

Documents Reviewed for Off-Site Mitigation Valuation Methods and Mitigation Structures

** document topics: banking, in-lieu fee program (ILF), permittee-responsible, compensation rates, wetlands, ecology, habitat, special status species, individual project example, general off-site mitigation*

Data/Document Title	Source / Author/Year	Type of Information	Document topic(s)	Summary of Information and Potential Use
RIBITS (Regulatory In lieu fee and Bank Information Tracking System)	US Army Corps, EPA, USFWS, 2012	Data Portal on Conservation Banks and mitigation	banking, ILF, ecology	RIBITS, or, Regulatory In lieu fee and Bank Information Tracking System, is a data portal maintained by the US Army Corps that: "allows users to access information on the types and numbers of mitigation and conservation bank and in-lieu fee program sites, associated documents, mitigation credit availability, service areas, as well information on national and local policies and procedures that affect mitigation and conservation bank and in-lieu fee program development and operation." Links to numerous types of mitigation strategies. Provides basic information on ratios
Final Environmental Assessment, Finding of No Significant Impact, and Regulatory Analysis for Compensatory Mitigation Regulation	US Army Corps, 2008	Chapter 4 discusses costs associated with mitigation	banking, ILF, permittee-responsible, wetlands, ecology	"The provisions of this rule will help improve the quality of compensatory mitigation, by incorporating recommendations of the National Research Council (2001) and others to improve the planning, development, implementation, and performance of compensatory mitigation projects." The EA discusses basics of ecosystem services and lists the cost per acre for the ecosystem services, as provided in Costanza (1997). If mitigation is required, the permittee often has three choices: permittee-responsible mitigation, mitigation banks, or in-lieu fee mitigation. A review of these three costs can be found on pg 51 of the report.
Clark County Multiple Species Habitat Conservation Plan and Environmental Impact Statement For Issuance of a Permit to Allow Incidental Take of 79 Species in Clark County, Nevada	Multiple agencies, 2000	Complete conservation plan	special status species, habitat	This document provides an broad, ecosystem-level species and habitat conservation plan for 79 species within Clark County, Nevada. Mitigation is discussed, and the document provides guidelines on how to conserve species or habitat for species - 79 in total. It does not address mitigation costs or structures. There is ample information on how to physically conserve habitat in the various environments within Clark County, but establishing a fee schedule of or conservation bank was not discussed.

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The REAT Mitigation Account MOA between the Renewable Action Team Agencies and the NFWF	Multiple agencies, 2010	MOA establishing NFWF accounts	ILF	The MOA explains the responsibilities of the REAT agencies and NFWF for offsite mitigation accounts or funds. Mitigation is discussed, but only in terms of mitigation structures, not mitigation methods or resource areas.
Compensation for the Desert Tortoise: A Report Prepared for the Desert Tortoise Management Oversight Group by the Desert Tortoise Compensation Team.	Desert Tortoise Management Oversight Group for the BLM and FWS, Nov 1991	Report document	special status species, compensation rates	The report discusses offsite mitigation-compensation for loss of desert tortoise habitat. The document describes the purpose and need for compensation, how to determine when compensation is needed, the factors used in determining compensation rates, the process for determining compensation rates, how to convert compensation rates to acreage or funding, compensation in special situations and uses of compensation. There is no discussion of off-site mitigation structures.
U.S. FWS Guidance for the Establishment, Use, and Operation of Conservation Banks	FWS, 2003	Guidance document	banking, special status species	This is a guidance for conservation banks established to protect special status species. It is to be used for conservation bank proposals--describes what a conservation bank is, how it is organized, authorities, conservation strategies, describes the credit system and the relationship of the bank to mitigation requirements, long term management and monitoring, bank agreements.
Raven Management Plan	FWS, 2010	summary document	special status species, ILF	The FWS/BLM document describes onsite mitigation of desert tortoise by preventing raven predation. It summarizes the basis for the REAT Raven Control Account, which includes a description of the specific need for mitigation related to Desert Ravens and the methodology by which FWS/BLM established the operational parameters for this account under the NFWF MOA. While the Raven Control Account is an example of an in-lieu fee account, it is not considered off-site mitigation.

