

## **VI. PLAN IMPLEMENTATION**

Described below are general guidelines related to the NBHCP and specific obligations that will be undertaken by the Plan Operator and the Permittees during the implementation of the NBHCP. The participants who may become Permittees through participation in this HCP include:

- City of Sacramento (Land Use Agency or Land Use Permittee)
- Sutter County (Land Use Agency or Land Use Permittee)
- RD 1000 (Water Agency or Water Agency Permittee)
- Natomas Mutual Water Company (Water Agency or Water Agency Permittee)
- The Natomas Basin Conservancy (TNBC, Plan Operator and TNBC Permittee)

### **A. TERM OF PERMIT**

The Section 10(a)(1)(B) and Section 2081 permits are requested for and will be in effect for fifty years for each Permittee unless terminated earlier in accordance with the provisions of the Plan or governing law. The term of the permits commences on the date the permits are issued. The permits may be renewed if continuing activity in the Natomas Basin so requires, in accordance with all regulatory or statutory requirements then in effect.

### **B. FUNDING**

#### **1. The Mitigation Fee**

With the exception of funding for the planting of trees to mitigate for loss or disturbance of nest trees identified in Chapter V, which is a separate obligation of the Land Use Agencies, Mitigation Land acquisition, enhancement, management, and monitoring activities under the NBHCP will be funded by a one-time, up-front fee (the "Mitigation Fee") to be levied upon an Authorized Development site (in acres) that is subject to mitigation based upon a ratio of 0.5 acres of mitigation land for every 1.0 gross acre of development (the "Mitigation Ratio"). The number of acres of the Authorized Development site will be described in the Urban Development Permit (i.e., a grading permit, notice to proceed, or authorization to commence grading). The Urban Development Permit shall clearly delineate the boundary identifying the parcels to be disturbed by the Authorized Development project. Each gross acre of Authorized Development will pay a Mitigation Fee that funds a half acre of mitigation land acquisition and associated habitat enhancement, management, endowment, administration, monitoring, etc. Table VI-1 below describes the components of the Mitigation Fee and the estimated cost established by the firm Economic Planning Systems (EPS) through its October 2002 fee study prepared for this NBHCP. Mitigation Fees shall be paid on the total gross acres of a development site excluding acres that are either: (1) previously developed land as shown on each local Land Use Agency's "Baseline Map" (see paragraph below); or (2) protected as habitat through conveyance of a conservation easement or fee title to TNBC pursuant to mitigation option #2 as described in this Section (see also Section 4.3 and Section 5.7.4 of the Implementation Agreement).

To ensure the fee is not charged to previously developed areas, the NBHCP Implementation Agreement for the City and the County include detailed maps showing which land parcels are subject to the fee and which parcels are exempt from the fee due to prior development of the site.

Open space remaining within developed areas will count as areas requiring mitigation, unless the USFWS and CDFG approve the use of such areas as suitable for mitigation and such land is transferred in fee to TNBC or is encumbered by a conservation easement in favor of TNBC.

a. Land Dedication or Donation in Lieu of Payment of the Land Acquisition Component of the Mitigation Fee

(1) Individual landowners may donate land to TNBC in lieu of payment of some or all of the acquisition component of the Mitigation Fee. In such cases, TNBC will determine which lands are acceptable, considering location, proximity to urban uses and roads, and current condition. If the amount of land donated to TNBC is less than the mitigation land required for the development project, the landowner is obligated to pay the outstanding balance of the land acquisition portion of the Mitigation Fee. If the amount of land donated to TNBC is greater than the mitigation land required for the development project, the landowner may choose one of the following credit options: 1) receive credit from excess amount of land toward required mitigation land under the NBHCP for future Authorized Development to develop property(ies) owned by the landowner subject to and Urban Development Permit; or 2) transfer credit from excess amount of land toward required mitigation land under the NBHCP for future Authorized Development to develop property(ies) owned by another specified landowner subject to Urban Development Permits. If either credit option is chosen, prior to the transfer of land being finalized, the landowner shall inform the appropriate Land Use Agency and TNBC in writing of their choice to receive or transfer credit and to whom they want to transfer such credit. Credit is based on number of acres of land being transferred and is not based on cost of the land. If the owner chooses to transfer land in lieu of fees, the owner is obligated to pay the non-land acquisition portion of Mitigation Fee. Such land to be dedicated in lieu of acquisition fees must be approved by the Wildlife Agencies prior to acceptance by TNBC.

(2) Notwithstanding other provisions of this Plan, the City of Sacramento and Sutter County each retain the authority to require a developer/land owner to provide Mitigation Land in lieu of payment of the Land Acquisition Component of the Mitigation Fee. Such dedication of Mitigation Land may be required at the sole discretion of the City of Sacramento or Sutter County for proposed development within their respective Permit Areas, and generally would occur as a result of limited availability of Mitigation Land or the inability of TNBC to secure Mitigation Land. Land offered in lieu of payment of the Land Acquisition Component of the Mitigation Fee must comply with the acquisition guidelines of the NBHCP, be approved by TNBC prior to dedication, and must be dedicated prior to authorization by either the City or Sutter for disturbance of land resulting from the associated urban development project.

