.05	4%
Riverside Cnty	\$0.82	\$0.73	-\$0.09	-12%
San Bernardino Cnty	\$0.82	\$0.73	-\$0.09	-12%
San Diego Cnty	\$1.30	\$1.41	\$0.11	8%
Ventura Cnty	\$1.37	\$1.34	-\$0.03	-2%
Retail				
Los Angeles Cnty	\$3.46	\$3.47	\$0.02	0%
Orange Cnty	\$3.41	\$3.70	\$0.29	8%
Riverside Cnty	\$2.59	\$2.42	-\$0.17	-7%
San Bernardino Cnty	\$2.59	\$2.42	-\$0.17	-7%
San Diego Cnty	\$2.98	\$3.23	\$0.25	8%
Ventura Cnty	\$3.46	\$3.47	\$0.02	0%

<sup>(1)</sup> See tables B-1 through B-3. All values are expressed in 2002 real dollars.

Sources: Economic & Planning Systems, Inc.

Table 6
Economic Impact on Raw Land Value
Addendum to Gnatcatcher DEA; EPS #17078

C	hange In Raw	Economic						Affected	Acres by	Unit						
Land Use by County	Land Value	Impact (1)	Unit 1	Unit 2	Unit 3	Jnit 4	Unit 5	Unit 6	Unit 7	Unit 8	Unit 9	Unit 10	Unit 11	Unit 12	Unit 13	Tot
Residential																
Los Angeles Cnty	\$2.47	\$12,811,000	0	0	0	0	0	0	0	0	24	0	0	3	327	35
Orange Cnty	\$1.93	\$9,831,000	0	0	0	0	0	275	20	0	54	0.2	0	0	0	34
Riverside Cnty	\$1.35	\$26,788,000	0	0	0	0	0	0	0	0	0.1	1,358	0	0	0	1,35
San Bernardino Cnty	\$1.47	\$12,079,000	0	0	0	0	0	0	0	0	5	251	305	0	0	56
San Diego Cnty	\$1.12	\$534,000	4	3	10	0	16	0	0	0	0	0	0	0	0	3
Ventura Cnty	\$1.77	\$1,260,000	0	0	0	0	0	0	0	0	0	0	0	0	49	4
Office																
Los Angeles Cnty	-\$0.07	-\$471,000	0	0	0	0	0	0	0	0	52	0	0	20	385	45
Orange Cnty	\$0.30	\$623,000	0	0	0	0	0	0	10	0	133	0	0	0	0	14
Riverside Cnty	\$0.33	\$14,975,000	0	0	0	0	0	0	0	0	0	3,069	0	0	0	3,06
San Bernardino Cnty	\$0.33	\$4,407,000	0	0	0	0	0	0	0	0	17	14	872	0	0	90
San Diego Cnty	\$0.44	\$0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Ventura Cnty	-\$0.20	-\$1,027,000	0	0	0	0	0	0	0	0	0	0	0	0	346	34
Industrial																
Los Angeles Cnty	\$0.06	\$242,000	0	0	0	0	0	0	0	0	32	0	0	12	229	27
Orange Cnty	\$0.05	\$89,000	0	0	0	0	0	0	31	0	90	0	0	0	0	12
Riverside Cnty	-\$0.09	-\$2,455,000	0	0	0	0	0	0	0	0	0	1,850	0	0	0	1,85
San Bernardino Cnty	-\$0.09	-\$809,000	0	0	0	0	0	0	0	0	12	16	582	0	0	60
San Diego Cnty	\$0.11	\$1,000	0	0	1	0	0	0	0	0	0	0	0	0	0	
Ventura Cnty	-\$0.03	-\$90,000	0	0	0	0	0	0	0	0	0	0	0	0	201	20
Retail																
Los Angeles Cnty	\$0.02	\$30,000	0	0	0	0	0	0	0	0	14	0	0	5	103	12
Orange Cnty	\$0.29	\$194,000	0	0	0	0	0	0	3	0	42	0.1	0	0	0	4
Riverside Cnty	-\$0.17	-\$2,927,000	0	0	0	0	0	0	0	0	0.1	1.183	0	0	0	1.18
San Bernardino Cnty	-\$0.17	-\$833,000	0	0	0	0	0	0	0	0	7	3	327	0	0	33
San Diego Cnty	\$0.25	\$2,000	0	0	1	0	0	0	0	0	0	0	0	0	0	
Ventura Cnty	\$0.02	\$28,000	0	0	0	0	0	0	0	0	0	0	0	0	117	11
Total																
Acres			4	3	12	0	16	275	64	0	482	7,744	2,086	41	1,757	12,48
Costs		\$75,282,000	\$57.324	\$51,458 \$		φn Φ		7,743,780	CE 4 022	<u></u>	2 2 E 2 7 1 C	41,834,481 \$	,	C117 111 C	,	, -

<sup>(1)</sup> Based on the net present value of foregone future development assuming a 12% discount rate.

