FACTORS OF SUCCESS FOR COUNTY AND REGIONAL HABITAT CONSERVATION PLAN CREATION

by

Chelsea L. Baldino
Dr. Lydia Olander and Dr. Christopher Galik, Advisors
Client: Willamette Partnership (Sam Baraso)
April 24, 2015

Masters project submitted in partial fulfillment of the

requirements for the Master of Environmental Management degree in

the Nicholas School of the Environment of

Duke University

EXECUTIVE SUMMARY

Habitat Conservation Plans (HCPs) are a means for private landowners to comply with the Endangered Species Act. Historically, the HCP process has been done on a case-by-case basis, but it has become increasingly common for county and regional governments to create region-wide HCPs that cover development from multiple projects in the entire region. Local governments recognize that these plans can increase economic certainty for residents, increase development, and potentially increase conservation. However, region-wide plans are time and money intensive, so sometimes they fail to be completed.

HCP legal, academic and policy experts, who acted as a focus group for this research, stated that few have studied the "human" side of HCP creation, i.e., HCP process design and management. Such information may be useful to diverse interests, such as conservationists and developers, in counties and regions where a large-scale HCP is possible. Thus, the overarching research question for this project was: *What factors and processes lead to the successful completion of a Habitat Conservation Plan at the regional and county level?*

This report includes five case studies on county or regional HCPs, located in 1) Benton County, OR; 2) Coachella Valley, CA; 3) East Contra Costa County, CA; 4) Pima County, AZ; and 5) Williamson County, TX. Three to four interviews per case with individuals who were knowledgeable about the county or regional government's perspective of the HCP process were the primary sources of information. Each interviewee was asked questions regarding:

1) The initiation process for the plan and who prepared the plan
2) Logistical and administrative support from other organizations and agencies
3) Local and political support
4) Staff capacity at the time of HCP creation
5) Staff opinions at the time of HCP creation
6) How the covered species were determined
7) How the mitigation strategy was determined
8) How the plan creation was funded
9) How plan preparers decided how to fund the plan once it was implemented

Each case study synthesizes the information from the interviewees, and at the end of this report, a cross-case study analysis brings all of the findings together. This analysis showed that some state agencies, such as the California Department of Fish and Wildlife, played a large role in the HCP creation process, while others were less involved. Also, because the length of time for HCP creation varied from approximately 5 to 15 years, the number of staff from the county or region that were necessary to complete these plans varied also. However, for the plans that took only around 5 years, approximately 2 full time staff from the county were needed. Staff opinions regarding the plans, e.g., whether they felt the plans would generate funding for conservation, also varied; most likely staff's sentiments reflected the local community's values. Despite differences between the cases, this analysis illuminated several factors that contributed to successful HCP creation:

- A cooperative relationship between the county or region and the USFWS appears important. The relationship between the local governing body and the US Fish and Wildlife Service (USFWS) office was positive in four out of the five of these successfully completed cases.
- Local and political support, especially early stakeholder engagement, was important in all cases.
- A scientific advisory committee or a consultant was necessary to determine what species to cover in the plan.
- Across all cases, USFWS Section 6 grants were the primary source of funds.
- The most effective way to handle mitigation at this scale was through utilization of the county or region's own reserve lands, but the funding mechanism for this type of mitigation varied.

An additional exploratory analysis provided insight into three important factors leading to HCP failure. The first is delays at the regional FWS level due to miscommunication and tensions with the regional or county staff. The second occurs when HCP preparers make the scope of the HCP too broad. And the third results from poor project management and HCP preparers who are not responsive to USFWS input.

Table of Contents

I. Introduction

Habitat Conservation Plans (HCPs), a means for private landowners to comply with the Endangered Species Act, have the potential to provide conservation in an economically efficient manner, especially when completed at the regional or county level. As Secretary of Interior Sally Jewell stated, "It really does take a village to keep a community sustainable…Habitat conservation plans are a way to get together and say, 'What do we have in this landscape?. Where are the areas where we really have an opportunity to develop, that help keep our communities vibrant and our economy strong? What are the areas that should never be developed?'" (Simons 2014). However, though Habitat Conservation Plans are a valuable tool for achieving these multiple goals, they are therefore also faced with "addressing the conflicts and paradoxes inherent in integrating conservation and economic decision making" (Ostermeier et al. 2000, p. 166).

Conversations with HCP legal, academic and policy experts in the summer and fall of 2014 illuminated that there are many studies on the scientific effectiveness of HCP conservation efforts. However, few have studied the "human" side of HCP creation (Tim Male, personal communication, 9/9/2014); as Ostermeier et al. wrote, "[L]ittle attention has been given to the HCP process design and management, and addressing this deficiency should be rewarding and challenging" (p. 166). Most importantly, many times, county or region-wide HCPs are never completed. When county-wide HCPs fail, developers are forced to seek their own HCPs and bear the process and costs individually. While this may work for larger developers, this is likely cost prohibitive for most others (Sam Baraso, personal communication, 3/13/2015). Also, the resulting patchwork of mitigation efforts from these case-by-case individual HCPs is likely not ideal from a conservation standpoint. Broader, landscape-level, multi-species habitat plans have greater ability to address habitat connectivity and therefore often are of higher ecological value than the habitat lost as a result of development (Callihan et al. 2009, p. iii). Thus, research into what may lead to the successful creation of plans at the county and regional level will be beneficial to individuals with diverse interests in counties and regions where a large-scale HCP is possible.

II. Background

A. Habitat Conservation Plan Overview

In 1973, Congress enacted the Endangered Species Act (herein the ESA or the Act) to protect endangered species by conserving the ecosystems upon which they depend. To achieve this goal, the ESA restricts human activity that affects these species, that is, it prohibits what is called a "take." Section 7 of the ESA addresses federal actions that jeopardize endangered species, while Section 9 bars the take of any endangered species by any person, public or private. Unsurprisingly, with ninety percent of the listed endangered and threatened species habitat on private land, this law is controversial because of the tension it causes between the preservation of a species and the development of the land in an area.

In order to meet the needs of development and compliance with ESA, Congress amended the Act in 1982. Under Section 10(a) of the Act, the US Fish and Wildlife Service (USFWS), as well as the National Marine Fisheries Service, which has jurisdiction over marine species, work proactively with land developers to help them better manage candidate and listed species on their property. Under Section 10(a), landowners can "receive permits to take imperiled species on their lands, provided that such takings were incidental to otherwise lawful activities such as construction or timber harvest" (Watchman, 2001, p. 351). In order to receive this type of permit, a landowner must first prepare a Habitat Conservation Plan (HCP). The plan must specify:

1) The impact which will likely result from such taking;
2) The steps the applicant will take to minimize and mitigate such impacts, and the funding that will be available to implement such steps;
3) The alternative actions to such taking the applicant considered and the reasons why such alternatives are not being utilized; and
4) Such other measures that the Secretary may require as being necessary or appropriate for purposes of the plan (16 U.S.C.§1539(a)).

In order to achieve the 1st component, all HCPs include a list of covered activities and species. That is, they specify for which activities the permit will authorize take and what species are likely to be impacted by these activities. They also specify what area the permit and plan will cover for these activities. To address the second component, HCPs also include specific

biological goals to clarify the purpose and direction of the HCP's conservation program (USFWS Midwest 2015).

The U.S. Fish and Wildlife Service helps guide the landowner developing the HCP, and USFWS has the right to reject any permit applications they do not feel have an adequate HCP (Watchman, 2001, p. 351). To assist the creation of these plans, the USFWS releases recovery plans, and it designates critical habitat for some species. Recovery plans "identify site specific management actions, that, if completed, could lead to a less critical status," while designated critical habitat is "a specific geographic area that contains features essential to the conservation of an endangered or threatened species and that may require special management for protection" (USFWS 2013 *Recovery Plans*, 2015).

Historically, the HCP process has been done on a case-by-case basis, e.g., when a developer decides to start a new housing project on an endangered species' habitat, they have to draft an HCP and apply for a permit from USFWS. But more recently, some county governments have recognized that they can increase economic certainty for residents, increase development, and potentially increase conservation if they create county-wide HCPs that cover development by multiple projects in the entire region. By having the developer sign on to the pre-existing plan, often for a fee that covers some of the costs of creating the plan, the county can quickly approve new actions. Research has shown that these larger-scale HCPs "provide substantial benefits for the business community, providing millions of dollars in savings through reduced uncertainty, time delay, and compliance costs" (Economic & Planning Systems, Inc, 2014, p. 2).

However, these county-wide plans are time and resource intensive, so sometimes they fail to be completed. For example, an independent evaluation of the HCP program found several issues with the HCP development process; for example, the length of time for HCP approval generally exceeds the Service's own suggested timeframe (Callihan et al. 2009, p. ii-iii).

Thus, a county with endangered species has an important decision to make: create a county-wide HCP or leave the permitting process up to the developers themselves. Once a county or region decides to write an HCP, there are several mitigation methods they can choose for their plan:

1) Leaving the mitigation up to the developer and other private landowners who want to be included in the permit.

2) County-sponsored mitigation, which could include a combination of county-sponsored acquisition, protection and enhancement of conservation lands; for example, "acquisition and protection" could mean that the county purchased and then put a conservation easement on the land. Enhancement of land means that the habitat is not suitable for the endangered species, so restoration is necessary. For example, for prairie habitat, enhancement could mean ensuring the site has adequate vegetation, suitable soils, and is located within current or historic prairie habitat. The county could fund its mitigation using taxpayer funds, it could charge a participation fee to those who want inclusion in the plan (i.e. the developers and private landowners), or it could utilize a combination of both.
3) The county could purchase endangered species mitigation credits from a private-party habitat conservation bank, which is an "area of habitat that has been conserved and managed for the conservation of identified natural resource values." (Ruhl, 2005, p. 26).

An additional important consideration is the timing of the mitigation, i.e., before or after development. If the mitigation is completed after development, and it is managed by the county, it is often through an "in-lieu fee" funding mechanism; that is, the developer will sign onto the permit, and depending on the details of the plan and the specific "take" they will commit, the county will charge them a fee for inclusion in the plan. These funds will then go towards the cost of migration. Counties can also certainly use this funding mechanism in cases where a county reserve system for the HCP has already been instituted.

Finally, the county or region needs to decide whether participation in the HCP is mandatory or voluntary for private development in that region. Due to the political climate in an area, it might only be possible for an HCP to be completed if the participation of private developers is voluntary; that is, if they want to sign onto the county or region's incidental take permit, and therefore also participate in the associated HCP, they can, but if they want to engage with the USFWS independently to acquire their own incidental take permit, they can do that also.

To aid in the completion of these plans, the USFWS offers a Cooperative Endangered Species Conservation Fund grant, under Section 6 of the ESA, to states and territories for species

and habitat conservation actions on non-federal lands. To receive these grants, a state or territory must currently have, or enter into, a cooperative agreement with the Secretary of the Interior. (US Fish and Wildlife Service 2013). Additionally, the grants require a 25% match of the estimated project cost (US Fish and Wildlife Service 2014).

B. Federal and State Regulatory Framework

There are several other federal laws that preparers of HCPs may encounter as they prepare the plans; a consultant who has worked for many years in ESA compliance mentioned two laws that are commonly addressed in the course of the HCP creation process: the Bald and Golden Eagle Protection Act and the Magnussen-Stevens Fishery Conservation and Management Act (Anonymous Interviewee 3C, 3/5/2015). Two of the cases in this report also ensured Clean Water Act compliance in their HCPs.

As for state regulations, the consultant was most familiar with California state laws and mentioned that when developing regional HCPs in CA, the most common laws that they encounter include the California Fish and Game Code (Fish and Game Code 1600 specifically), as well as a state wetland law that is included in the Porter-Cologne Water Quality Act (Anonymous Interviewee 3C, 3/5/2015). Similar laws exist in other states, and several of the cases mention that their HCPs meet their individual state's guidelines.

Many states have their own endangered species acts, but most are weaker than the federal law and do not have mechanisms for recovery, consultation, or critical habitat designation (George and Snape 2010, p. 346). For example, the Oregon ESA, which is addressed by Benton County, one of the case studies, is more limited in scope than the federal ESA, applying only to state-owned or leased lands and waters (Kaye et al. 2010, p. 21).

California, on the other hand, does have its own robust endangered species act. In 1991, California created its own habitat conservation planning legislation, which initiated a Natural Community Conservation Planning (NCCP) program that sets conservation standards for the state (Cambacho et al. 2015, p. 6). The California Department of Fish and Wildlife interprets these state standards as more robust than the federal ones (Cambacho et al. 2015, p. 7). The NCCP program requires the prevention of listing of non-listed, but still at risk, species through the protection, restoration and enhancement of species habitat. Most importantly, unlike the federal HCP standard, the NCCP requires actions that help recover a species, as opposed to

merely minimizing and mitigating the impacts of incidental take (Cambacho 2015, p. 7). The NCCP program also requires its own state-level conservation plans, so counties and regions in California often write Habitat Conservation Plans combined with an NCCP plan. The NCCP planning process assists the federal HCP process because its additional level of commitment for recovery of the species (Anonymous Interviewee 3B, 2/23/2015).