Related to assurance of adequate funding for operations and maintenance in perpetuity, the NBHCP shall institute the following requirement: a Supplemental Endowment component of the Mitigation Fee shall be collected prior to issuance of an Urban Development Permit in an amount sufficient to fully fund the operation and maintenance, adaptive management, monitoring and changed circumstances obligations for Mitigation Lands in perpetuity, even after Authorized Development is fully built-out. All Authorized Development that has not been issued an Urban Development Permit by September 30, 2000, shall pay this fee. The catch-up fee ordinance shall also include this fee component. This Supplemental Endowment fee will be collected from all development authorized under the NBHCP as applicable and will be used to fund operations and maintenance, adaptive management, monitoring and changed circumstances for the system of reserve lands in perpetuity, particularly after development has occurred and additional fees are no longer being paid.

## **2. Mitigation Fee Amount/Adjustments**

Historically, TNBC has contracted with EPS to complete analysis of the NBHCP fee. Such analysis was the basis for the initial Mitigation Fee under the City of Sacramento 1997 Natomas Basin HCP and for subsequent fee increases under that plan. EPS has now completed a fee analysis update of the implementation costs of this 2003 NBHCP.

EPS has developed a proforma financial model that analyzes the projected revenues and expenditures of the TNBC dependent on a forecast of development of the Natomas Basin and the corresponding habitat mitigation required. Based on various assumptions, the financial model calculates the Mitigation Fee that would be required of new development. The financial model is currently composed of five component funds as described below:

Land Acquisition (LA) Fee Component provides funding for habitat Mitigation Lands acquired by the Natomas Basin Conservancy (TNBC). The costs associated with land acquisition are the costs to acquire the land and transaction costs including legal costs. The fund also provides for a contingency in case land costs spike in any given year prior to updating the fee. Once all land is acquired in order to meet mitigation requirements, this fund will no longer be necessary.

Restoration and Enhancement (RE) Fee Component provides funding for restoring and enhancing Mitigation Lands acquired by TNBC. For example, the creation of managed marsh would be provided for by the revenues generated in the Restoration and Enhancement Fund. Once all land is acquired and subsequent restoration and enhancement occurs, this fund will no longer be necessary.

Administration and Operations & Maintenance (O&M) provides for the on-going operation and maintenance of the Mitigation Lands, including the costs to administer the funds collected from the Mitigation Fees. Revenues for this fund are comprised of Mitigation Fees (until all grading permits are issued), farming income, and hunting revenues. This fund is projected to exist in perpetuity. After year 45, as the finance model is currently structured, the Admin./O&M revenues are supplemented by interest earnings from the O&M Endowment Fund.

O&M Endowment Fund is structured as an endowment, such that fee revenue is accumulated as principal that will earn interest income over time. The interest income is utilized to subsidize funding for the Admin./O&M account after year 45.

Supplemental Endowment Fund is the newest account included in the financial model of the NBHCP. This fund was established to accumulate revenue to allow TNBC to purchase up to 200 acres of land in advance of all fees being paid or to supplement annual purchases in the case that land prices spike dramatically in any given year. The financial model is intended to be a dynamic, fluid analysis of each of these funds and allows for interaction between the funds (excluding the O&M Endowment Fund principal). For example, funds can be transferred to the O&M account into the land acquisition account to provide short term financing of land acquisition. Typically, it assumes that the transfer of funds will be repaid in a subsequent time period.

On-going Operation and Maintenance of the Mitigation Lands in Perpetuity. The interest earnings on the Endowment Fund, not the principal, will be used to funds on-going operations and maintenance of the Mitigation Lands. A nominal interest rate of 3 percent is assumed in the analysis.

**TABLE VI- 1**  
**COMPONENTS OF PROPOSED (2003) MITIGATION FEE PER ACRE DEVELOPED<sup>1</sup>**

Land Acquisition	\$3,775
Restoration/Enhancement/Monitoring	893
Administration O & M	2,850
O & M Endowment Fund	1,900
Supplemental Endowment Fund	408
Fee Collection Administration	201
<b>Base Mitigation Fee/Developed Acre (2003\$)</b>	<b>\$10,027</b>

<sup>1</sup> For funds available to support management of each acre of mitigation land, multiply these figures by two.