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Starting Point Maps REAT Conservation Opportunity Areas	REAT, multiple agencies, 2010	summary document	general off-site mitigation, habitat	REAT has identified areas Conservation Opportunity Areas (COAs) as those areas with high biological value in California. These areas support key populations or connections between key populations. As such, private land acquisition or habitat enhancement on public lands would be encouraged within these zones. The COAs can be considered when siting future offsite mitigation locations.
Lower Colorado River Multi-Species Conservation Program	Multiple agencies, 2005	Complete conservation plan	special status species, habitat	The LCR MSCP is a comprehensive plan, it covers 9 conservation areas and provides habitat for 6 ESA, 20 covered species and 5 LCR evaluation species. The plan provides conservation measures specific to each of the 31 species: avoidance, minimization, research and monitoring, and conservation area management measures. The plan is consistent with mitigation measures identified in the 1991 Compensation for Desert Tortoise document. The LCR MSCP acquired 230 acres of unprotected occupied desert tortoise habitat. The acquired habitat will be transferred to an appropriate management agency for permanent protection of species' habitat. There is also acquired habitat for the flat tail horned lizard. The LCR MSCP will provide \$10,000 per year until 2030 to an ongoing Conservation Program or other entity approved by the USFWS to implement conservation activities for the threecorner milkvetch and sticky buckwheat. Similar for the humpback chub and relict frog. The rest of the species list avoidance and creating habitat. There is no specific discussion of mitigation structures.
BLM Instruction Memorandum 2008-204 Offsite Mitigation	BLM, Sept 2008	Instruction Memorandum	general off-site mitigation, ILF	The IM outlines policy for the use of offsite mitigation for authorizations issued by BLM; describes when offsite mitigation is appropriate; describes in-kind vs. out-of-kind mitigation and in-lieu fee funds; describes how management of non-federal lands must receive adequate management and protection. There is no discussion of mitigation banking, nor are there cost estimates for off-site mitigation.

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Banks and Fees: The Status of Off-site Mitigation in the United States.	Environmental Law Institute, 2002	Report document	ILF, banking	Document includes background on compensatory mitigation, in lieu fees and mitigation banking; the regulatory context for wetland mitigation banking; bank organization and planning considerations; the status of wetland mitigation banking (geographical distribution, siting, bank approval, mitigation methods, pricing, wetland valuation and crediting, credit release, financial assurances, performance standards in practice, design standards, operation and oversight); umbrella instruments and multi-site banks; organization of in-lieu fee mitigation programs; the status of in-lieu fee mitigation (number of programs, status of programs, site selection, fee assessment, replacement ratios, service areas, timing, use of funds); gray-area and ad hoc mitigation; future of wetland mitigation banking and in lieu fee programs.
In-Lieu Fee Mitigation: Model Instrument Language and Resource	Environmental Law Institute, 2009	Report document	ILF	The document includes background and process for the prospectus; model instrument (service area, accounting procedures, provisions stating legal responsibility to provide compensatory mitigation, default and closure provisions, reporting protocols, compensation planning framework, advance credits, method for determining project-specific credits and fee schedules, in lieu fee program account, transfer of long-term management responsibilities, financial arrangements for long term mangement).
In Lieu Fee Program Instrument	State of Maine, Maine Department of Environmental Protection, 2011		Program document	The document is outlines the administration of the ILF program, establishes the MDEP as the qualified ILF program sponsor and TNC as the current program administrator. Document contains: statement of program need, qualifications of program sponsor and administrator, provision of legal responsibility, describes the Maine Natural Resource Conservation Program (establishment and operation, conservation fund, determination of fees and credits, grant application review committee, interagency review team, program operations and procedures, reports and protocols); compensation planning framework

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<p>Compensation for the Desert Tortoise: A Report Prepared for the Desert Tortoise Management Oversight Group by the Desert Tortoise Compensation Team</p>	<p>Hastey, et al., Nov 1991</p>	<p>Report document</p>	<p>compensation rates, special status species</p>	<p>The document is a recommendation to the Desert Tortoise Management Oversight Group, describing a proposed set of standards and uses for compensation with respect to the desert tortoise for implementation by BLM, USFWS, and state wildlife agencies. The report includes a standard process to determine tortoise compensation amounts, including values for 5 categories (category of habitat, term of effect, existing disturbance onsite, growth inducement, and effect on adjacent lands). It outlines how to determine compensation rates, the compensation amounts for habitat acquisition and other purposes, discusses compensation fund accounts, and the uses of compensation (habitat acquisition, habitat enhancement, population enhancement, public information and education, and research, studies, and monitoring). Compensation is provided through the direct purchase of privately owned desert tortoise habitat for transfer to conservation management, or the direct payment of funds to an appropriate land management agency or entity for purchase of habitat or other management actions. There is no discussion of off-site mitigation structures.</p>