III. Objectives

HCP legal, academic and policy experts acted as a focus group for this research in the summer and fall of 2014. They suggested that success of regional and county-level HCPs depends on the length of the process, financial capacity, political will, and the local relationship with the Fish and Wildlife Service. Thus, the overarching research question for this project was to assess whether this was true and determine *What factors and processes lead to the successful completion of a Habitat Conservation Plan at the regional and county level?* More specifically, this study addresses these topics:

1) The initiation process for the plan and who prepared the plan
2) Logistical and administrative support from other organizations and agencies
3) The level of local and political support
4) Staff capacity at the time of HCP creation
5) Staff opinions at the time of HCP creation
6) How the covered species were determined
7) How the mitigation strategy was determined
8) How the plan creation was funded
9) How plan preparers decided how to fund the plan once it was implemented

IV. Methods

Case studies well-suited for these "how" or "why" research questions about contemporary events over which the researcher had no control (Yin 2014, p. 14). Also, case study research utilizes multiple sources of information, specifically interviews and plan documentation, to describe in detail the processes and factor leading to Habitat Conservation

Plans, as opposed to solely conducting a survey. This report includes five case studies from the past ten years. All are successfully completed HCPs at the regional and county level. Figure 1 shows the case studies that were used for project; they are all in the west and southwest, which is not a wide geographic range, however, almost all of the examples of these kinds of HCPs from the past ten years have been from this region. Table 1 shows that the plans do vary in terms of plan area, population of the county or region, common land uses in the area, and the number of species covered by the plan.

Interviews are one of the most important sources of case study information, so it was the primary means of gathering information. For each case study, in order to achieve data triangulation and support findings based on more than one source of evidence, at least three individuals who worked on the HCP were interviewed, and pertinent documents, such as the HCP itself, were analyzed (Yin 2014, p. 121). Table 2 shows the professions of the individuals interviewed for each case study. The interviewees were those with a local government perspective, or those who could speak to the local government's (i.e. county or regional governing body) perspective. Because of the difficulty of accessing interviewees, and because case studies do not aim for representativeness in sampling, the research design was purposive and utilized snowball sampling (O'Leary 2005, p. 94-95). Specifically, interviewees were not random, i.e., those who could be contacted first were interviewed, and the interviewees themselves suggested whom else should be interviewed.

Rea and Parker's *Designing and Conducting Survey Research* was the guidebook for designing survey questions, which can be found in the Appendix. To assist with the write-up and analysis, all of the answers to open-ended questions were transcribed.

A pilot case study is also important for clarifying the research design and survey. Unfortunately, due to time constraints because of the need to adapt to interviewees' busy schedules, there was no pilot case study analysis before interviewing the individuals from the other four case studies. However, after interviewing the first individual, only minor changes in the survey language were needed to better clarify questions. It is likely that all of the conversations with the focus group members helped inform a clear initial survey.

Ideally, a second set of five case studies on counties that did not complete HCPs would have been conducted to directly compare those findings to the factors that lead to successful HCP completion, but due to the time constraint of this research, and also because it was difficult

to find counties that attempted county-wide HCPs and failed, a second set of studies was not completed. However, during the semi-structured interviews, several of the interviewees, primarily those who have worked on many HCPs or who were knowledgeable about several of them, were asked at the end why they feel that HCPs fail. Their responses are provided in the discussion section of this report.

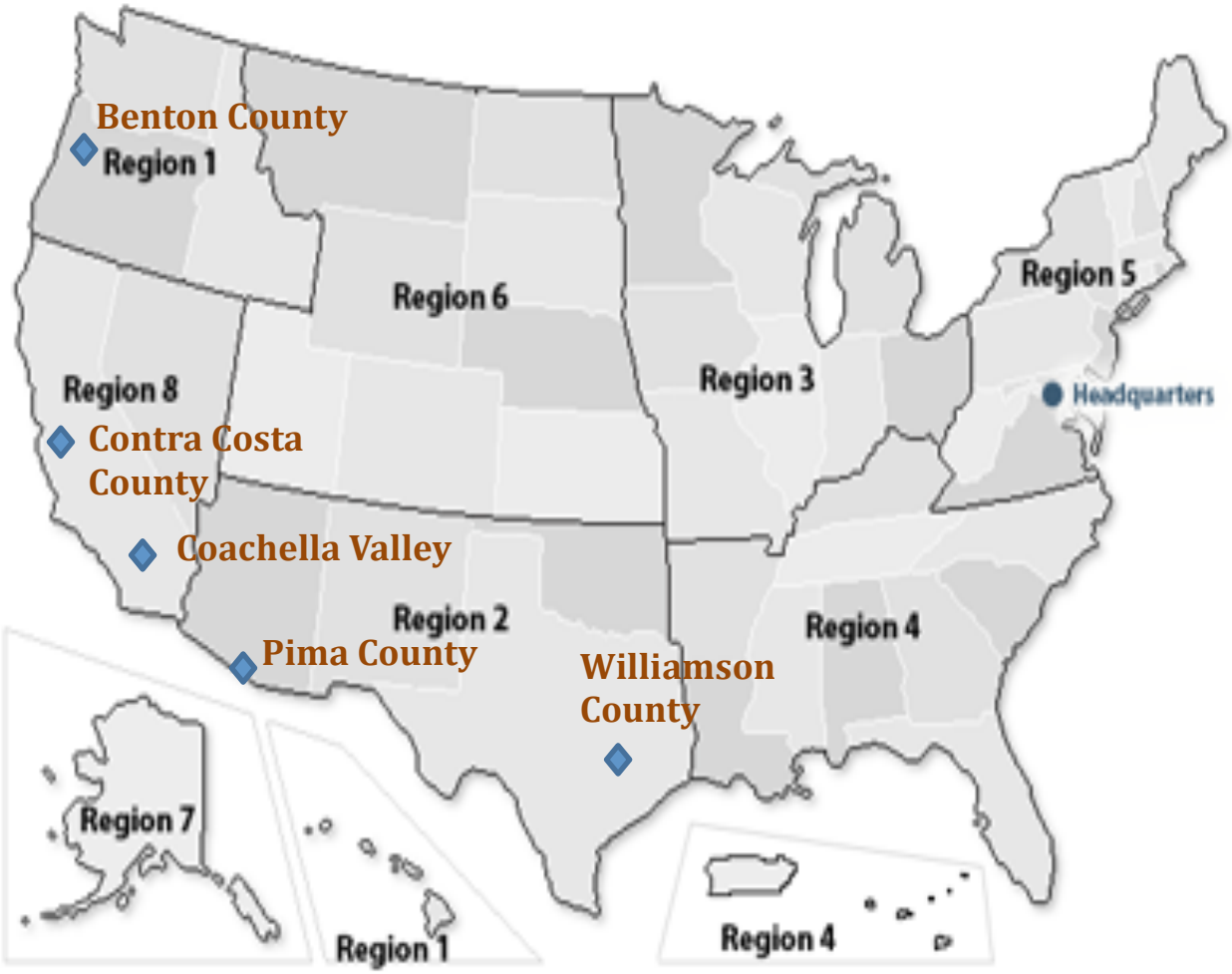

Figure 1: Case study counties shown in their USFWS regions (Source: http://www.fws.gov/Endangered/regions/index.html)

Table 1: Qualifying information regarding county and regional HCP case studies

Region/County	Population	Area (acres)	Primary Land Use	# Species
Benton, OR	85,581	432,640	Forest, Agriculture	7 prairie species: 2 butterflies, 5 plants
Coachella Valley, CA	418,300	1,100,000	16% is made up cities and 84% is unincorporated; 53% of plan area is public and private conservation lands	27 total: 5 plants, 2 insects, 1 fish, 1 amphibian, 3 reptiles, 11 birds, and 4 mammals
East Contra Costa, CA	1,094,205	>435,000	Residential, Commercial, Agriculture, Open Space	28 total: 2 mammals, 4 birds, 4 reptiles, 3 amphibians, 4 invertebrates, and 11 plants
Pima, AZ	996,500	5,879,669	Tribal-Owned, State and Federal Land, Private Property	44 total: 4 plants, 7 mammals, 8 birds, 5 fishes, 2 amphibians, 6 reptiles, and 12 invertebrates (mollusks)
Williamson, TX	422, 649	715,712	83% rural (unincorporated), made up of agriculture, ranches, and homes; Remainder of the land is in incorporated towns and cities.	4 total: 2 karst invertebrates and 2 bird species (but also addresses additional species)

Table 2: Professions of case study interviewees

County/Region	County/ Regional Staff	State Fish and Wildlife	Consultant	Attorney
Benton	✓ ✓		✓	
Coachella	✓✓			✓
East Contra Costa	✓✓	✓	✓	
Pima	✓✓✓			
Williamson	✓		✓✓	

V. Case Studies

A. Benton County, Oregon HCP, *2010*

Table 3. Demographic and HCP information for Benton County

USFWS Region	1
Population	85,581 (US Census Bureau 2015)
County Area	432,640 acres (US Census Bureau 2015)
Plan Area	329,266 acres
Planning Unit One: Prairie habitat owned and/or managed by certain non-federal public agencies and conservation organizations	11,700 acres
Planning Unit Two: Privately owned + include Fender's blue butterfly habitat	317,566 acres

Primary Land Uses	Forest, Agriculture (Benton County Comprehensive Plan 2007, p. 16-2)
Number of Covered Species	7 prairie species: 2 butterflies and 5 plants
Mitigation	-Must occur on publicly owned site or protected land; -Mitigation ratios vary from 1:1 to 5:1 (conservation: impact) depending on quality of impacted site, quality of mitigation site, mitigation site status and timing of mitigation.
Implementation Funding	County Funding, General Obligation Bond, Local Property Tax Option Levy, Potential Federal Grant Sources
Other regulatory requirements the plan meets	State of Oregon ESA, the Migratory Bird Treaty Act, the Clean Water Act, and other state and local legislation
Length of HCP creation process	4-5 years
Permit duration	50 years

Plan Overview

Benton County, Oregon, in Region 1 of the USFWS' jurisdiction, is located in the southern portion of the Willamette Valley ecoregion (Kaye, Menke, Michaud, Schwindt, Wisehart 2010, p. 1). Much of the habitat loss that has already occurred in the region is due to conversion of land for agricultural crops and urbanization (Kaye et al. 2010, p. 1). One interviewee mentioned that out of all the HCPs she has worked on in the region, this was one of the fastest, so the Benton County HCP makes for an interesting case study (Anonymous Interviewee 1C, 2/11/2015).

The seven species covered in this HCP are those that reside in wet or upland prairie habitat in Benton County; one butterfly is the only species covered on private lands, and it is only covered for those properties that fall within the mapped potential habitat, the "Fender's Blue Zone." The plant species are all covered on county lands and those managed by the City of Corvallis, Oregon State University and the Oregon Department of Transportation, while the other butterfly is only covered on county lands (Kaye et al. 2010).

As written in the HCP, covered activities include: 1) ground disturbing activities necessary to allow home, farm and forest construction; 2) management of public and conservation organization lands; and 3) activities providing essential public services in the County (e.g., transportation and water system management, and utilities construction and maintenance) (Kaye et al. 2010, p. 43-44). The HCP cooperators and others who are eligible to obtain coverage for their activities are: 1) City of Corvallis, 2) Oregon DOT, 3) Greenbelt Land Trust, 4) Pioneer Telephone Cooperative, 5) NW Natural, and 6) Private landowners seeking a County permit or agricultural building authorization for work in the Fender's Blue Zone (Kaye et al. 2010, p. xiii).

Interviewees

For this case study, one interviewee was working with the Natural Areas and Parks department and another was in the Community Development- Planning Division in Benton County. The third interviewee was a consultant from the Institute for Applied Ecology.

Plan Preparers and Initiation of HCP process

USFWS informed county staff that they should consider doing an HCP. The Institute for Applied Ecology, a 501(c)(3) nonprofit specializing in restoration, research and education, wrote the HCP.

Logistical and Administrative Support from Other Organizations and Agencies

USFWS both informed the county about Section 6 funding and assisted with the grant application process. FWS staff supported the development of the scope, covered species, and covered activities and more generally guided the conservation strategy. FWS biologists assisted with assessments or information that was required and also helped coordinate so that all regulatory requirements were met with other governmental agencies. All three interviewees also "strongly agreed" that they were willing to work with USFWS staff during this HCP process. As one interviewee stated, "They came to a lot of meetings; they would be there at strategy sessions and planning meanings and things like that so they were helpful all along the way" (Anonymous Interviewee 1A, 1/22/2015). In addition to the grant money they received, two respondents felt that this administrative support from USFWS was key to the success of this plan. One

respondent also stated that FWS staff helped draft the HCP itself and FWS staff facilitated outreach to additional partners.

Other governmental agencies, such as the Oregon Department of Agriculture, and nongovernmental organizations, such as the Institute for Applied Ecology, assisted with the plan. For the state agencies, this collaboration was required because a species fell under the agency's jurisdiction. One respondent mentioned that the local consultant, the Institute for Applied Ecology, was one of the biggest factors for the success of this plan because of both its technical and public involvement and communication (Anonymous Interviewee 1A, 1/22/2015).

Local and Political Support

All three strongly agreed that county staff received political support during the HCP drafting process. They said that support from the local government, particularly the support of three Benton County commissioners who have a strong land use ethic, were key for the completion of this plan. Two of three respondents said that support from the local community was also key; one described the community as having "a fair degree of acceptance" and the other said that the community was "open to this sort of process" (Anonymous Interviewees 1A, 1/22/2015 and 1B, 1/27/2015).