Sources: Economic & Planning Systems, Inc.

materials, and supplies. However, given that DEA estimates are expressed in real rather than nominal dollars, and that these inputs represents a relatively minor component of the overall impact, any changes in these assumptions are likely to be relatively minor and not estimated herein.



Public Finance Real Estate Economics Regional Economics Land Use Policy

## APPENDIX A

Table A-1
Estimated Costs of the Proposed Designation by Unit<sup>(1)</sup>
Economic Analysis of Critical Habitat Designation for the California Gnatcatcher; EPS #17078

Proposed CH Unit	Project Modification Costs	Administrative Costs <sup>(2)</sup>	Delay Costs	Uncertainty Costs	Total Cost	Percent
Unit 1	\$2,230,500	\$387,500	\$63,300	\$1,333,000	\$4,014,400	0.4%
Unit 2	\$2,027,500	\$281,500	\$55,500	\$1,168,600	\$3,533,100	0.4%
Unit 3	\$6,329,300	\$532,500	\$188,100	\$3,959,300	\$11,009,200	1.2%
Unit 4	\$2,448,900	\$266,700	\$200	\$3,300	\$2,719,100	0.3%
Unit 5	\$6,978,600	\$709,000	\$277,600	\$5,841,900	\$13,807,000	1.5%
Unit 6	\$85,111,800	\$966,100	\$173,200	\$2,817,900	\$89,068,900	9.7%
Unit 7	\$4,883,800	\$83,200	\$19,600	\$319,700	\$5,306,400	0.6%
Unit 8	\$332,700	\$116,400	\$0	\$0	\$449,100	0.0%
Unit 9	\$38,074,200	\$392,500	\$254,200	\$3,950,100	\$42,671,000	4.7%
Unit 10	\$435,551,700	\$3,069,900	\$2,213,000	\$19,072,900	\$459,907,500	50.2%
Unit 11	\$90,433,200	\$297,300	\$233,000	\$2,400,900	\$93,364,400	10.2%
Unit 12	\$3,649,200	\$64,900	\$44,000	\$271,800	\$4,029,800	0.4%
Unit 13	\$168,719,000	\$1,723,800	\$2,156,400	\$12,858,000	\$185,457,200	20.3%
Total Cost	\$846,770,400	\$8,891,400	\$5,678,200	\$53,997,300	\$915,337,200	100%
Annualized (3)	\$105,461,200	\$1,022,500		(4) \$6,995,900	\$113,479,600	

All dollar values have been rounded to the nearest hundred; summed totals may not add exactly.

<sup>(1)</sup> Assumes discount rates of 12% for private development projects and 7% for public development projects.

<sup>(2)</sup> Average administrative consultation costs (low and high) were allocated among units in proportion to the number of projected growth acres in each unit with a Federal nexus (see Table 8).

<sup>(3)</sup> Represents the annual amount that is equivalent to the Total Costs, when distributed over a 23-year period. Annualized costs for Project Modification and Administrative cost categories were calculated using discount rates of 12 and 7 percent for private and public development projects, respectively. Reported annualized costs for Uncertainty totals are an overestimate of the actual cost because private/public cost categories could not be differentiated in the unit summary format. A 12 percent discount rate was therefore applied universally to this cost category, rather than selectively applying a 7 percent discount rate to the public projects.

<sup>(4)</sup> Delay costs are assumed to occur in Year 1 only, and were therefore removed from the calculation of annualized costs (which assume equal distribution through 2025). The reported annualized value for 'Total Costs' is an estimate of annual costs Years 2-23; annual costs in Year 1 would be equal to this amount plus the full delay costs (approximately \$119 million).