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Flat-tailed Horned Lizard Range-wide Management Strategy. Flat-Tailed Horned Lizard Interagency Coordinating Committee	USFWS, 2003	Management Plan	compensation rates, special status species	The report was prepared to provide guidance for the conservation and management of sufficient habitat to maintain populations and describes the management program, including implementation strategies and future implementation schedule, habitat management, mitigation, compensation, monitoring program, and restorative measures. Compensation is determined using a multiplying factor for disturbance. Multiplying factors are determined using values for the following: adjacent habitat impacts, growth inducing effects within flat-tailed horned lizard habitat, existing disturbance on site, and duration of effect. Project proponents would need to replace the acreage or adjusted acreage lost from the project's impacts or can convert acreage to a monetary equivalent (including administrative costs) to replace acreage or adjusted acreage. The per acre dollar figure for compensation fees will be based on the cost of acquiring land. There is no discussion of off-site mitigation structures.
Adjustment for 2012 Fees Collected under Biological Opinions.	USFWS, 2012	Memorandum	compensation rates, special status species	The memorandum provides the adjustment for inflation relative to future compensation fees proposed and assessed for disturbance of Mojave desert tortoise habitat. The fee adjustment is based on the Bureau of Labor CPI-U and any fees paid after March 1, 2012 would be subject to the rate of \$810 per acre.
Interim Mitigation Strategy, Appendix C: The Renewable Energy Action Team Mitigation Account Memorandum of Agreement Between the REAT Agencies and the NFWF	CDFG and CEC, 2010	MOA	general off-site mitigation	The MOA establishes a financial account to be held, managed, and administered by the National Fish and Wildlife Foundation to receive monies paid in connection with impacts associated with renewable energy projects subject to the jurisdiction of one or more of the REAT agencies. These monies will be used to accomplish specified conservation, protection, enhancement, or restoration purposes. The MOA does not establish a mitigation strategy or an in-lieu fee program, but identifies the authority, roles and responsibilities of the NFWF and REAT agencies as well as the administration of the account.

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California Senate Bill X8 34, 2010. Appendix E: Interim Mitigation Strategy	State of California, 2010	Interim Mitigation Strategy	banking, ILF, compenation rates	SB 34 establishes two related processes for the CDFG and CEC to help implement specific mitigation actions and permit conditions required to fully mitigate impacts of solar energy projects: advance mitigation or in-lieu fee program. The intent is to pool financial resources from eligible projects needing to mitigate impacts to CESA Listed and Candidate Species and target conservation investments to maximize protection of habitat values, connectivity, and ecological processes in the California desert region. The Interim Mitigation strategy describes affected projects; its relationship to the DRECP; biological setting; conservation goals; Mitigation Target Areas; approach to mitigation; recovery actions; consistency with recovery plans; land acquisition; enhancement and restoration; and compensatory mitigation cost estimation.
BLM; IM No. AZ-2012-031.	BLM, June 2012	Instruction Memorandum	special status species	The purpose of the IM is to establish mitigation policy, including off-site compensation for the desert tortoise and its habitat on public lands managed by the BLM in Arizona, in a consistent manner between the District and Field Offices. The two main concerns regarding desert tortoise are avoiding, minimizing or eliminating loss or degradation of habitat and avoiding or minimizing take of tortoises. The intent of the mitigation policy is to maintain habitat in order to ensure the existence of viable populations and thus reduce the need for listing the species. The policy includes options to provide flexibility in the program and key points from the 1991 Compensation Report that provides for greater consistency between BLM States and other cooperating agencies. There is no discussion of off-site mitigation structures or costing methodologies.

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ICF International Webinar: Mitigation Banking—The Regulatory and CEQA Process	ICF International, Dec 2012	Webinar	banking, ILF, permittee-responsible,	The webinar discussed mitigation banking, in-lieu fee programs, and permittee-responsible mitigation and stressed that mitigation banking was the most preferred method of compensatory mitigation by the USACE, while permittee-responsible was the least preferred method. The webinar also discussed CEQA and Mitigation banking in California. There was no discussion on the cost of off-site mitigation for any of the structures included in the webinar.
California Energy Commission Staff's Transmittal of Updated Renewable Energy Action Team Agency Guidance for Mitigation Cost Estimates and Desert Tortoise Translocation Information.	California Energy Commission/R EAT, July 2010	Guidance document	ILF, special status species	In addition to updated desert tortoise translocation guidance, the REAT agencies have developed a total cost accounting method for calculating acquisition or conservation easement costs for mitigation lands, including costs associated with the purchase transactions, appraisal, escrow, and title insurance. The estimate also addresses costs of initial enhancement, management for ongoing activities such as public access and enforcement; and monitoring the implementation, effectiveness, and compliance of conservation measures with the goals and objectives of the mitigation. A sample cost table is included that includes the total cost accounting.
Conservation Banking: Incentives for Stewardship	U.S. Fish and Wildlife Service, Aug 2012	Website page	banking	The factsheet explains conservation banks, and the role for landowners, developers, and species. The document describes the lands available to become mitigation banks, as well as the federal guidelines issued by the FWS designed to promote conservation banks as a tool for mitigating adverse impacts to species. Lastly, the document discusses the role of management plans, funding of the management of the bank, and how credits are used, the concept of a 'service area,' and which projects are eligible for off-site mitigation using conservation banks. There is no discussion of specific costing issues.