One respondent also mentioned the importance of two subcommittees, a stakeholder committee as well as a technical advisory committee, which included people who had particular knowledge of prairie species and botany. Some of them were with the Oregon Department of Transportation and others were scientists from Oregon State University in Corvallis. There were also independent consulting biologists. Many of these contributors gave up their time at the request of the county, usually once a month or once a quarter for a couple years (Anonymous Interviewee 1B, 1/27/2015). The local watershed council also played a major role in contacting private landowners and educating them about the HCP.

Staff Capacity

County staff estimated that the full-time equivalent of county staff working on this project was between 1.5 and 2.5 full-time individuals. All interviewees either agreed or strongly agreed that regardless of their availability, they were interested in developing this Habitat

Conservation Plan, however, both county staff members that I interviewed did not feel they had adequate time in their schedule to work on this HCP.

Staff Opinions

Three of the survey's Likert scale questions gauged the staff's opinion, at the time of its creation, about the potential for the HCP to increase economic certainty for either the residents or developers, and the ability for the plan to improve conservation. All three agreed that the Habitat Conservation Plan would increase the ability to develop in areas with protected habitat. Interestingly, they all did not agree that the plan would increase additional funding for conservation of the species, and only two agreed that they felt that the plan would increase economic certainty for residents.

Determining the Covered Species

Academic researchers and USFWS staff were key contributors in deciding which species to include in the plan, and they did so by assessing where county-regulated actions intercepted the endangered species habitat. For example, they included species that roadside management would impact. A federal wildlife refuge a few miles north of Corvallis aided the decision process because there was already a lot of local knowledge, especially among local USFWS staff, about endangered species in the area prior to the planning of this HCP.

Perhaps due to the fact that five years have passed since the creation of the plan, there was some confusion over the importance of the species having a recovery plan and designated critical habitat for the creation of this HCP. The interviewee who seemed to have the best recollection of this particular issue stated that the recovery plans for these species were completed right after the creation of the HCP, so therefore they could not play a helpful role (Anonymous Interviewee 1C, 2/11/2015). The critical habitat, however, was released right after species listing, so it did help identify areas that were important to the species.

The Mitigation Strategy

When the group writing the HCP was determining the mitigation strategy, the group considered permittee-sponsored mitigation (i.e. the onus falls on the private landowner), as well as county-sponsored acquisition, protection, or enhancement. One interviewee said that third

party-sponsored habitat banking was also a consideration, at least at the beginning. As for land availability, all three interviewees stated that land was available for Benton County to acquire for mitigation purposes, but there was some confusion over whether land was already under the county's jurisdiction at the time of the creation of the plan.

All three interviewees emphasized, using different language, that Benton County chose county-sponsored mitigation because they wanted to maximize the protection of the species. One person said that after much debate, they decided on county-sponsored acquisition of land because they "felt that if the onus and the cost was put on the property owners, there would be a certain percentage who would not go through the process or would try to hide the fact that there was habitat or preemptively destroy the habitat" (Anonymous Interviewee 1B, 1/27/2015). Another stated that people typically see HCPs as a means for enhancing development, but that they wanted to change this and show that the HCP was the best option for the species and the habitat.

As stated in section 6 of the HCP, for impacts on non-federal, public lands, mitigation must occur at Prairie Conservation Areas, which include over 500 acres of lands where there is suitable habitat for the introduction of covered species or the covered species already occur. Alternatively, mitigation can occur on-site. For impacts on private lands (on the one butterfly species that is covered on private lands), Benton County will conduct the mitigation at designated butterfly conservation areas, or the private landowner needs to work directly with the USFWS to complete the mitigation themselves (Kaye et al. 2010, p. 96).

The mitigation ratios in this plan vary from 1:1 to 5:1 (conservation: impact) depending on the quality of the impacted site, the quality of the mitigation site, the mitigation site status, and the timing of mitigation (Kaye et al. 2010, p. 93). For example, lower mitigation ratios apply to sites that are under permanent deed restriction or conservation easement. The HCP includes a list of places where mitigation is planned or may be planned in the future and the quality of this habitat (Kaye et al. 2010, p. 96).

Funding for Drafting the Plan

Funding for this plan primarily was in the form of two USFWS Section 6 Habitat Conservation Planning Assistance Grants. Two respondents felt that this monetary support from USFWS was key for the success of this plan. Benton County also contributed its own funds

towards the drafting of the plan, as required by the Section 6 conditions.

Two respondents also stated that a state agency provided funding for the drafting of this HCP, and one of the respondents said that a nonprofit contributed financially. For example, one interviewee mentioned that the Oregon Watershed Enhancement Board both provided money and discussed other options of funding (Anonymous Interviewee 1B, 1/27/2015).

Funding for Implementing the Plan

To decide who would pay for the mitigation fees, two respondents mentioned the involvement of the community in determining the mitigation strategy, though they each provided different perspectives. One said that the endangered species were a community value, so residents felt that the mitigation costs could be spread through the community through the fees the county would have to pay to acquire land (Anonymous Interviewee 1C, 2/11/2015). The other said that they floated the idea at a public meeting of having the developers pay a fee on a land use application, but that that was not met with much approval, so the county commissioners decided to back off and pursue a strategy where the county would bear the cost (Anonymous Interviewee 1B, 1/27/2015).

Section 8 of the Benton County HCP addresses funding for the implementation of the plan. The plan states that administrative costs as well as mitigation costs for Fender's blue butterfly habitat restoration, enhancement, monitoring and outreach will be borne by several sources: 1) Local county funding from the Benton County Natural Areas and Parks, Community Development, and Public Works departments; 2) Undesignated County Funds; 3) General Obligation Bond; 4) Local Property Tax Option Levy; and 5) Potential Federal Grant Sources.

B. Coachella Valley, California Regional HCP, *2007 (Major Amendment in 2014)*

Table 4: Demographic and HCP information for the Coachella Valley

USFWS Region	8
Population	418,300 (US Census Bureau 2015)
Area	1,100,000 acres (US Census Bureau 2015)
Plan Area	1.1 million acres (Dudek 2014, p. ES-3)
Conservation area protected under this plan	746,100 acres (the majority is federal) (Dudek 2014, p. ES-8)

Maximum area of development covered by plan	Unspecified
Primary Land Uses	-16% is made up cities, and 84% is unincorporated -53% of plan area is public and private conservation lands (Dudek 2014, p. ES-3, p. 2-4)
Number of Covered Species	27 total: 5 plants, 2 insects, 1 fish, 1 amphibian, 3 reptiles, 11 birds, and 4 mammals
Mitigation	Dependent on the individual jurisdictions, although the regional governing body (CVAG) has already designated conservation areas
Implementation Funding	Local Development Mitigation Fee, trust funds, Regional Road Projects Mitigation, Regional Infrastructure Mitigation, transfer from the endowment for the earlier HCP it subsumed, interest on investments (Dudek 2014, p. ES-16)
Other regulatory requirements the plan meets	California Endangered Species Act, Natural Community Conservation Planning Act, Section 2810 of the California Fish and Game Code (NCCP) (Dudek 2014, p. ES-1)
Length of HCP creation process	15 years
Permit Length	75 years

Plan Overview

Coachella Valley is broad, low elevation valley in the westernmost limits of the Sonoaran Desert, in the eastern portion of Riverside County, which is approximately 100 miles east of Los Angeles (Dudek 2014, p. ES-2). The Coachella Valley Multi-Species HCP (MSHCP) makes an interesting case study because it is the only regional HCP in this collection, covering an area much vaster than the other plans; this is because the preparers of the plan wanted to maximize inclusion of the Coachella Valley Watershed (Dudek 2014, p. ES-2). Also, this HCP subsumes one of the first HCPs in the country, the Coachella Valley Fringe-Toed Lizard HCP, which was approved in 1986 (Dudek 2014, ES-10). It is also unique compared to HCPs in other states

because it is an HCP combined with an NCCP, and several federal agencies, the USFWS, the Bureau of Land Management, the US Forest Service, and the National Park System, have signed onto the plan agreement (Dudek 2014, p. ES-1). Additionally, in 2014, it experienced a major amendment. This is because in 2006, one of the cities decided not to approve the plan, but then in 2014 this city as well as a water district became permittees (Dudek 2014, p. ES-1).

Covered activities are broad, including activities such as development permitted by the Permittees and public facility construction, but it does not include agricultural activities (Dudek 2014, p. ES-25). Some of the most important covered activities are several interchange projects, which occur inside and outside of the conservation areas (Dudek 2014, p. ES-26). This plan covers 27 species, including five plants, two insects, one fish, one amphibian, three reptiles, eleven birds and four mammals (Dudek 2014, p. ES-6).

Interviewees

One of the interviewees for this case study works for the Coachella Valley Association of Governments (CVAG), which is the primary governing agency for this HCP. The other two interviewees worked for Riverside County. Riverside County makes up a large percentage of the plan area, and without its staff's participation, one interviewee said this plan would have never come to fruition (Anonymous Interviewee 4A, 2/11/2015).

Plan Preparers and Initiation of HCP Process

Two of the interviewees for this plan referred to the Coachella Valley Fringe-Toed Lizard HCP as the way they first heard about HCPs. Another mentioned that the idea was first presented to her when she met with federal agencies to resolve the problem that there was an endangered species in an area where the road department wanted to construct a highway overpass. CVAG contracted with a non-profit, the Coachella Valley Mountains Conservancy, to complete this plan.

Logistical and Administrative Support from Other Organizations and Agencies

All three interviewees mentioned that the USFWS played a big role in the drafting of this HCP; their biologists assisted with assessments, they helped decide what activities and species to cover, and they provided advice on the conservation strategy. Two of the interviewees felt that

the USFWS facilitated outreach to additional partners, and interestingly, they also said that the USFWS helped write the HCP. One of the three interviewees also felt that they helped coordinate with other governmental agencies so that all regulatory requirements were met. USFWS also informed CVAG about Section 6 funding, assisted with the grant application process, and ultimately provided this grant.

A Project Advisory Group, made up of representatives of Parties to the Planning Agreement, other public agencies, private sector groups, such as the Building Industry Association, and non-profit groups, such as the Sierra Club, held public forums so that potentially affected landowners could offer input to the planning process. A scientific advisory committee, which included several well-known conservation biologists, provided the technical expertise for biological issues. All of the interviewees stated that the lengthy HCP creation process was due to the number of parties involved.

Local and Political Support

All interviewees agreed that local and political support were key to the successful completion of this plan. Two felt that the local community supported it because it would streamline the development process or the construction of highway systems, while another stated that the more important factor was the local community wanted to maintain their quality of life through conservation; she said the valley had an environmental ethic. This same interviewee from Riverside County stated that she only felt neutral regarding whether staff received support from political leaders before and during the HCP process.

This case study was not the first to illustrate that the success of the HCP process for Coachella Valley was highly dependent on local and political cooperation. In fact, a prior case study on this plan found that the plan faced hiccups at the beginning of the process due to a lack of "political clout to mobilize powerful regional allies, the administrative authority to compel its constituent municipalities, or a clear strategy to move the MSHCP past its political hurdles…" (Alagona 2008, p. 9). This study on the Coachella Valley MSHCP makes two primary suggestions for regional HCPs:

> 1) Define clear process management, for example, a description of how collaborative decision-making will take place. Attorneys and consultants familiar with HCPs can help achieve this goal.

2) Ensure that a regional body with political clout supports the plan, not just a voluntary organization like the CVAG (Alagona 2008, p. 10).

Staff Capacity

At Riverside County, one staff member felt that the contribution of two staff members there was minimal. The other said that about five of the 15 years that the plan took to complete, the equivalent of one full-time person from that county was working on the HCP. At CVAG, 4 staff members worked on this HCP. All three interviewees were interested in working on this HCP and felt strongly that they had adequate time in their schedules to work on it.

Staff Opinions

At the time of the plan completion, only one interviewee felt the plan would provide an efficient means for development near protected habitat, but all felt it would bring economic certainty for residents. Two interviewees felt it would increase funding for conservation.

Determining the Covered Species

As the plan states, the planning agreement initially identified 52 species to be considered for inclusion in the plan, and ultimately, as one interviewee described, the scientific advisory committee, narrowed this down to 27 species (Dudek 2014, p. ES-6). One interviewee mentioned that the USFWS had veto authority and made the final decision when determining what species to cover (Anonymous Interviewee 4B, 2/25/15).

An interviewee said that often species were removed from the list if they were already covered by an umbrella species or because they did not have enough information. Nevertheless, the interviewee said that they wanted to provide protection not only for listed species, but also unlisted species that were threatened or might be heading towards listing in the future (Anonymous Interviewee 4A, 2/11/2015).

As for the relevance of designated critical habitat and recovery plans, the CVAG staff member said that having designated critical habitat was helpful for some species, but it was not referenced much. This is because the scientific advisory committee generated habitat models for each species that they used to determine what the conservation areas were. She also said, "All of the conservation planning was designed to be consistent with the recovery plans," although not

all the species had recovery plans (Anonymous Interviewee 4A, 2/11/2015). Another interviewee mentioned that she thinks the USFWS will sometimes wait to release designated critical habitat and recovery plans until after HCPs are created because they know the HCPs will address these issues (Anonymous Interviewee 4C, 4/8/2015).