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# Appendix B

Table B-1

Approximate Jurisdictional Distribution of Proposed Critical Habitat Units, and Relative Change in Projected Growth 2005 - 2030 

Addendum to Gnatcatcher DEA; EPS #17078

		% Share	Proportion of	Change in Pro	jected Gre	owth: 2005 t	o 2030 <sup>1</sup>	Change Allo		Approx. Chai	nge in Acres <sup>2</sup>
Critical Habitat	Jurisdiction	of C.H.	Jurisdiction	Household Gr	owth <sup>2</sup>	Employmen	t Growth 2	CH (Pro-r	ata)	Residential	Non-
Unit / County		Land Area	Land Area	#	%	#	%	Households	Jobs		Residential
Critical Habitat Unit 1								3,110	6,998	259.2	279.9
San Diego	Unincorporated	54.1%	0.6%	-2,989	-3.9%	-1,965	-3.0%	-18	-12	-1.5	-0.5
San Diego	Chula Vista	27.9%	21.7%	13,017	76.6%	29,538	130.4%	2,819	6,398	234.9	255.9
San Diego	Santee	16.4%	38.9%	718	15.6%	1,473	29.2%	279	573	23.3	22.9
San Diego	El Cajon	1.7%	4.5%	646	32.3%	862	15.8%	29	39	2.4	1.6
Critical Habitat Unit 2	<u>!</u>							-21	-14	-1.7	-0.6
San Diego	Unincorporated	100.0%	0.7%	-2,989	-3.9%	-1,965	-3.0%	-21	-14	-1.7	-0.6
Critical Habitat Unit 3	<b>;</b>							38	1,511	3.2	60.5
San Diego	Carlsbad	27.2%	35.1%	-1,616	-14.5%	-1,650	-6.6%	-568	-580	-47.3	-23.2
San Diego	Unincorporated	25.9%	0.4%	-2,989	-3.9%	-1,965	-3.0%	-11	-7	-0.9	-0.3
San Diego	Encinitas	12.5%	32.1%	227	10.3%	1,191	26.2%	73	382	6.1	15.3
San Diego	Oceanside	12.1%	14.8%	8	0.1%	9,050	44.5%	1	1,340	0.1	53.6
San Diego	Escondido	9.9%	13.6%	1,295	25.6%	4,032	32.4%	176	549	14.7	22.0
San Diego	San Marcos	9.6%	20.4%	1,451	23.6%	-574	-3.8%	296	-117	24.7	-4.7
San Diego	Vista	2.9%	7.8%	904	24.1%	-715	-3.8%	70	-56	5.9	-2.2

Table B-1

Approximate Jurisdictional Distribution of Proposed Critical Habitat Units, and Relative Change in Projected Growth 2005 - 2030 

Addendum to Gnatcatcher DEA; EPS #17078

		% Share	Proportion of	Change in Pro	jected Gro	owth: 2005 to	o 2030 <sup>1</sup>	Change Allo	cated to	Approx. Cha	nge in Acres <sup>2</sup>
Critical Habitat	Jurisdiction	of C.H.	Jurisdiction	Household Gr	owth <sup>2</sup>	Employment	t Growth 2	CH (Pro-	rata)	Residential	Non-
Unit / County		Land Area	Land Area	#	%	#	%	Households	Jobs		Residential
Critical Habitat Unit 4								-11	-7	-0.9	-0.3
San Diego	Unincorporated	100.0%	0.4%	-2,989	-3.9%	-1,965	-3.0%	-11	-7	-0.9	-0.3
Critical Habitat Unit 5								-45	-30	-3.8	-1.2
San Diego	Unincorporated	100.0%	1.5%	-2,989	-3.9%	-1,965	-3.0%	-45	-30	-3.8	-1.2
Critical Habitat Unit 6								-17	1,935	-1.4	77.4
Orange	Unincorporated	56.2%	13.3%	-15	0.0%	11,511	25.0%	-2	1,526	-0.2	61.1
Orange	Rancho Santa Marg	9.2%	51.1%	-3	-0.5%	263	9.4%	-2	134	-0.1	5.4
Orange	San Juan Capistrano	7.7%	37.0%	-3	-0.3%	141	3.8%	-1	52	-0.1	2.1
Orange	San Clemente	7.0%	26.4%	-5	-0.1%	1,041	11.6%	-1	275	-0.1	11.0
Orange	Mission Viejo	2.5%	9.0%	-7	-0.5%	-505	-25.6%	-1	-46	-0.1	-1.8
San Diego	Unincorporated	17.4%	0.3%	-2,989	-3.9%	-1,965	-3.0%	-10	-7	-0.8	-0.3

Table B-1

Approximate Jurisdictional Distribution of Proposed Critical Habitat Units, and Relative Change in Projected Growth 2005 - 2030 