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Development by Design: Mitigating Wind Development's Impacts on Wildlife in Kansas. PLoS ONE Volume 6 Issue 10	Obermeyer et al., Oct 2011	Journal article	general off-site mitigation	The paper identifies areas in Kansas where wind development is incompatible with conservation, areas where wind development may proceed but with compensatory mitigation for impacts, and areas where development could proceed without the need for compensatory mitigation. The authors conclude that 10.3 million ha in Kansas (48 percent of the state) has the potential to provide 478 GW of installed capacity while still meeting conservation goals. The authors propose a 'green certification' for projects that avoid and offset impacts may help to expand the wind industry by encouraging individual projects to avoid sensitive areas. There is no discussion of cost or off-site mitigation structures.
An Approach to Enhance the Conservation-Compatibility of Solar Energy Development	Cameron et al., Jun 2012	Journal article	general off-site mitigation	The paper examines the relationship between renewable energy generation goals and biodiversity conservation in the Mojave Desert. The results showed that there are 200,000 ha of lower conservation value land below 1% surface slope angle and over 740,000 ha below 5% surface slope angle. The analysis suggests that the supply of high quality habitat on private land may be insufficient to mitigate impacts from future solar projects, so enhancing public land management may need to be considered among the options to offset impacts. There is no discussion of cost or off-site mitigation structures.
Wetlands Compensatory Mitigation	EPA, undated	Website page	ILF, banking, permittee-responsible, wetlands	The page explains the role of the CWA in compensatory mitigation; the methods of compensatory mitigation (restoration, establishment or creation, enhancement, and preservation); and the mechanisms for compensatory mitigation (permittee-responsible, in-lieu fees, mitigation banking). This is a brief overview, and does not provide in-depth analysis about the mechanisms--there is no mention of cost.

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Evaluation of Louisiana's Mitigation Program for Impacts to Coastal Habitats	Louisiana Department of Natural Resources, Office of Coastal Management, Sept 2010	White Paper	ILF, banking, wetlands	The document discusses various mitigation options, including: individual mitigation measures (projects), mitigation banking, in lieu fee option. In the context of these options, the following issues are discussed: evaluation of the methods for and implementation of individual mitigation projects and suggestions for improvement; evaluation of permit conditions required for individual mitigation projects, as well as evaluation of protocols for implementation and adequacy of project monitoring; evaluation of mitigation bank process, method of tracking credits, suggestions for tracking credits, assesment of the economic vitality of mitigation banks in Coastal Louisiana Marsh Mitigation Banks; assessment of the functionality of Mitigation Bank Financial Assurances; for the in lieu fee option-evaluation of the correct procedure for use fo the Mitigation Trust fund, the fund level requirements, the process used to implement the in-lieu fee program, and the evaluation of the success of the in-lieu fee funded projects. The document only addresses off-site mitigation for wetland and coastal habitats.
Desert Tortoise Translocation Plan for Fort Irwin's Land Expansion Program at the U. S. Army National Training Center (NTC) & Fort Irwin	Prepared for: U.S. Army National Training Center, Directorate of Public Works; Prepared by U.S.G.S., Western Ecological Research Center, July 2005	Translocation plan	special status species	The translocation plan includes a timeline for activities and a list of items for which permits may be required prior to the commencement of military activities. The objectives of the plan are to: provide for safe, humane and successful translocation of tortoises with minimal impact to desert tortoises; 2) to study ranslocated, recipient, and control animals to learn as much as possible about the ecology, conservation, and management of the desert tortoise; and 3) to define measures of success for translocation and provide metrics to evaluate success over multiple time scales, which we identify for both the short- and long-terms. The plan provides guidance on appropriate translocation timing and procedures, and aspects of tortoise ecology and the habitat that should be studied. There is no discussion of translocation costs.