The Mitigation Strategy

The CVAG interviewee stated that the group based the mitigation for the Coachella MSHCP on the earlier Fringe-Toed Lizard Habitat Conservation Plan because everyone was familiar with how it worked. Thus, they made this MSHCP a fee-based mitigation program where developers pay a fee in exchange for the right to develop on their property. She said they wanted to "give the local jurisdictions, the local city and county, the authority to make a decision about what mitigation or what development would be allowed, of course that was consistent with the multiple species plan" (Anonymous Interviewee 4A, 2/11/2015). She also pointed out that in regional HCPs, the governing agency, which in this case is the CVAG, does not have the authority to acquire lands, except through charging a fee. But in this case there were lots of lands available through NGO's that CVAG could put conservation easements on (Anonymous Interviewee 4A, 2/11/2015).

Through the plan, CVAG established a reserve system made up of 21 conservation areas that protect the habitats of the covered species, made up of existing conservation lands protected by local, state, or federal agencies or non-profit conservation organizations, which covers approximately 587,000 acres. The plan also promises to acquire or otherwise conserve additional conservation lands, a minimum of 129,690 acres, through state and federal acquisitions. Additionally, there will be Permittee contributions (Dudek 2014, p. ES-8-ES-10).

Funding for Drafting the Plan

The county staff both stated that some funds came from the county to pay for the development of the HCP. Also, in addition to the Section 6 funding that the USFWS provided, the state provided their own funding as well because this was a combined NCCP.

Funding for Implementing the Plan

One of the interviewees stated that the group decided who will pay for the mitigation

using an economic study. In the end they chose "what was politically palatable" that could get them the most conservation (Anonymous Interviewee 4B, 2/25/2015).

The plan lists the local development mitigation fee, trust funds, regional road projects mitigation, regional infrastructure mitigation, transfer from the endowment for the earlier HCP it subsumed, and interest on investments as the primary sources of funding for the implementation of this plan (Dudek 2014, p. ES-16). Chapter 5 discusses these sources of funding in more detail. Specifically, a fee of $5,730 per acre is the estimated Local Development Mitigation Fee, which can be revised, "should it be found insufficient to cover mitigation of new development;" it is projected to increase 3.29% annually (Dudek 2014, p. 5-11).

C. East Contra Costa County, California HCP, *2006*

Table 5: Demographic and HCP information for East Contra Costa County

USFWS Region	8
Population	1,094, 205 (US Census Bureau 2015)
County Area	> 435,0000 acres (Jones & Stokes 2006)
Plan Area	174,018 acres
Range of area protected under this plan	23,800-30,000 acres
Maximum area of development covered by plan	13,000 acres
Primary Land Uses	In the west and central areas: residential, commercial and industrial. In the east: primarily agriculture and general open space.
Number of Covered Species	28 total: 2 mammals, 4 birds, 4 reptiles, 3 amphibians, 4 invertebrates, and 11 plants
Mitigation	A preserve network is in place, covering 23,800 acres, with the potential to cover 30,000 acres. Restoration or creation of habitat is required for habitat loss of wetlands, riparian woodland, and oak savanna habitat at ratios varying from 1:1 to 2:1; this restoration is estimated to be 436 acres under initial development scenarios.
Implementation Funding	Fees on covered activities (required for permit coverage under the plan) and non-fee public funding (only for species recovery, not mitigation)

Other regulatory requirements the plan meets	California NCCPA, Clean Water Act Sections 401 and 404, the Porter Cologne Water Quality Control Act, and Section 1602 of the California Fish and Game Code
Length of HCP Process	5 years
Permit Duration	30 years

Plan Overview

The East Contra Costa HCP is also an NCCP. Contra Costa County is located into the San Francisco Bay Area, and land is used for many purposes in the county (Table 5). A county report on land use stated that despite the fact the county is located in the Bay Area, one of the most populated urban areas in the nation, as of 2000, only 25% of the land is developed (California Contra Costa County 2015). The East Contra Costa HCP is a joint effort between four East County cities (Pittsburg, Oakley, Brentwood and Clayton), Contra Costa County, the Contra Costa Flood Control and Water Conservation District, and East Bay Regional Park District. Secretary of Interior Sally Jewell has hailed this plan as a great illustration for counties around the nation, so this county makes for a great case study (Simons 2014).

All of this HCP's planning occurs in the inventory area, located in the eastern portion of Contra Costa County, which covers about one third of this area. The inventory area includes lands where impacts and conservation would occur; within the inventory area is the permit area where the county requested take authorization. There are several categories of land included in the permit area: 1) lands that fall within urban limits of the county and cities; 2) those impacted by specific rural infrastructure plans outside city borders; and 3) lands acquired in fee title or conservation easement that are managed by this plan.

28 covered species are included in this plan: 2 mammals, 4 birds, 4 reptiles, 3 amphibians, 4 invertebrates, and 11 plants (Jones & Stokes 2006, ES-4). Covered activities "include all ground-disturbing activities controlled by permit holders via their land use planning process," as well as "specific rural infrastructure projects outside these urban boundaries that will support urban growth (e.g., road and flood control projects and maintenance)" (Jones & Stokes 2006, ES-3).

Interviewees

Two of the interviewees were from the Contra Costa County Community Development Department, which acted as the HCPA Coordinating Agency. The third was a consultant from the Jones & Stokes consulting company, and the fourth works at the California Department of Fish and Wildlife.

Plan Preparers and Initiation of HCP process

This HCP was prepared by Jones & Stokes Associates (which ICF International has now acquired), with help from the Economic & Planning Systems and Resources Law Group. The East Contra Costa's Habitat Conservation Plan was spear-headed by the fact that the local water district wanted to increase water withdrawal from the local delta, and the California Department of Fish and Wildlife said that was growth-inducing, and that this growth's impacts on endangered species would need to be appropriately mitigated for with an HCP.

Logistical and Administrative Support from Other Organizations and Agencies

All three interviewees strongly agreed that they were willing to work with USFWS staff during this HCP process. The USFWS informed county staff that they should consider doing an HCP, assisted with the grant application process, and supported the development of the scope, covered species, and covered activities and more generally guided the conservation strategy. A consultant on the project stated that FWS biologists assisted with assessments that were required for the completion of the HCP. Most interviewees also felt that FWS helped coordinate so that all regulatory requirements were met with other governmental agencies. Additionally, one person said, "They helped create the political support for writing the HCP by going to city council meetings, by meeting with individual elected officials, [and] by meeting with individual staff. Basically they worked the politics, which I think is an important role" (Anonymous Interviwee 3D, 3/2/2015). Another interviewee mentioned that, at least in the Sacramento office, it was common for the USFWS to engage in group editing of the HCP. Related to this was his opinion that it is a necessity for HCP consultants to be willing to receive input from USFWS staff (Anonymous Interviewee 3B, 2/23/2015).

The California Department of Fish and Wildlife also played an active and important role in the HCP process, providing guidance throughout the process. One person said that, unlike

many HCPs, the consistent intelligence and practical and strategic involvement of the wildlife agencies was key; for the most part, a single contact person from each agency was available for the entire process.

Local and Political Support

Before and during the HCP process, staff received support from political leaders. One stated that political leadership and local officials supporting the plan was one of the most important factors. Local stakeholders also played an important role; several NGO's were active stakeholders in the HCP process, including the Sierra Club, Greenbelt Alliance, Save Mount Diablo, the Audubon Society and the California Native Plant Society. All of these groups helped champion its approval, and one interviewee felt that "consensus among the stakeholders was the most powerful factor in getting it approved and writing a plan that could be approved" (Anonymous Interviewee 3D, 3/2/2015). Having a facilitated public meeting where stakeholders were sincerely included paid off during periods of political turnover.

Staff Capacity

County staff estimated that the full-time equivalent of county staff working on this project was approximately 1.5 full-time individual. On the consulting side, 1 full time equivalent worked on this plan for five years. All interviewees either agreed or strongly agreed that regardless of their availability, they were interested in developing this Habitat Conservation Plan, but only one of the two county staff members working on the HCP felt they had adequate time in their schedule to work on it.

Interviewees agreed that the success of this HCP was due to staff efforts. As one said, "The completion of this was really about personalities. There was a lot of integrity and a lot of work that went into this." They had a "No Excuses" process, where they wanted to genuinely bring the HCP into existence (Anonymous Interviewee 3A, 2/19/2015). More specifically, one interviewee said that having good consultants on the project was critical to the plan's success (Anonymous Interviewee 3B, 2/23/2015).

Staff Opinions

All three strongly agreed that the Habitat Conservation Plan would both increase additional funding for conservation of the species as well as increase economic certainty for residents.

Determining the Covered Species

The group considered 154 special-status species that occurred in the inventory area and then narrowed this list down. The group determined the 154 species using multiple sources outlined in Section 3.3.7 of the HCP, including California-specific resources such as the California Natural Diversity Database, Jones & Stokes research and in-house information, informal consultation with USFWS, and personal communication with local experts. These special-status species "are defined as plants and animals that are legally protected under ESA, CESA, or other regulations, and species that are considered sufficiently rare by the scientific community to qualify for such listing" (Jones & Stokes 2006, p. 3-40).

The HCP preparers shortened the list of species because of USFWS reactions to other HCP plans with over 100 species; for example, a neighboring county had around 150 species on a plan initially, and FWS required them to shorten it. Thus, Jones & Stokes staff determined it would be a waste of resources to make the East Contra Cost HCP this large also. The consultant interviewed for this case study stated that having a clear, focused HCP that does not spread itself too thin in terms of number of species, is key (Anonymous Interviewee 3C, 3/5/2015).

In order to narrow the list down, to qualify as a covered species, the special-status species had to fit four criteria related to: 1) range; 2) status; 3) impact and 4) data. To meet the range criterion, the species had to be known to occur or likely to occur within the inventory area. To meet the status criterion, the species had to be currently listed under ESA or CESA or likely to be listed within the permit term (30 years). The impact criterion was whether the species would be or was likely to be impacted by the covered activities. Related to this is the data criterion that ensured that sufficient data existed on the species to adequately assess impacts (Jones & Stokes 2006, p. 3-41).

The group also thought broadly about umbrella species, i.e. those whose being covered by the HCP also covered requirements for other species. They wanted to be as inclusive as possible of the species that wildlife agencies were concerned about as well as the developers. One interviewee mentioned that they specifically did not cover any fish or delta saltwater species

so that NOAA, NFMS, and other marine agencies did not become involved (Anonymous Interviewee 3A, 2/19/2015).

The Mitigation Strategy

The HCP preparers developed a conservation strategy, described in detail in Chapter 5, to use for mitigation and to contribute to the recovery of the species. Its primary component is a "system of new preserves linked to existing protected lands to form a network of protected land outside the area where new urban growth will be covered under the HCP/NCCP" (Jones & Stokes 2006, 5-2). This strategy incorporates conservation measures at three ecological scales: landscape, natural community (or habitat), and species. The preserve system includes approximately 23,800 acres of land under the initial urban development area, with a potential for 30,300 acres under the maximum urban development area. The plan also requires restoration or creation of habitat for "habitat loss of wetlands, riparian woodland, and oak savanna at ratios varying from 1:1 to 2:1 [conservation: impact]" (Jones & Stokes 2006, ES-5). The preparers estimated that restoration would be 436 acres under initial development areas and 598 acres under the maximum development areas.

There was disagreement between the three interviewees on the status of land ownership and the potential for land acquisition for East Contra Costa County at the time of HCP drafting for mitigation and conservation, though all agreed that land was available for acquisition by the county. The disagreement was over whether land was already under the applicant's jurisdiction. All three agreed, however, that the preparers considered permittee-sponsored mitigation (i.e. the private landowners pay), county-sponsored mitigation, and third party sponsored habitat banking.

One interviewee explained that the preparers chose to use the county-controlled preserve system because of "the streamlined process of it;" she stated, "In a way we're like a giant mitigation bank. It's not quite the same, but it's similar" (Anonymous Interviewee 3A, 2/19/2015). Another interviewee stated that the strategy was based first on the needs of the species, second on the conservation gaps in the plan area, i.e. where the conservation needs were, and third on the type of impacts that were happening and the required mitigation for those impacts (Anonymous Interviewee 3C, 3/5/2015).

Funding for Drafting the Plan

Two interviewees emphasized that having consistent and steady funding was a critical factor in the completion of this plan and the plan would not have come to fruition using the county or the cities' own funds to write the plan. Sources of funding included the local governments, the local water district, a USFWS section 6 grant, US Environmental Protection Agency funding, and state agency funding. The state and federal agencies informed the county about these sources of funding, and they also found some of them themselves.

Funding for Implementing the Plan

The executive summary of the HCP has a succinct summary of the funding mechanism, which can be find in more detail in Chapter 9:

> Funding to implement the Plan will come from a variety of sources. These sources may be classified as fees on covered activities and non-fee public funding. Proponents of covered activities will pay a fee to receive permit coverage under the Plan, a much simpler process for mitigating endangered species impacts than would be possible a project-by-project basis. Non-fee public funding will either come from continued investment by local, state, and federal programs already funding conservation in this area or from existing state and federal sources reserved for areas with an approved HCP/NCCP.

Additional fees will apply for impacts on jurisdictional wetlands and waters (on top of the development fees), and each covered road project will have its own pre-defined fees. In lieu of fees, land may be contributed. The plan states that the public funding contribution can only be used for species recovery, not mitigation (Jones & Stokes 2006, 9-16).