Addendum to Gnatcatcher DEA; EPS #17078

		% Share	Proportion of	Change in Pro	ojected Gr	owth: 2005	to 2030 <sup>1</sup>	Change Alloc		Approx. Cha	nge in Acres <sup>2</sup>
Critical Habitat	Jurisdiction	of C.H.	Jurisdiction	Household G	rowth <sup>2</sup>	Employmer	nt Growth 2	CH (Pro-r	ata)	Residential	Non-
Unit / County		Land Area	Land Area	#	%	#	%	Households	Jobs		Residentia
Critical Habitat Unit 7	,							-2	536	-0.1	21.5
Orange	Unincorporated	54.9%	1.7%	-15	0.0%	11,511	25.0%	0	195	0.0	7.8
Orange	Anaheim	17.9%	3.2%	-18	-0.3%	3,095	13.8%	-1	99	0.0	4.0
Orange	Laguna Niguel	12.6%	7.7%	-4	-0.4%	-140	-2.7%	0	-11	0.0	-0.4
Orange	Irvine	5.5%	1.0%	-14	-0.1%	9,514	15.7%	0	97	0.0	3.9
Orange	Orange	5.4%	2.0%	-8	-0.3%	1,518	13.1%	0	30	0.0	1.2
Orange	Lake Forest	1.8%	0.9%	-5	-0.8%	13,157	48.3%	0	122	0.0	4.9
Orange	San Juan Capistrand	1.0%	0.6%	-3	-0.3%	141	3.8%	0	1	0.0	0.0
Orange	Yorba Linda	0.4%	0.2%	-4	-0.1%	350	28.6%	0	1	0.0	0.0
Orange	Dana Point	0.2%	0.2%	-3	-0.3%	596	26.5%	0	1	0.0	0.1
Orange	Laguna Beach	0.1%	0.1%	-3	-0.3%	621	36.8%	0	1	0.0	0.0
Riverside	Unincorporated	0.1%	0.0%	-19,209	-10.7%	-15,467	-10.4%	0	0	0.0	0.0
Critical Habitat Unit 8	<b>i</b>							-243	-428	-20.3	-17.1
Los Angeles	Rancho Palos Verde	53.7%	44.0%	-330	-16.4%	-145	-15.1%	-145	-64	-12.1	-2.6
Los Angeles	Rolling Hills	20.0%	72.5%	-22	-19.0%	-12	-17.9%	-16	-9	-1.3	-0.3
Los Angeles	Palos Verdes Estate	12.9%	30.2%	-24	-17.3%	402	1827.3%	-7	121	-0.6	4.9
Los Angeles	Los Angeles	5.7%	0.1%	-44,003	-13.5%	-174,743	-41.4%	-57	-227	-4.8	-9.1
Los Angeles	Rolling Hills Estates	4.1%	12.6%	-14	-12.1%	-132	-23.6%	-2	-17	-0.1	-0.7
Los Angeles	Unincorporated	2.6%	2.9%	-356	-7.6%	-3,293	-67.6%	-10	-94	-0.8	-3.8
Los Angeles	Torrance	0.7%	0.4%	-775	-15.2%	-21,591	-70.9%	-3	-80	-0.2	-3.2
Los Angeles	Lomita	0.4%	2.3%	-115	-13.4%	-2,548	-81.2%	-3	-59	-0.2	-2.4

Table B-1

Approximate Jurisdictional Distribution of Proposed Critical Habitat Units, and Relative Change in Projected Growth 2005 - 2030 