Chapter 9 describes the "fair share analysis" that allocated the costs of implementing between future development and the public:

> This analysis considers the amount of open space acquisition relative to the amount of development before and after adoption of the HCP/NCCP and assigns the costs of the HCP/NCCP according to the premise that future development should pay a share of the costs of habitat conservation in the inventory area proportionate to its share of the overall habitat impacts on the inventory area… Because the pace of habitat protection relative to development before Plan

adoption was significantly lower than will be required under the HCP/NCCP, new development will pay a share of the costs of implementing the HCP/NCCP, and existing development (i.e., the public) will also pay a share.

In the initial urban development area scenario, new development pays 43% of the cost, and the public pays 57% of the remaining costs (Jones & Stokes 2006, 9-19).

One interviewee emphasized that because this plan was both a federal HCP and California NCCP, there was a requirement for species recovery, which played into the group's consideration of a fee mechanism (Anonymous Interviewee 3B, 2/23/2015).

D. Pima County, Arizona HCP, *2015 (Expected)*

Table 6: Demographic and HCP information for Pima County

USFWS Region	2
Population	996,500 (US Census Bureau 2015)
County Area	5,879,669 acres (Pima County, 2012, p. 6)
Plan Area	5,879,669 acres
Estimated land acreage in preservation for the plan	116,000 acres
Maximum area of development covered by plan	36,000 acres
Primary Land Uses	Most of the land in the county is tribal-owned, and the rest is mainly state or federal-owned. Only 11.7% is private property.
Number of Covered Species	44: 4 plants, 7 mammals, 8 birds, 5 fishes, 2 amphibians, 6 reptiles, and 12 invertebrates (mollusks)
Mitigation	-County already has lands under their jurisdiction or they are leasing lands to meet the need for 116,000 acres. -Mitigation ratios range from 2:1 (acres conserved: acres impacted) to 5:1 depending on the habitat type and land use. -Participation in plan by private parties is voluntary
Implementation Funding	-Primarily general obligation bonds and a flood control district tax levy -The participation fee is undisclosed in the draft HCP

Other regulatory requirements the plan meets	Pima County Controlling Document (avoids and minimizes impacts to scenic, cultural and wildlife resources), Arizona Native Plant Law, National Historic Preservation Act
Length of HCP creation process	15 years
Permit duration	30 years

Plan Overview

Pima County, Arizona lies in Region 2 of USFWS jurisdiction. This HCP has not yet been approved by USFWS, but the interviewees for this plan feel that it will gain approval within the year (2015) and therefore it still serves as a valuable case study. This is an interesting case study because so far, the HCP process has taken around 15 years. The HCP is predicated on the Sonoran Desert Conservation Plan, which is a land management plan to identify "the types of development that improved the tax base," as well as "critical habitats and biological corridors, riparian areas, mountain parks, historical and cultural preservation, and ranch conservation" (Pima County Arizona 2015). The county's Maeveen Marie Behan Conservation Lands System (CLS) is the means for protecting the tax base and providing opportunities for economic growth while achieving the biological goals of the Sonoran Desert Conservation Plan (Pima County Arizona 2015).

42% of the land area in Pima County is tribal, 14.7% is owned by the State of Arizona, 0.8% is Municipal, 1.9% is owned by Pima County, and 11.7% is private property. The rest of the land all falls under federal ownership: the Bureau of Land Management, the Bureau of Reclamation, the Department of Defense, US Fish and Wildlife Service, the National Park Service, and U.S. Forest Service (Pima County, 2012, p. 6). The permit area includes private lands under the legal authority of Pima County; "lands the County owns in fee simple and lands on which the County possesses a property right, including those located within other jurisdictions," and "lands on which Pima County constructs and maintains infrastructure" (Pima County 2012, p. 13). The permit area also includes State Trust lands that Pima County leases, purchases, or that fall under Pima County regulatory jurisdiction after being released to development. The permit area can also include BLM lands that the county patents for open-space purposes or that is released to development.

The plan covers 44 species: 4 plants, 7 mammals, 8 birds, 5 fishes, 2 amphibians, 6 reptiles, and 12 invertebrates (mollusks) (Pima County 2012, p. 15). Eight are endangered or threatened, and five are candidates or have been petitioned for listing under the ESA. A full list of the covered activities for Pima County is found in Section 3.4 of the HCP. Basically, covered activities include Pima County projects that fall in the permit area, such as construction and maintenance of county facilities and infrastructure, and development on private land for "grading of 14,000 square feet or more," and "development of a privately-owned property where Pima County has approved a development plan for non-residential uses," where the property owner has elected to participate in the Section 10 permit (Pima County 2012, p. 17). The HCP states, "Based on the suite of Covered Activities and a modeling of urban growth projections, Pima County anticipates that there will be approximately 36,000 acres of disturbance resulting from the Covered Activities within the Permit Area during the 30-year permit period. For this amount of disturbance, Pima County would provide approximately 116,000 acres of mitigation" (p. x).

This plan is unique because Pima County has already spent approximately $150 million on land acquisitions since 2004 in preparation for the Section 10 permit mitigation needs, which came primarily from bond funds approved by voters. As a component of the plan's predecessor, the Sonoran Desert Conservation Plan, "most of the management and enforcement functions associated with this MSCP are already taking place as the County implements the natural resource and open-space elements" of this plan (Pima County 2012, p. xi).

Interviewees

All three interviewees were county staff who acted as preparers of the HCP.

Plan Preparers and Initiation of HCP process

Chapter 11 of the HCP includes a list of the contributors to this HCP. The USFWS informed county staff that they should consider doing an HCP, and one interviewee said the Arizona Game and Fish Department also played a role in informing the county about HCPs.

Logistical and Administrative Support from Other Organizations and Agencies

One interviewee said that the fact that "USFWS was willing to be a partner in working with us in developing a proposal, an MSHCP, that is different than any other one they've ever

entertained before" was one of the biggest factors leading to the success of this HCP (Anonymous Interviewee 2A, 2/9/2015). Broadly, USFWS "staff advised on a lot of different policy issues, and procedural issues and biological issues, prioritization, that sort of thing" and informed them about available USFWS funding for completion of the plan (Anonymous Interviewee 2B, 2/20/2015). All three interviewees also "strongly agreed" that they were willing to work with USFWS staff during this HCP process. Unlike the other case studies, there was disagreement among the interviewees regarding whether the USFWS assisted with the grant application process and whether they facilitated outreach to other partners. All interviewees agreed, however, that FWS staff supported the development of the scope, covered species, and covered activities and more generally guided the conservation strategy. Additionally, USFWS staff participated as biologists on the Scientific Technical Advisory Team, who were separate from the staff who acted as HCP representatives. Two interviewees confirmed that USFWS coordinated so that all regulatory requirements were met with other governmental agencies.

One interviewee did not feel the county office received assistance from other nongovernmental agencies or governmental agencies in the creation of the HCP, while the other two did. For the two who did, they said that this assistance was not required because the species was present on land that fell under that agency's jurisdiction.

Local and Political Support

One interviewee said that the commitment of local government leaders was one of the most important factors leading to the success of this HCP, though she said that wouldn't have happened without the support of the grassroots sustaining them over time (Anonymous Interviewee 2B, 2/20/2015). She said that this support was not going to occur unless "there's a lot of congruence between what the HCP can offer and what local values and goals there may be," especially in cases like Pima County where "there's not an urgent need that we have a permit because the species that was giving us the most concern from the developers' standpoint and, frankly, an environmental standpoint is no longer listed and it's not even found in some of the developing areas that it was" (Anonymous Interviewee 2B, 2/20/2015). However, another interviewee pointed out that though she felt they were supported by local political leaders, this sentiment was not felt at the state level (Anonymous Interviewee 2A, 2/9/2015).

Staff Capacity

It was very difficult for the interviewees to gauge how many staff, and their full time equivalent, worked on this HCP. For the current draft only, 43 people are listed as preparers from the county, and 14 people are listed as contributors from the USFWS and Arizona Game and Fish Department. One person estimated that from the county, approximately 25 full-time equivalents worked on this HCP. They all said that county-level HCP employment varied throughout the years; for example, years with more fieldwork required more labor. All interviewees either agreed or strongly agreed that regardless of their availability, they were interested in developing this Habitat Conservation Plan and that they felt they had adequate time in their schedule to work on it.

Staff Opinions

One interviewee said that the preparers having a good understanding without too many misconceptions about what can be gained by going through the [HCP] process is one of the biggest factors leading to successful HCPs (Anonymous Interviewee 2B, 2/20/2015). Two interviewees felt that the plan would provide additional funding in the county for conservation, while one mildly disagreed, but all agreed that it would increase economic certainty for residents. They also disagreed on whether they felt the HCP would provide an efficient means for development on protected habitat.

Determining the Covered Species

To decide what species to include in the HCP, all the interviewees mentioned that the Scientific Advisory Team, which was comprised of different experts who chose which species to focus on based on their biological diversity importance, and their likelihood of listing in the 30 year permit period. One of them mentioned that the CLS preserve design covered 54 species, so they narrowed the list from there (Anonymous Interviewee 2A, 2/9/2015); all of them mentioned that they assessed the likelihood of a take occurring for the species, given the proposed covered activities, to determine which to include in the HCP. Another interviewee mentioned that when the plan was started, they didn't have species-specific models for habitat, so they had to develop those on their own. They worked with the experts to determine the models for habitats

(Anonymous Interviewee 2B, 2/20/2015). None of the interviewees said that the species having recovery plans or designated critical habitat helped facilitate the creation of the HCP.

The Mitigation Strategy

The interviewees said that the draft preparers considered both developer-responsible mitigation and county-sponsored mitigation, and two of the three said they also considered third-party sponsored habitat banking. In the end, the HCP preparers chose to use the Sonoran Desert Conservation Plan as a guide for county-sponsored mitigation, and one of the interviewees said this pre-existing Sonoran Desert Conservation Plan was one of the biggest factors leading to the success of this HCP. Pima County already has over 74,000 acres of fee-owned lands and 214,000 acres of lease lands that would be used to meet the 116,000 acres necessary for the 36,000 acres of disturbance that are expected in the county during the plan permit duration. 5,000 of those acres are for county-related construction and maintenance activities, and the remaining 31,000 acres are for ground-disturbances caused by private-sector development (Pima County 2012, p. 17). It is important to note also that if a developer chooses to opt-into the plan, under the Opt-In Provisions they do have the option to contribute mitigation lands (Pima County 2012, p. 98).

The mitigation ratios range from 2:1 (conservation: impact) for impacts that occur on "Agricultural In-holding" and those lands outside the Conservation Lands System, to 5:1 for "Biological Core Management Areas," "Special Species Management Areas," and "Important Riparian Areas" (Pima County 2012, p. 39). The HCP describes how the modeled habitat for the covered species is not equally distributed across the mitigation lands, so to account for this, "mitigation will be appropriately located with respect to habitat such that a minimum equivalency conservation ratio of 1:1 can be achieved" (Pima County 2012, p. 42). Because the county already has so much land in its jurisdiction for use in this plan, only one of the covered species does not have a 1:1 ratio of habitat to conserved area.

For some of the lands used for mitigation, for example, those that fall outside of the county reserve system, depending on the county's stewardship level of these lands, which depends on how long the county holds the lease and the conditions of the lease, only a certain percentage of the land area will count for the mitigation. Thus, for example, if a land that is leased by the county has a 50% mitigation credit and it needs to mitigate for an impact occurring

in an area designated for 5:1 mitigation, then actually the mitigation will need to occur as a 10:1 ratio of conservation to disturbance, assuming that only that particular leased land is used for the mitigation. One of the anonymous interviewees informed me that in the final draft of this HCP, there will be more detail on the issue of assigning mitigation credits, as they realized the draft used for this case study does not provide sufficient detail (Anonymous Interviewee 2B, 2/20/2015).

Two interviewees emphasized that this mitigation strategy, which incorporates high mitigation ratios, reflected the high standards the county set for itself regarding conservation. One said, "We took the landscape level approach and [said], 'Ok, what do we have available that can help us accomplish a landscape level, conservation objective better than what we see out there right now.' Because what we see out there right now doesn't necessarily work very well in terms of providing effective landscape conservation" (Anonymous Interviewee 2A, 2/9/2015).

Funding for Drafting the Plan

Three sources of funding were used for this HCP: the county's funds, a FWS Section 6 grant, and a congressional earmark.

Funding for Implementing the Plan

One interviewee said the preparers of this plan did not to rely on a developer pays system because she did not want their conservation to be limited to what the developers paid for; to achieve the mitigation they needed, the county needed to acquire (and pay for) the lands themselves (Anonymous Interviewee 2A, 2/9/2015). Thus, funding for this plan is almost entirely funded by the county, which the plan states is assured to come from general obligation bonds, the primary funding mechanism for purchase of mitigation lands, and a flood control district tax levy (Pima County 2012, p. 98). The plan also includes other potential sources of funding (Pima County 2012, p. 100).

The exceptions to this county funding are the various fees for participants who elect to be included in coverage (Pima County 2012, p. 98). All private sector participants will pay an application fee, at the minimum, though the amount of that fee is not included in the draft of the HCP, while those who also contribute mitigation lands will pay a monitoring fee. The plan also states that the private sector will bear the costs necessary for "avoidance and minimization

practices exercised through compliance with Pima County Code requirements…and implementation of rezoning conditions that require Open Space Set-Asides for CLS compliance" (Pima County 2012, p. 98). Additionally, the plan mentions a couple other unique agreements between a developer and the county that fall under the County's Comprehensive Land Use Plan update (2001), where the developer has agreed to pay for some mitigation (Pima County 2012, p. 100).

E. Williamson County, Texas HCP*, 2008*

Table 7: Demographic and HCP information for Williamson County

USFWS Region	2
Population (2010)	422, 649 (US Census Bureau 2015)
County Area	715,712 acres (US Census Bureau 2015)
Permit Area	Same as county area
Range of area protected under this plan	Roughly 1,830 acres of karst habitat Acreage of avian species protection unspecific
Expected development (impact) covered by plan	-Unspecified for karst species, although 10-20% of development on 80,000 acres of karst habitat, i.e. 8,000-16,000 acres of development on karst habitat, is expected to participate in this voluntary plan. -Take of one avian species' habitat is expected to be 6,000 acres. For the other, the expected take is not expected to exceed 4,267 acres.
Primary Land Use	83% rural (unincorporated), made up of agriculture, ranches, and homes. The remainder of the land is in incorporated towns and cities.
Number of Covered Species	4 total: 2 karst invertebrates and 2 bird species (but also addresses additional species)
Mitigation	-County has set up reserves for the karst species, and will purchase from habitat conservation bank for avian species. Other avian species' mitigation is unspecific. -Mitigation ratios vary from 0.5:1 to 2:1 for all species -Voluntary participation for developers. Pay participation fees that vary depending on impact location and species affected. Donation of habitat land accepted in-lieu of participation fee on case-by-case basis.

Implementation Funding	1) participation (mitigation) fees collected from participants; 2) return on endowment investments; 3) county land acquisition funds for parks and open space, provided a public access plan is in place; 4) county advance funding from road improvement mitigation funds; and 5) a Tax Benefit Financing (TBF) program
Other regulatory requirements the plan meets	Subchapter B, Chapter 83 of the Texas Parks and Wildlife Code
Length of HCP creation process	4-5 years
Permit Duration	30 years

Plan Overview

As one of the interviewees, who has worked on many HCPs, stated, ESA compliance in Texas is unique because for many years Texans resisted the ESA, believing that it was an unjust regulation on their private property rights. However, eventually they came around to the fact that the ESA is a modification on their lands, yet they need to comply. Williamson County makes for an interesting case study because it is a historically conservative county that was experiencing and expecting rapid development at the time of the HCP creation because of the growth of Austin, which led to the creation of suburbs on its lands. As the plan states, the population of the county is expected to grow from under 400,000 to over 1.5 million over the lifetime of the plan (30 years), and 69% of the growth will likely take place where most of the endangered species and rare species occur (SWCA Consultants 2008, vii). Additionally, one of the alternative HCP models that the HCP preparers considered is based on land use in the county, which would have been modelled on the Pima County HCP, another case study in this collection that also occurs in Region 2. This HCP admits that this alternative would have provided benefits to the county such as streamlining the development process, and it would have provided adequate protection for the species. However, the group rejected the alternative because "the County does not have the regulatory authority to implement land use zoning" (SWCA Consultants 2008, p. 2-7).

Covered activities include a variety of activities, including the broad category of "public or private construction and development" and "land clearing" (SWCA Consultants 2008, ix). Covered species include two karst invertebrates and two federally listed bird species. It is important to note that this plan also addresses several "additional," species, i.e. species that are not covered by the plan, but are rare species that occur in the area. Information about these species is not an emphasis of this case study.

Interviewees

Two of the interviewees for this case study were consultants and one was a county staff member.

Plan Preparers and Initiation of HCP process

SWCA Consultants, Smith, Robertson, Elliot, Glen, Klein & Bell, L.L.P., Prime Strategies, Inc., and Texas Perspectives, Inc. prepared this plan. The interviewees all mentioned that the creators of this HCP first heard about the HCP process by watching neighboring counties go through the HCP process; for example, Travis County, which houses the city of Austin, went through the process around a decade before Williamson County. At the time of Travis County's HCP release, officials in Williamson wanted nothing to do with the creation of an HCP, however, consultants and attorneys who had worked in the Travis County area encourage the county to consider it because they felt that the presence of a recovery plan for karst invertebrates, some of the primary endangered species of concern in the county, would make it relatively easy to put together a preserve system for an HCP that could ultimately lead to the down-listing of these species. In the end, county officials felt pressured to do an HCP because of several development projects that were held up for environmental reasons. One interviewee mentioned that a large shopping center development was held up, and that was a direct impetus for the development of this HCP (Anonymous Interviewee 5A, 3/4/2015).

Logistical and Administrative Support from Other Organizations and Agencies

Two interviewees, consultants for this HCP, said that the USFWS helped with the grant application process for the Section 6 grant application. Two out of three interviewees also felt that the USFWS staff helped coordinate with other governmental agencies so that regulatory

requirements were met. One interviewee mentioned that for some HCPs the USFWS is one of the primary determiners of the scope, covered species and covered activities, but that for this HCP, they acted as supporters, not drivers. They emphasized that these decisions were up to the county officials and their consultants. All three said that the Fish and Wildlife Service helped guide the conservation strategy, that is, they helped develop what conservation measures were necessary for these species.

All three interviewees alluded to individuals at the regional Fish and Wildlife Service as either catalysts for the success of this plan or major hindrances. Two interviewees said at the beginning of the process, the USFWS partnership was key for the success of the plan. However, after one valued USFWS individual retired, "shenanigans really began [and] there was a period of time, almost three years, where nobody from Fish and Wildlife showed up to the regular meetings at the Williamson county HCP. They just didn't attend, they were invited every single time" (Anonymous Interviewee 5C, 3/19/2015). Essentially, these "personality" issues at the regional USFWS office led to a difficult relationship in general with the regional office for the remainder of the HCP creation process and into its implementation.

The consultant team was also cited as a key factor for success of this plan, which is unsurprising given that consultants approached the county with the idea for the HCP to begin with. The Texas Parks and Wildlife Department was also involved in this HCP, however, one interviewee stated that their participation was strictly legal; they had a seat at the table but were not active contributors to the plan.

Local and Political Support

All interviewees agreed that during the creation of the plan, they felt that staff received support from political leaders. The county commissioners are described as being "unequivocal about what they wanted," and that they work well together (Anonymous Interviewee 5C, 3/19/2015). All interviewees emphasized that the support and determination of two county commissioners as key for the success of this plan.

Staff Capacity

The equivalence of approximately 2 county staff members worked on this HCP. All interviewees were interested in working on the plan, but only 2 of the three interviewees felt they had adequate time in their schedules to work on it.

Staff Opinions

They also all believed at the time of the HCP's creation that the plan would provide additional funding for conservation, increase economic certainty for residents, and provide an efficient means for development in the vicinity of protected habitat.

Determining the Covered Species

With one exception, all of the species that were listed as endangered at the time of the HCP were included in the plan. At the time of HCP creation, there were three endangered karst invertebrates as well as two endangered birds in this county. According to one interviewee, one of the karst invertebrate species was in an area that was already heavily developed, but it also had a number of preserve areas too, so it was not reasonable to create a conservation plan for that one species (Anonymous Interviewee 5A, 3/4/2015). There was also at least one salamander that was on the candidate list but had not been listed.

The salamander that was a candidate for listing became an issue of contention between the county, their consultants, and the USFWS because at the beginning of the process, the regional USFWS office did not convey that the species was likely to be listed over the course of the 30 year plan, so the consultants did not include it as a covered species. However, after the Center for Biological Diversity filed a lawsuit against the USFWS in 2011, several years after the completion of this HCP, the USFWS did list the salamander as threatened, so Williamson County officials felt betrayed (Anonymous Interviewee 5B, 3/17/2015).

Both of the consultants who helped create this HCP mentioned that recovery plans for the karst invertebrates were important for developing the plan, and one even said that they provided the plan's "roadmap to success" (Anonymous Interviewee 5B, 3/17/2015). This is because they made the plan process simpler because the recovery plans acted as a guidebook for how the preserves should be constructed for the karst invertebrates.

The Mitigation Strategy

At the time of creation, two of the interviewees said that the group considered all three mitigation options: permittee-sponsored mitigation (i.e. the onus falls on the private landowner), county-sponsored acquisition, protection, or enhancement, and third party-sponsored habitat conservation banks. They chose a county-sponsored, voluntary plan because it was the most cost effective (Anonymous Interviewee 5A, 3/4/2015). As one interviewee stated, "What the structure of this HCP allowed, was to set up nice preserves and in exchange we'll be able to pave everything else. Because most of the constituents were concerned with doing well in their development projects and not having their land valued negatively" (Anonymous Interviewee 5C, 3/19/2015).

The mitigation measures are in Chapter 5 of the plan. For the karst species, the plan states that the county will purchase or acquire 700 acres of Karst Fauna Areas (KFAs), establishing three KFAs for each species, as the recovery plan suggests, by year 17 of the plan (SWCA Consultants 2008, p. 5-7). The plan also mentions that roughly 890 acres of conservation areas would probably qualify as FWS suitable habitat for the karst species, and that to enhance recovery even further, they will acquire an additional six KFAs, totaling 240 acres (SWCA Consultants 2008, p. 3-11, 5-10). Part of the motivation for bringing in additional KFA's is to prevent the need to list an additional 19 karst invertebrates (SWCA Consultants 2008, p. x). This brings the total amount of karst invertebrate conservation area to roughly 1,830 acres.

For the bird species, the plan states that for one of the species, the county will purchase 1,000 acres of conservation bank credits to mitigate on a range of 0.5:1 to 2:1 (conservation to development), with 1:1 being the most common, depending on whether the impact is direct and the specific circumstances. For example, if the county feels that the impacted habitat is of high quality, it reserves the right to require a mitigation ratio of 2:1 (SWCA Consultants 2008, p. x). After these 1,000 acres are used up, the county will determine whether to establish a preserve for the species, create a habitat conservation bank, or utilize an alternate out-of-county bank. For this avian species, the county has approximately 34,465 acres of potential habitat.

For the other avian species, the county agrees to assess its mitigation funds "annually to use these accumulated funds to restore, enhance, and manage protected vireo habitat," again for the most part on a 1:1 ratio, though sometimes 2:1, within or outside the County (SWCA Consultants 2008, p. 5-4). For this species, the county has an estimated 4,267 acres of habitat.

Funding for Drafting the Plan

For the drafting of the plan, the county utilized its own funds as well as a Fish and Wildlife Service Section 6 grant. The county staff member also mentioned that some funds, around $20,000, came from private entities, such as developers and surveying firms, and that the state, such as the Department of Transportation, contributed funds as well. Quasi-governmental agencies, such as school districts, also contributed. As in other cases, the county found out about USFWS Section 6 grant money through Fish and Wildlife Service, but in this case, instead of USFWS directly approaching the county, it was the attorneys and consultants who first heard about the grant and approached the county with the idea (Anonymous Interviewee 5C, 3/19/2015). This circumstance is probably due in part to the fact that multiple HCPs had already been started in the area, so the consulting and legal community were already familiar with them. As for the other smaller sources of funds, county officials were responsible for securing these grants through their relationship with the Texas Department of Transportation and outreach to other local leaders, such as mayors and city school district superintendents.

Funding for Implementing the Plan

When determining the mitigation fee structure, it was important in this conservative county that there was not going to be a stealth tax, especially because at the time of the plan's creation, according to one interviewee, a citizen's advisory committee was spreading rumors that there was going to be a new tax (Anonymous Interviewee 5A, 3/4/2015). Private sector participation in the plan is voluntary, and one of the interviewees stated that this characteristic was one of the key factors leading to the success of this plan (Anonymous Interviewee 5A, 3/4/2015). The plan states:

> "Funding for this RHCP will be generated from five primary sources: 1) participation (mitigation) fees collected from participants; 2) return on endowment investments; 3) County land acquisition funds for parks and open space, provided a public access plan is in place; 4) County advance funding from road improvement mitigation funds; and 5) a Tax Benefit Financing (TBF) program" (SWCA Consultants 2008, p. xv).

If a landowner chooses to participate, Williamson County assesses their potential impacts to both bird habitat and the karst areas, and based on that they pay a participation fee. For impacts occurring within 50 feet of a known cave footprint are the highest, at $400,000/cave. For impacts that occur between 50 and 345 feet of a known cave footprint, the fee is $10,000/acre. For impacts on undetected caves and for any impacts on caves due to disturbance over 345 feet from the caves footprint, the participation fee is $100/acre (SWCA Consultants 2008, p. xii).

The participation fee for one of the bird species is $7,000/acre for mitigation credits, and the participation fee for the other species is $5,000/acre of impact. The plan also states that "[p]articipant land contributions that will contribute to RHCP objectives for acquisition of karst and/or bird preserves can be accepted in lieu of participation (mitigation) fees" (SWCA Consultants 2008, p. xiv).

One of the interviewees explained that through the TBF program, for all participating projects, 15% of the increase in property value, which occurs once the land is put into development, is applied against the increase in taxable rate and dedicated to the implementation funding of the HCP. Thus, the private landowner does not see an increase in their taxes. A county staff member stated that the county aims to have an adequate amount of funding by 20-22 years after the initiation of the HCP so that they will be able to discontinue the tax (Anonymous Interviewee 5A, 3/4/2015). He also stated that funding the plan based on taxes works in Texas, potentially unlike other states, because property tax is already a significant source of funding for county governments in Texas (Anonymous Interviewee 5A, 3/4/2015).