Addendum to Gnatcatcher DEA; EPS #17078

		% Share	Proportion of	Change in Pr	ojected Gr	owth: 2005 t	o 2030 <sup>1</sup>	Change Allo	cated to	Approx. Cha	nge in Acres <sup>2</sup>
Critical Habitat	Jurisdiction	of C.H.	Jurisdiction	Household G	rowth <sup>2</sup>	Employmen	t Growth 2	CH (Pro-	ata)	Residential	Non-
Unit / County		Land Area	Land Area	#	%	#	%	Households	Jobs		Residential
Critical Habitat Unit 9								-1,565	-363	-130.4	-14.5
Los Angeles	Unincorporated	14.0%	6.8%	-17,863	-31.0%	2,511	21.2%	-1,206	169	-100.5	6.8
Los Angeles	Unincorporated	10.1%	3.4%	-5,023	-22.0%	-9,137	-46.5%	-170	-310	-14.2	-12.4
Los Angeles	Whittier	8.6%	20.9%	-477	-13.0%	-3,670	-47.6%	-100	-766	-8.3	-30.6
Los Angeles	La Habra Heights	6.2%	35.4%	-143	-13.6%	63	242.3%	-51	22	-4.2	0.9
Los Angeles	Montebello	2.7%	11.6%	-469	-15.9%	-2,699	-50.3%	-54	-313	-4.5	-12.5
Los Angeles	La Mirada	0.3%	1.5%	-960	-13.1%	-2,369	-61.0%	-14	-35	-1.2	-1.4
Los Angeles	Industry	0.1%	0.4%	0	0.0%	1,264	52.8%	0	5	0.0	0.2
Los Angeles	Pico Rivera	0.1%	0.5%	-408	-13.5%	-4,365	-79.5%	-2	-21	-0.2	-0.8
Los Angeles	Rosemead	0.0%	0.2%	-433	-15.6%	-2,055	-53.0%	-1	-4	-0.1	-0.2
Orange	Unincorporated	21.8%	2.6%	-15	0.0%	11,511	25.0%	0	303	0.0	12.1
Orange	Yorba Linda	18.8%	33.3%	-4	-0.1%	350	28.6%	-1	117	-0.1	4.7
Orange	Fullerton	4.3%	6.8%	-9	-0.2%	3,837	53.0%	-1	259	-0.1	10.4
Orange	Brea	3.1%	9.9%	-3	-0.1%	-368	-4.4%	0	-37	0.0	-1.5
Orange	La Habra	1.0%	4.8%	-4	-1.2%	249	11.5%	0	12	0.0	0.5
San Bernardino	Chino Hills	8.5%	6.7%	529	9.2%	3,504	151.8%	35	234	2.9	9.3
San Bernardino	Unincorporated	0.2%	0.0%	3,946	6.8%	16,223	38.7%	0	0	0.0	0.0

Table B-1

Approximate Jurisdictional Distribution of Proposed Critical Habitat Units, and Relative Change in Projected Growth 2005 - 2030 

Addendum to Gnatcatcher DEA; EPS #17078

		% Share	Proportion of	Change in Pr	ojected Gr	owth: 2005 t	o 2030 <sup>1</sup>	Change Allo		Approx. Cha	nge in Acres
Critical Habitat	Jurisdiction	of C.H.	Jurisdiction	Household G	rowth <sup>2</sup>	Employmen	t Growth 2	CH (Pro-r	ata)	Residential	Non-
Unit / County		Land Area	Land Area	#	%	#	%	Households	Jobs		Residenti
Critical Habitat Unit 10								-1,632	3,636	-136.0	145.5
Orange	Unincorporated	0.0%	0.0%	-15	0.0%	11,511	25.0%	0	3	0.0	0.1
Riverside	Unincorporated	78.6%	11.9%	-19,209	-10.7%	-15,467	-10.4%	-2,294	-1,847	-191.1	-73.9
Riverside	Lake Elsinore	5.0%	35.8%	108	1.0%	2,663	41.7%	39	954	3.2	38.2
Riverside	Riverside	3.4%	11.7%	841	2.2%	37,771	39.7%	98	4,412	8.2	176.5
Riverside	Murrieta	3.0%	25.2%	248	1.0%	-1,163	-8.2%	62	-293	5.2	-11.7
Riverside	Corona	2.1%	15.1%	-1,214	-9.1%	27,146	98.8%	-183	4,085	-15.2	163.4
Riverside	Perris	1.6%	13.7%	69	0.6%	-4,893	-29.5%	9	-668	0.8	-26.7
Riverside	Temecula	0.7%	6.8%	247	2.3%	-10,662	-25.8%	17	-728	1.4	-29.1
Riverside	Hemet	0.6%	5.7%	351	0.8%	-6,798	-22.4%	20	-385	1.7	-15.4
Riverside	Moreno Valley	0.5%	2.9%	-2,071	-7.1%	-19,323	-39.8%	-59	-553	-4.9	-22.1
Riverside	Canyon Lake	0.5%	30.1%	38	8.4%	17	0.9%	11	5	1.0	0.2
San Bernardino	Fontana	1.3%	10.1%	2,525	9.4%	8,968	40.8%	255	905	21.2	36.2
San Bernardino	Colton	1.3%	22.3%	1,109	9.0%	-10,571	-35.0%	247	-2,354	20.6	-94.2
San Bernardino	Loma Linda	0.8%	29.7%	395	8.4%	266	2.1%	117	79	9.8	3.2
San Bernardino	Unincorporated	0.4%	0.0%	3,946	6.8%	16,223	38.7%	0	2	0.0	0.1
San Bernardino	Grand Terrace	0.3%	22.1%	121	9.4%	75	3.4%	27	17	2.2	0.7
San Bernardino	Chino Hills	0.0%	0.1%	529	9.2%	3,504	151.8%	0	2	0.0	0.1
Critical Habitat Unit 11								108	583	9.0	23.3
San Bernardino	Unincorporated	83.6%	0.1%	3,946	6.8%	16,223	38.7%	4	16	0.3	0.6
San Bernardino	San Bernardino	6.7%	2.7%	52	0.5%	13,143	24.2%	1	348	0.1	13.9
San Bernardino	Rancho Cucamonga	4.9%	3.0%	1,635	9.7%	2,706	7.2%	48	80	4.0	3.2
San Bernardino	Rialto	2.9%	3.0%	775	10.3%	1,005	6.4%	24	31	2.0	1.2
San Bernardino	Fontana	1.9%	1.2%	2,525	9.4%	8,968	40.8%	31	109	2.5	4.3

Table B-1

Approximate Jurisdictional Distribution of Proposed Critical Habitat Units, and Relative Change in Projected Growth 2005 - 2030 

Addendum to Gnatcatcher DEA; EPS #17078

		% Share	Proportion of	Change in Projected Growth: 2005 to 2030 <sup>1</sup>				Change Allo	cated to	Approx. Chai	nge in Acres <sup>2</sup>
Critical Habitat	Jurisdiction	of C.H. Land Area	Jurisdiction Land Area	Household Growth 2		Employment Growth 2		CH (Pro-rata)		Residential	Non-
Unit / County				#	%	#	%	Households	Jobs		Residential
Critical Habitat Unit 1	12							-573	-395	-47.8	-15.8
Los Angeles	San Dimas	53.7%	20.9%	-1,248	-12.4%	627	27.2%	-261	131	-21.7	5.2
Los Angeles	Walnut	17.4%	11.8%	-291	-10.8%	-4,191	-75.0%	-34	-494	-2.9	-19.7
Los Angeles	Unincorporated	13.3%	1.1%	-17,863	-31.0%	2,511	21.2%	-198	28	-16.5	1.1
Los Angeles	West Covina	12.6%	4.7%	-1,317	-12.9%	-684	-13.4%	-62	-32	-5.2	-1.3
Los Angeles	La Verne	3.0%	2.2%	-814	-12.9%	-1,267	-43.0%	-18	-28	-1.5	-1.1
Critical Habitat Unit 1	13							-1,542	66	-128.5	2.6
Los Angeles	Unincorporated	36.9%	2.7%	10,032	15.3%	19,506	68.2%	267	519	22.2	20.8
Los Angeles	Unincorporated	8.9%	51.3%	-1,653	-33.0%	-3,139	-58.0%	-847	-1,609	-70.6	-64.4
Los Angeles	Santa Clarita	7.4%	23.3%	-3,283	-12.1%	14,004	70.8%	-764	3,260	-63.7	130.4
Los Angeles	Los Angeles	2.6%	0.9%	-44,003	-13.5%	-174,743	-41.4%	-392	-1,555	-32.6	-62.2
Ventura	Unincorporated	37.2%	3.6%	182	2.7%	3,949	47.3%	7	143	0.5	5.7
Ventura	Simi Valley	4.3%	16.3%	1,223	10.0%	3,057	17.9%	199	497	16.6	19.9
Ventura	Moorpark	2.7%	33.7%	-32	-1.1%	-3,532	-40.0%	-11	-1,189	-0.9	-47.6
Grand Total										-199.6	561.2

Notes: (1) Represents change in regional growth forecasts by jurisdiction. The SCAG 2007 Draft RTP growth forecast used for this comparison is preliminary (10/09/06), and subject to change until approval of the RTP.

(2) Residential Demand @ 12

Non-Residential Demand @ 25

Sources: SCAG; SANDAG; Economic & Planning Systems, Inc.