VI. Discussion

A. Cross-County/Regional Analysis

1. Logistical and Administrative Support from Other Organizations and Agencies

In four out of the five cases, the relationship with the USFWS was positive. The exception was Williamson County, where a poor relationship stemmed from a combination of "personality issues" at the regional USFWS office as well as the county feeling blindsided by the listing of a salamander species the regional office had informed them would probably not be listed in their thirty-year permitting period.

With the exception of one case, the USFWS assisted the counties and regions with the Section 6 grant application process, and in most cases the USFWS also was responsible for informing them about this funding. In most cases, the USFWS assisted with biological assessments of the species and helped determine what species and activities to cover; in the Pima County case, USFWS staff played an active role in the scientific advisory committee. Additionally, most of the interviewees in all of the cases said that the USFWS helped coordinate with other governmental agencies so that all regulatory requirements were met. In only one county did the USFWS service actually help write the plan; in the other cases, they only suggested (or mandated) edits.

These findings confirm that the creation of these plans requires a high dependence on FWS, which is not an ideal situation for an agency that is understaffed and under-resourced (Callihan et al. 2009, p. iv). In a workshop summary on Multiple-Species Habitat Conservation Plans that took place in 2000, the author mentions that one of the primary requests from workshop participants was a revised HCP handbook that provides better guidance (Morrison 2000, p. S4). A USFWS staff member interviewed for this report mentioned that through the USFWS National Conservation Training Center, conservation planning is offered approximately two times a year, and HCP training is one of the programs that this center offers.[1] There is no direct link to information about this training on the Endangered Species section of the USFWS website, however. Though the interviewees did not explicitly state that they wished the USFWS released more guidance, if the USFWS wanted the HCP process to be truly driven by the applicant, it would help conservation efforts at the national level if it released on its website, at the very least, a checklist of typical components of regional HCPs and what a county or regional HCP applicant can expect during the HCP creation process.

Further, an independent evaluation of the HCP program produced several suggestions for the USFWS, including:

> 1) Clarification of the allocation of roles and responsibilities between the applicant and USFWS. This evaluation suggests that the USFWS adopt a better "partnership" approach by providing more guidance, however the feasibility of this for USFWS staff is questionable given USFWS's capacity. Nevertheless, this

[1] Information about this training program can be found at http://training.fws.gov/courses/programs/policy-planning/

evaluation did find that "the most common suggestion for program improvement among HCP applicants is that FWS increase the availability of experienced personnel to work on the program."

2) Better explanation of the criteria for approving mitigation strategies

3) Established, realistic expectations for the timeline and cost of HCP development

4) A pre-defined dispute resolution mechanism should be put into place. This would help alleviate the "personality" issues interviewees alluded to (Callihan et al. 2009, p. iv-v).

The state agencies played varying roles in the HCP process, ranging from full engagement in California, to merely an obligatory seat at the table in Texas. Additionally, in two cases, Benton County and East Contra Costa County, the local water council played a role in the creation of the HCP because an endangered species fell under those agencies' jurisdiction. In Benton County, for example, the local water council went as far as assisting with educating private landowners about the HCP process.

2. Local and Political Support

For all of the plans, local and political support, especially early stakeholder engagement, was key for the success of the plan. The reason for local support varied; for example, in the more liberal states it was a conservation and "quality of life" sentiment, and in the conservative Williamson County in Texas, the support came from a desire to maintain the Texan culture of open lands and ranching, as well as a desire to profit from the rapid expansion of the greater metropolitan area of Austin.

Political support often arose because a major project needed to be completed and an endangered species was hindering it; for example, in Williamson County it was a shopping mall, and in the Coachella Valley it was the creation of an interstate highway system.

For three of the five cases (Benton, Coachella, and Pima County) local support also came in the form of a scientific advisory committee. Many of these individuals donated their time to create a robust conservation strategy for the region.

As important as political and community support is for the success of these plans, previous research has stressed that there needs to be a hierarchy and coordination among stakeholders who support the plan, or their contributions and suggestions might elongate the HCP process to a point that the plan might collapse, as almost occurred in Coachella Valley. An investigation into factors of success for multi-agency HCPs in California at the UC Irvine School of Law noted that successful governing structures have clear and concrete avenues for coordination among many stakeholders (Camacho 2015, p. 28).

3. Staff Capacity

Table 8: 1-4 interviewees per case provided estimates of the full-time equivalent number of individuals needed to complete these plans at the county or regional level. For Pima County, where planning has taken over 15 years, interviewees found it impossible to provide an estimate for the full-time staff equivalent.

	Full-Time Equivalent Staff Requirements for HCP	Length of HCP process (years)	Did county or regional staff have enough time in schedule for HCP?
Benton	1.5-2.5	4-5	no
Coachella Valley	4	15	yes
East Contra Costa	1.5	5	1 yes, 1 no
Pima	NA	15	yes
Williamson	2	4-5	yes

For at least one of the cases, the success of the HCP was due to county-level staff efforts. The approximate number of full-time individuals who worked on the plan at the county level, for the plans that took approximately five years, was two staff members (Table 8). The sentiments were mixed regarding whether the staff felt they had adequate time in their schedules to dedicate to the creation of the HCP, but the majority of staff felt they did have time in their schedules (Table 8).

4. Staff Opinions

Staff opinions about the HCP varied not only across the cases, but also within the cases over whether at the time of creation, they felt the HCPs would increase funding for conservation, increase residents' economic certainty, and increase the efficiency of development near protected habitat. Most likely variance between cases was due to staff reflecting the local sentiment about the HCP; if the local community valued the plan for its conservation, the staff felt it would bring money for conservation, but maybe it would not help streamline development, for example. Variance within cases was possibly due to the fact that for the HCPs that took over a decade, individuals came on to the projects at different times and therefore had different perspectives.

5. Determining the Covered Species

The Coachella Valley MSHCP and the Pima County HCP used a form of a scientific advisory committee, primarily made up of academic researchers and species experts, to decide which species to include in the plan. East Contra Costa County and Williamson County hired a private consultant, and Benton used a scientific advisory committee as well as a non-profit consultant to complete their plan.

This research illuminated an interesting trend during the creation of these HCPs: it is typically the Fish and Wildlife Service that narrows the scope of species, i.e., the number of species that the plan covers. That is, even if, for example, a consultant working on an HCP has put in the time and resources to gather data on 100 species that the county would like to include in its HCP, it is not uncommon for FWS staff to come back to the county after they receive of a draft of the HCP and say that this number of species is too many. A USFWS Region 2 biologist stated that narrowing down the number of species occurs for several reasons:

1) The USFWS is unsure whether the applicant will be able to appropriately mitigate take for this species; sometimes, in California, for example, species require habitat so specific, such as a vernal pool, that mitigation is impossible.

2) Take for that species is likely for only very specific activities or in certain areas of the county or region, so USFWS will suggest the species be removed from the county-wide plan so that these species are handled on a case-by-case basis only.

3) More broadly, there is insufficient data on the species, for example, how much it will be impacted (Anonymous Interviewee 6A, 4/17/2015).

In all of the cases, the counties and regions either included, or at least considered including, species that were not listed at the time of the drafting of the HCP but were candidates for listing. This is because all of the plans last for at least 30 years, so the preparers of the plan wanted to act preventively. That is, if they covered a candidate species in their HCP and then it became listed during the permit time, they would not need to submit a plan amendment, which would take more time and resources and potentially halt development projects. Additionally, by including species that were candidates, the counties and regions could potentially help a species recover to the point that it is never listed, which, again, would save money and resources.

As for the importance of having designated critical habitat and recovery plans, the results were mixed; some individuals were not even aware if the species in their HCPs had recovery plans and designated critical habitat, while others felt these plans were key for the success of the HCP completion. The scale of the recovery plans might affect whether they are important or not to the plan; one interviewee in California mentioned that if the recovery plan is state-wide for a species, it can be unhelpful because it is not specific enough (Anonymous Interviewee 3A, 2/19/2015). In contrast, in Williamson County, the recovery plans for the karst invertebrates were invaluable for the success of the plan. The scale of these plans, however, only included two counties, including Williamson, because these species are endemic to the area (SWCA Consultants 2008, p. 5-8).

6. Funding for Drafting the Plan

Every county or regoin used a USFWS Section 6 grant to write their plan. It is important for the USFWS to know how key of a role they have played in providing the money necessary to successfully create these plans. This is especially valuable information since research shows that there are considerable challenges to acquire funding for area-wide HCPs, particularly those that promote conservation beyond the mitigation of the direct take of planned development (Camacho 2015, p. 42).

7. The Mitigation Strategy and Funding for Implementation

Table 9: Comparison of Mitigation and Funding Mechanisms for Five Cases

	Lands Available for Conservation	Expected Private Development Covered by Plan	Mitigation Funding Mechanism	Voluntary Participation for Private Developers?
Benton	500 acres of prairie habitat.	1.41 acres	100% public funds	Yes
Coachella Valley	Approximately 587,000 acres, made up of existing conservation lands protected by local, state, or federal agencies or non-profit conservation organizations	Unspecified	Varies by participating party, but plan states that return on endowment investments (public funds) are the primary sources of funding for the implementation of this plan.	No
East Contra Costa	23,800 acres, with the potential to cover 30,000 acres.	13,000 acres	The public pays 57% and new development pays 43% of the cost, under the "initial urban development scenario." Development will pay through fees on covered activities (required for permit coverage under the plan).	No
Pima	County already has lands under their jurisdiction or they are leasing lands to meet the need for 116,000 acres.	36,000 acres	Primary source of funding is from county, in the form of general obligation bonds and a flood control district tax levy, though there is also a participation fee for developers	Yes
Williamson	Roughly 1,830 acres for 2 species, but unspecified for the other 2. The county will purchase some species credits for the avian species they are covering.	18,000-26,000 acres	Primary source of funding is from developers, in the form of participation fees, followed by county funding, in the form of return on endowment investments	Yes

Table 9 provides an overview of the mitigation strategies the counties and regions pursued; in all the case studies, the counties and regions chose to manage their own reserve lands for mitigation because they determined that was the most cost effective way to complete mitigation. With the exception of Williamson County, which purchased credits from a bank in a neighboring county in order to meet some of the mitigation requirements for its expected

development, none of the plans utilized habitat conservation banks. There were some cases where a private landowner or developer could determine their own mitigation strategy, but that was the exception to the county or regional-planned mitigation. The mitigation ratios varied for each plan, which primarily depended on the quality of the impacted habitat, the quality of the habitat used for mitigation, as well as the conservation status of the land used for mitigation.

The funding mechanism for all of the cases varied also (Table 9); three cases had the taxpayers pay in part; for example, East Contra Costa County used a fair share analysis to determine how to allocate the funding between the public and developers. In Pima County, most of the mitigation was also funded by taxpayers, primarily in the form of general obligations bonds, but private developers in Pima County who volunteer to participate in the HCP will need to pay a participation fee.

Williamson County's HCP is also voluntary for private developers, but in contrast to Pima County, the plan states that its funding depends primarily on the participation fee as well as the Tax Benefit Financing scheme that is taken out of the change in property tax value. In Williamson County, interviewees emphasized that the funding needed to come from developers because in their conservative region they were not going to convince the public to support a plan where taxpayers' funds helped save "cave bugs."

Benton County is the only case where the county fully funded the mitigation, even on private lands, however it is important to note the anticipated scale of take from private development is much less than the scale of impact expected in other cases (Table 9). Its only covered activities on private land are for home, farm, and forest construction that impact one species. An interviewee emphasized that they chose not to cover the development of subdivisions on private property. This individual also pointed out that this is rural property, so the most common situation where the county would cover take on private land was when a family was building a single home (Anonymous Interviewee 1C, 2/11/2015).

Despite these differences in scale, for the two counties where the majority of the funds for plan implementation came from public sources, Pima County and Benton County, interviewees in both mentioned that their plan is primarily funded by taxpayers because their plan endorses an ethic of environmentalism; for example, in Pima County, they based their plan on the Sonoran Desert Conservation Plan, which laid the basis for their robust mitigation ratios; an interviewee stated that they wanted to set an example for conservation in the region.

B. Reasons for HCP Failure

As previously addressed in Methods, this study did not thoroughly investigate the factors leading to HCP failure, only those leading to successful HCP creation. However, at the end of the interviews, several participants from multiple counties and regions, some of whom have worked on multiple HCPs, were asked why HCPs fail.

Several interviewees mentioned time as a reason why HCPs fail to be completed at the local government level; the staff working on the HCP become drained, either in effort or money, and therefore they are unable to complete the process. An interviewee who has worked with the Region 2 FWS office said that the process becomes tiring when people trying to write the HCPs need to deal with "personality issues" in the Fish and Wildlife Service offices. In this interviewee's experience, regional offices vary in their "ease of cooperation," as he put it (Anonymous Interviewee 5B, 3/17/2015).