Public Finance Real Estate Economics Regional Economics Land Use Policy

## APPENDIX C

Table C-1
Residential Land Value Calculations by County 2007
Addendum to Gnatcatcher DEA; EPS #17078

Measure	Los Angeles	Orange	Riverside	San Bernardino	San Diego	Ventura
Average Home Sales Price (1)	\$622,931	\$685,637	\$398,817	\$347,849	\$557,125	\$628,417
Housing Acreage Distribution (2)						
Single Family, Detached	226,994	69,413	50,822	59,850	75,135	22,714
Single Family, Attached	21,195	10,918	3,989	2,296	8,840	2,683
Multi-Family, 2-4 Units	19,126	5,835	1,832	2,674	5,036	1,011
Multi-Family, 5+ Units	<u>56,430</u>	12,584	<u>4,070</u>	<u>4,173</u>	<u>15,106</u>	<u>1,939</u>
Total	323,744	98,750	60,713	68,994	104,117	28,348
Units / Gross Ac. (Weighted Avg.)[3]	9.93	9.46	8.31	8.20	9.53	8.46
Market Value per Gross Acre	\$6,188,787	\$6,486,850	\$3,314,151	\$2,851,052	\$5,308,189	\$5,315,627
Residual Value per Vacant Gross Ac. (4)	\$618,879	\$648,685	\$331,415	\$285,105	\$530,819	\$531,563
Residual Value per Vacant GSF	\$14.21	\$14.89	\$7.61	\$6.55	\$12.19	\$12.20
Consumer Price Index (2002-2007)	19%	19%	19%	19%	17%	19%
Residual Land Value (2002 \$)	\$11.46	\$12.01	\$6.14	\$5.28	\$10.09	\$9.84

<sup>(1)</sup> From Table B-4

by the following assumed unit-per-acre estimates:

single family detached: 7

multi-family (2-4 units): 15

multi-family (5+ units): 20

Sources: Bureau of Labor Statistics, Economic & Planning Systems, Inc.

<sup>(2)</sup> Calculated by multiplying the number of housing units of each type in 2000 (DOF Table E-5a)

<sup>(3)</sup> Average of unit-per-acre assumptions in footnote (2), weighted by housing acreage distribution.

<sup>(4)</sup> Assumes value of vacant land zoned for development (but otherwise unentitled) is 10% percent of total market value.

Table C-2
Office and Industrial Land Value Calculations by County 2007
Addendum to Gnatcatcher DEA; EPS #17078

Measure	Los Angeles	Orange	Riverside	San Bernardino	San Diego	Ventura
Office Sales Price (\$/Leasable SqFt) (1)	\$236	\$286	\$170	\$170	\$254	\$208
Parcel Price per Net SqFt (2)	\$83	\$100	\$59	\$59	\$89	\$73
Parcel Price per Gross SqFt (3)	\$66	\$80	\$48	\$48	\$71	\$58
Market Value per Gross Acre	\$2,883,239	\$3,488,285	\$2,070,572	\$2,070,572	\$3,095,044	\$2,536,934
Residual Value per Vacant Gross Ac. (4)	\$288,324	\$348,828	\$207,057	\$207,057	\$309,504	\$253,693
Residual Value per Vacant GSF	\$6.62	\$8.01	\$4.75	\$4.75	\$7.11	\$5.82
Consumer Price Index (2002-2007) Residual Land Value (2002 \$)	19% \$5.34	19% \$6.46	19% \$3.83	19% \$3.83	17% \$5.89	19% \$4.70
Industrial Sales Price (\$/Leasable SqFt) (1)	\$57.61	\$76.03	\$45.21	\$45.21	\$85.12	\$83.30
Parcel Price per Net SqFt (5)	\$14.40	\$19.01	\$11.30	\$11.30	\$21.28	\$20.82
Parcel Price per Gross SqFt (3)	\$11.52	\$15.21	\$9.04	\$9.04	\$17.02	\$16.66
Market Value per Gross Acre	\$501,934	\$662,412	\$393,827	\$393,827	\$741,557	\$725,683
Residual Value per Vacant Gross Ac. (4)	\$50,193	\$66,241	\$39,383	\$39,383	\$74,156	\$72,568
Residual Value per Vacant GSF	\$1.15	\$1.52	\$0.90	\$0.90	\$1.70	\$1.67
Consumer Price Index (2002-2007) Residual Land Value (2002 \$)	19% \$0.93	19% \$1.23	19% \$0.73	19% \$0.73	17% \$1.41	19% \$1.34

<sup>(1)</sup> From Table B-5

Source: Bureau of Labor Statistics, Economic & Planning Systems, Inc.

<sup>(2)</sup> Assumes floor area ratio (FAR) of 0.35 for office space.

<sup>(3)</sup> Assumes net-to-gross ratio of 0.80 to account for associated infrastructure (roads, sidewalks, etc.).

<sup>(4)</sup> Assumes value of vacant land zoned for development (but otherwise unentitled) is 10% of total market value.

<sup>(5)</sup> Assumes floor area ratio (FAR) of 0.25 for industrial space.

Table C-3
Retail Land Value Calculations by County 2007
Addendum to Gnatcatcher DEA; EPS #17078

Measure	Los Angeles	Orange	Riverside	San Bernardino	San Diego	Ventura
Sales Price (\$/Leasable SqFt) (1)	\$179	\$191	\$125	\$125	\$162	\$179
Parcel Price per Net SqFt (2)	\$54	\$57	\$38	\$38	\$49	\$54
Parcel Price per Gross SqFt (3)	\$43	\$46	\$30	\$30	\$39	\$43
Market Value per Gross Acre	\$1,875,487	\$1,998,029	\$1,308,510	\$1,308,510	\$1,696,268	\$1,875,487
Residual Value per Vacant Gross Ac. (4)	\$187,549	\$199,803	\$130,851	\$130,851	\$169,627	\$187,549
Residual Value per Vacant GSF	\$4.31	\$4.59	\$3.00	\$3.00	\$3.89	\$4.31
Consumer Price Index (2002-2007) Residual Land Value (2002 \$)	19% \$3.47	19% \$3.70	19% \$2.42	19% \$2.42	17% \$3.23	19% \$3.47

<sup>(1)</sup> From Table C-6

Source: Bureau of Labor Statistics, Economic & Planning Systems, Inc.

<sup>(2)</sup> Assumes floor area ratio (FAR) of 0.3 for office space.

<sup>(3)</sup> Assumes net-to-gross ratio of 0.80 to account for associated infrastructure (roads, sidewalks, etc.).

<sup>(4)</sup> Assumes value of vacant land zoned for development (but otherwise unentitled) is 10% of total market value.

Table C-4 Historical Median Residential Sales Prices in Southern California Counties Addendum to Gnatcatcher DEA; EPS #17078

	Average Median Sales	% Change						
County	2002	2003	2004	2005	2006	1st Quarter 2007	Price (2002-2007)	2002-2007
Los Angeles County	\$261,583	\$316,583	\$394,750	\$467,833	\$507,250	\$532,000	\$413,333	58%
Orange County	\$352,833	\$416,583	\$520,083	\$591,167	\$626,000	\$619,500	\$521,028	48%
Riverside County	\$209,417	\$250,667	\$321,417	\$385,333	\$416,750	\$413,500	\$332,847	59%
San Bernardino County	\$161,000	\$194,417	\$246,500	\$324,250	\$366,083	\$369,250	\$276,917	72%
San Diego County	\$322,000	\$377,000	\$457,167	\$493,833	\$489,500	\$483,000	\$437,083	36%
Ventura County	\$324,417	\$386,583	\$490,750	\$571,917	\$598,833	\$571,750	\$490,708	51%

Sources: Dataquick.com, Economic & Planning Systems, Inc.

Table C-5
Office and Industrial Lease Rates per Square Foot
Addendum to Gnatcatcher DEA; EPS #17078

County	Office Lease Rate p	er Sq. Ft. Quarter 2007	% Change 2002-2007	Industrial Lease	2nd Quarter 2007	% Change 2002-2007
Los Angeles County	\$2.19	\$2.68	22%	\$0.49	\$0.65	33%
Orange County	\$2.10	\$2.73	30%	\$0.58	\$0.75	29%
Inland Empire	\$1.48	\$2.01	36%	\$0.39	\$0.43	10%
San Diego County	\$1.81	\$2.36	30%	\$0.84	\$1.10	31%
Ventura County	\$1.75	\$2.08	19%	\$0.66	\$0.80	21%

Sources: CBRE market view reports 2nd quarter 2002 and 2007, Economic & Planning Systems, Inc.

Table C-6
Retail Lease Rates by County
Addendum to Gnatcatcher DEA; EPS #17078

	Retail Lease Rates (\$.	% Change	
County/ Region	2002	2007	2002-2007
L oo Angoloo	Фаа	<b></b>	250/
Los Angeles San Fernando	\$22 \$24	\$27 \$30	25% 26%
West LA	\$35	n/a	n/a
Downtown	\$27	\$35	28%
South Bay	\$23	\$27	19%
Inland Empire	\$17	\$20	16%
Orange	\$21	\$28	35%
San Diego	\$20	\$26	31%

Source: Marcus and Millichap Retail Research Report, 2Q 2007 and Nov. 2002