Several other interviewees mentioned that the scope and goals of the HCP influences the time it takes; for example, one interviewee in Pima County said the reason why their HCP has taken 15 years, which in many cases would have led to abandonment of the HCP, is because they are aiming for landscape-level conservation and the Fish and Wildlife Service does not have a lot of experience with HCPs of this scope (Anonymous Interviewee 2A, 2/9/2015). Another interview stated, "I have seen plans fail that are too broad; they cover too many species, they cover too much land, they just are too big…they are too ambitious." He clarified this statement by saying that landscape-level conservation is important, but sometimes there's "a tendency to try to fold everything into it…to wrap too many regulations into it, like clean water compliance…and while that's a great goal, it bogs the plan down… it's just too complex." He concluded by saying, "The bigger the scale, the more focused it needs to be," for example, focusing on a smaller number of species, but still at a larger scale (Anonymous Interviewee 3C, 3/5/2015). Another interviewee had a different perspective, but still alluded to the issue of scope: "Wildlife agencies want to make [HCPs] better…but better doesn't mean it should be longer…and I worry that ours was a fast one and it took 5 years, and that's a long time." He said it is difficult to keep the momentum going by continually editing the HCP and drawing out the process, stating that "perfect is the enemy of the good in the HCP process…you end up with a morass of tangled and contradictory provisions" (Anonymous Interviewee 3D, 3/2/2015).

Another interviewee who works for the California Department of Fish and Wildlife mentioned that HCP failure is due to weak commitment of the public and poor management; he said oftentimes failure is due to the county "using consultants that aren't willing to be responsive to agency input and submit products that aren't helpful or aren't responsive to agency concerns." He added that sometimes consultants try to downplay the impacts and skimp on the conservation (Anonymous Interviewee 3B, 2/23/2015).

VII. Conclusions

This analysis showed that some state agencies, such as the California Department of Fish and Wildlife, played a large role in the HCP creation process, while others were less involved. Also, because the length of time for HCP creation varied from approximately 5 to 15 years, the number of staff from the county or region that were necessary to complete these plans varied. However, for the plans that took only around 5 years, approximately 2 full time staff from the county were needed. Staff opinions regarding the plans, e.g., whether they felt the plans would generate funding for conservation, also varied; most likely staff's sentiments reflected the local community's values. Despite differences between the cases, this analysis illuminated several factors that contributed to successful HCP creation:

- A cooperative relationship between the county or region and the USFWS appears important. The relationship between the local governing body and the US Fish and Wildlife Service (USFWS) office was positive in four out of the five of these successfully completed cases.
- Local and political support, especially early stakeholder engagement, was important in all cases.
- A scientific advisory committee or a consultant was necessary to determine what species to cover in the plan.
- Across all cases, USFWS Section 6 grants were the primary source of funds.
- The most effective way to handle mitigation at this scale was through utilization of the county or region's own reserve lands, but the funding mechanism for this type of mitigation varied.

The additional exploratory analysis provided insight into three important factors leading to HCP failure. The first is delays at the regional FWS level due to miscommunication and

tensions with the regional or county staff. The second occurs when HCP preparers make the scope of the HCP too broad. And the third results from poor project management and HCP preparers who are not responsive to USFWS input.

VIII. Acknowledgements

I would like to thank the following individuals for their assistance with this project.

- Dr. Lydia Olander, Nicholas Institute for Environmental Policy Solutions
- Mr. Sam Baraso, Willamette Partnership
- Dr. Bobby Cochran, Willamette Partnership
- Dr. Christopher Galik, Nicholas Institute for Environmental Policy Solutions
- Dr. Charlotte Clark, Nicholas School of the Environment, Duke University
- Dr. Amanda Flaim, Sanford School of Public Policy, Duke University
- Focus Group Interviewees
    - Dr. Timothy Male, Mission: Wildlife
    - Mr. Jake Ya-Wei Li, Defenders of Wildlife
    - Ms. Sara Vickerman, Defenders of Wildlife
    - Ms. Lisa Belenky, Center for Biological Diversity
- 17 Anonymous Interviewees

IX. Works Cited

Alagona, P., S. Pincetl. (2008). The Coachella Valley Multiple Species Habitat Conservation Plan: A Decade of Delays. *Environmental Management, 41,* 1-11.

Benton County Comprehensive Plan. (2007). Additional Adopted Documents. Retrieved from http://www.co.benton.or.us/cd/planning/documents/cp-additional.pdf

California Contra Costa County (2015*). 3: Land Use Element.* Retrieved from http://www.contracosta.ca.gov/documentcenter/view/30913.

Callihan, D., D. Kleiman, J. Tirnauer. (2009). *An Independent Evaluation of the U.S. Fish and Wildlife Service's Habitat Conservation Plan Program.* Retrieved from http://www.familyforestfoundation.org/downloads/hcp/papers/MSI%20HCP%20Evaluation%20Report%20-%20Final%209%2022%202009.pdf

Camacho, A., E. Taylor, M. Kelly. (2015). UCI Law Center for land, Environment & Natural Resources. (2015). *Lessons from Area wide Multi-Agency Habitat Conservation Plans in California.* Retrieved from http://www.law.uci.edu/academics/centers/cleanr/CLEANR-HCPReport-2015march.pdf.

Center for Biological Diversity (2015*). Landmark Agreement Moves 757 Species Toward Federal Protection.* Retrieved from http://www.biologicaldiversity.org/programs/biodiversity/species_agreement/.

Dudek. (2014). *Proposed Major Amendment to the Coachella Valley Multiple Species Habitat Conservation Plan and Associated Natural Community Conservation Plan.* Retrieved from http://www.cvmshcp.org/Plan_Documents.htm.

Economic & Planning Systems. (2014). *Executive Summary: Economic Effects of Regional Habitat Conservation Plans.* Retrieved from http://www.epsys.com/wp-content/uploads/2014/05/White-Paper_3.18.14_ExecSum.pdf

George, S. and W. Snape. (2010). *Endangered Species Act: Law, Policy, and Perspectives.* The American Bar Association. Retrieved from http://www.biologicaldiversity.org/publications/papers/StateEndangeredSpeciesActs.pdf

Jones & Stokes. (2006). *East Contra Costa County Habitat Conservation Plan and Natural Community Conservation Plan.* Retrieved from http://www.co.contra-costa.ca.us/depart/cd/water/HCP/archive/final-hcp-rev/final_hcp_nccp.html.

Kaye, T, C. Menke, M. Michaud, R. Schwindt, L. Wisehart. (2010). *Benton County Prairie*

Species Habitat Conservation Plan. Retrieved from http://www.co.benton.or.us/parks/hcp/.

Morrison, M. (2000). Introduction: Facilitating Development of Multiple-Species Conservation Reserves and Habitat Conservation Plans: A Synthesis of Recommendations. *Environmental Management, 26, Supplement 1,* pp. S3-S6.

Pima County. (2012). Multi-species Conservation Plan for Pima County, Arizona: Public Draft. Retrieved from http://www.pima.gov/cmo/sdcp/mscp/mscp.html.

Pima County Arizona. (2015). The Sonoran Desert Conservation Plan. Retrieved from https://webcms.pima.gov/cms/One.aspx?portalId=169&pageId=52654.

Simons, E. (2014, May 6). Interior Secretary: Contra Costa Habitat Plan a National Model. *Bay Nature.* Retrieved from http://baynature.org/2014/05/06/interior-secretary-contra-costa-habitat-plan-national-model/.

Ruhl, J.B., A. Glen, and D. Hartman. (2005). A Practical Guide to Habitat Conservation Banking Law and Policy. *Natural Resources and Environment, 20(1),* 26-32.

O'Leary, Zina. (2005). Researching Real-World Problems: A Guide To Methods of Inquiry. London: Sage.

Ostermeier, D., D. Bidwell, S. Schexnayder. (2000). Habitat Conservation Planning: Current Processes and Tomorrow's Challenges. *Environmental Practice, 2(02),* 165-175.

SWCA Consultants. (2008). Williamson County Regional Habitat Conservation Plan. Retrieved from http://www.wilco.org/Portals/0/Departments/Conservation_Foundation/WilCo_RHCP_08-08-08_Opt.pdf.

United States Census Bureau. (2015). *State and County Quick Facts.* Retrieved from http://www.census.gov/topics/population.html.

U.S. Fish and Wildlife Service. (2013*). Grants: Overview.* Retrieved from http://www.fws.gov/endangered/GRANTS/index.html.

U.S. Fish and Wildlife Service (2013). *Recovery Plans Search.* Retrieved from http://www.fws.gov/endangered/species/recovery-faq.html.

U.S. Fish and Wildlife Service. (2014*). Cooperative Endangered Species Conservation Fund Grants.* Retrieved from http://www.fws.gov/endangered/esa library/pdf/Section6_grants.pdf

U.S. Fish and Wildlife Service. (2015*). Listing and Critical Habitat.* Retrieved from http://www.fws.gov/endangered/what-we-do/critical-habitats-faq.html

U.S. Fish and Wildlife Service Midwest. (2015). *The HCP Handbook Addendum or "Five Point Policy."* Retrieved from http://www.fws.gov/midwest/endangered/permits/hcp/pdf/HCPAddendum.pdf

Watchman, L.H., M. Groom, and J. D. Perrine. (2001). Science and Uncertainty in Habitat Conservation Planning. *American Scientist 89(4),* 351-359.

Yin, Robert. (2014). *Case Study Research: Design and Methods.* Los Angeles: Sage.

X. Appendix

Survey about HCP process

The following survey was given to anonymous interviewees between January and April 2015. Interviewees read the survey on their computer screen while they provided answers over the phone.

Support in the HCP process

1. How did you first hear about HCP's relevant to your municipality/County?

1. _____ Consultant
2. _____ State Fish & Wildlife Office
3. _____ USFWS
4. _____ Other. If chosen, please describe this process that spear-headed the creation of this HCP:
_____

2. Please check off the ways in which USFWS staff contributed to this HCP:
   a. ___ FWS staff did not play a role in this HCP.
   b. ___ FWS biologists assisted with assessments or information that were required for this HCP.
   c. ___ FWS staff assisted with the grant application process.
   d. ___ FWS staff supported the development of the scope, covered species, and covered activities.
   e. ___ FWS staff helped guide the conservation strategy.
   f. ___FWS staff helped draft (write) the HCP itself.
   g. ___ FWS staff facilitated outreach to additional partners.
   h. ___ FWS staff coordinated so that all regulatory requirements were met with other governmental agencies.
   i. ___ FWS staff contributed in a way not listed here. Please describe: _____

3. Did your office receive assistance from any other nongovernmental agencies or governmental agencies in the creation of this HCP? (Examples: US Forest Service, local conservation organization, etc).
   1. _____ Yes 2. _____No 3. _____ I don't know

If Yes, was this collaboration required, for example, because the species is present on land that falls under that agency's jurisdiction?
   1. _____ Yes 2. _____No 3. _____ I don't know

4. How many staff members at your office worked on the development of this HCP? _____

5. What was the approximate level of full-time employment on the HCP (e.g. 2 people working part-time would equal 1 full-time employee)?: ____

6. Please indicate the extent to which you agree or disagree with these statements, where 1 means you strongly agree and 5 means you strongly disagree.

Support in the HCP process	**(1) Strongly Agree**	**(2) Agree**	**(3) Neutral**	**(4) Disagree**	**(5) Strongly Disagree**
a. Staff in my office received support from political leaders before and					

during the HCP process

b. Regardless of my availability, I was generally interested in working on this HCP.

c. During its creation, I believed this HCP would provide additional funding in my county for conservation.

d. During its creation, I believed this HCP would increase economic certainty for residents.

e. During its creation, I believed this HCP would provide an efficient means for development on protected habitat.

f. I felt I had adequate time available in my schedule to work on this HCP

g. I was willing to work with the Fish and Wildlife Service to complete this HCP.

Financial Questions

7. What sources of financial support were used for the completion of this HCP? Check all that apply.
    a._____ The incidental take permit applicant's own funding
    b._____Fish and Wildlife Service grant
    c._____Private Entity
    d._____Foundation
    e._____ NGO/Non-Profit
    f._____ Federal Agency
    g._____ State Agency
    h._____ Other (Please Specify): _____

8. How did you find out about sources of funding?

Species-Related Questions

9. How did the group decide which species and habitats to include in the HCP?

10. Did the species having designated habitat and/or a recovery plan facilitate the creation of the HCP? How?

Mitigation-related Questions

11. Please check all the mitigation alternatives that your group considered:
a. _____Permittee-sponsored mitigation (i.e. the developers are responsible for mitigation)

b._____County-sponsored acquisition, protection, and/or enhancement
c._____Third party-sponsored habitat banking

12. Why did the group chose the mitigation strategy they did?

13. How did the group working on this HCP decide who will pay for the mitigation?

14. Please check all that apply regarding both the potential for offsite mitigation and the availability of mitigation opportunities.

a. ____ Land was available for acquisition by the applicant for mitigation purposes.
b. ____ Land was already under the applicant's jurisdiction but required enhancement.
c.____ Land was already under the applicant's jurisdiction, and only needed a guarantee of conservation permanence (i.e. conservation easement, no enhancement necessary).

Timing

15. To the best of your knowledge, how long, from the beginning of the HCP process, to submittal of the HCP to Fish and Wildlife Service, did this HCP planning period take?

a. < 1 year
b. 1-2 years
c. 3-4 years
d. 4-5 years
e. > 5 years

Concluding Remarks

16. Please describe what you believe the biggest factors were regarding the successful completion of this HCP.