Following adoption of the revised NBHCP, the newly established Mitigation Fee that addresses implementation of this NBHCP will be reviewed at least annually on or before March 1 of each calendar year the NBHCP is in effect. The Mitigation Fee shall be adjusted as necessary by the Land Use Agency Permittees to account for inflation or deflation using the Consumer Price Index (CPI) or another suitable index. The Mitigation Fee also will be reviewed at least annually on or before March 1 of each calendar year the NBHCP is in effect and adjusted as necessary to reflect actual operation and land costs in the Basin. Fee adjustments will typically originate with a recommendation from TNBC to the Land Use Permittees, although any party may recommend such an adjustment. All adjustments to the Mitigation Fee within a particular local jurisdiction or jurisdictions must be approved by that affected jurisdiction or jurisdictions. Adjustments to the Mitigation Fee to account for inflation or deflation, or as necessary to maintain the 0.5-to-1 Mitigation Ratio and to meet ongoing management and

monitoring costs, are provided for as part of the Plan's Operating Conservation Program and therefore do not require amendment of the NBHCP or permits. (Each change in any element of the Mitigation Fees shall be documented in the TNBC Annual Report.)

It is acknowledged by the City and Sutter County that TNBC will acquire and manage Mitigation Lands based on the total amount of fees collected, and acres approved for Authorized Development by both Land Use Agency Permittees. Therefore, the failure of either jurisdiction to raise Mitigation Fees in a timely manner and in an amount sufficient to fully implement the NBHCP, including acquisition and management of Mitigation Lands, may result in the inability of TNBC to acquire and manage Mitigation Lands for all Authorized Development approved under the NBHCP. In that event, any shortfall in acquisition of Mitigation Lands or shortfall in funds available to cover the management and other plan implementation costs, shall be attributed solely to the Land Use Agency Permittee which has failed to adjust its Mitigation Fees as necessary to fully implement the NBHCP and may result in suspension or revocation of that jurisdiction's permits. The City and Sutter County further acknowledge that notwithstanding the revocation of their individual federal permits, each remains obligated pursuant to 50 C.F.R. 17.22(b)(8) and 17.32(b)(8) to complete its mitigation obligations with respect to all Authorized Development approved by the jurisdiction prior to the revocation or other termination of its permits.

The Mitigation Fee is based on the funds necessary to assure the establishment of reserve blocks with 25% managed marsh habitat. The Mitigation Fee may also be adjusted periodically at the request of USFWS, CDFG or TNBC to account for NBHCP revisions, including revisions that (1) increase up to a total of 75 percent, the percentage of Mitigation Lands converted to managed marsh, or (2) result from ongoing monitoring program results in the Plan Area, as determined at the Mid-Point and Overall Program Reviews, or any future USFWS Giant Garter Snake Recovery Plan or CDFG Swainson's Hawk Recovery Plan (see Section VI.H below), or (3) based upon peer-reviewed scientific information provided such adjustments meet the requirements of Sections VI.E., Section VI.F. and Section VI.H. The fee shall also be increased as necessary to maintain land acquisitions at the 0.5-to-1 Mitigation Ratio and implement associated management (including restoration and enhancement), including changes identified through the Plan's Adaptive Management Program, as appropriate to ensure the effectiveness of the operating conservation program.

Because the Mitigation Fee consists of individual components (e.g., land acquisition, restoration/enhancement/monitoring, etc.), the fee may need to be raised with respect to specific fee components periodically found to be deficient over the term of the permits. In other words, all components of the Mitigation Fee as described in Table VI-1 are subject to fee increases as necessary to ensure that the requirements of each individual component of the NBHCP are met.

The Land Use Agencies shall adjust the fee as necessary for all additional monetary obligations that may be required to fully implement the land acquisition, ongoing or permanent management (including restoration and enhancement), monitoring, database maintenance, Adaptive Management, program adaptation due to recovery plan adoption, Changed Circumstances and any other requirements of the NBHCP and IA, subject to the limitations

described in Sections VI.E, VI.F., VI.H., and VI.K.1. Such fee increases are provided for under the Plan's Operating Conservation Program and therefore do not trigger amendment of the Plan or permits. Table VI.3 below describes the fee adjustments approved through the history of the 1997 NBHCP.

**TABLE VI – 2  
HISTORY OF FEE**

<b>Date Adopted</b>	<b>Fee Amount Per Acre of Development</b>
October 31, 1995 - Original Interim Fee	\$2,240
September 2, 1997	\$2,656
August 17, 1999	\$3,292
September 12, 2000	\$3,941
June 12, 2001	
Mitigation Fee	\$5,993
Premium Fee (Settlement Agreement)	<u>\$4,028</u>
Total	\$10,021
May 21, 2002 <sup>1</sup>	
Mitigation Fee	\$7,934
Premium Fee (Settlement Agreement)	<u>\$4,028</u>
Total	\$11,962
October 2003, EPS Estimated Fee for 2003 NBHCP	\$10,027

<sup>1</sup> The Settlement Agreement referenced in the above table was a limited term agreement that applied to specified development projects within the City of Sacramento. The Settlement Agreement Premium Fee does not apply to development authorized under this 2003 NBHCP.

### **3. Catch-Up Fee Ordinance**

The City of Sacramento and Sutter County will each adopt ordinances that require developers to pay a "catch-up" mitigation fee in the event that a developer pays the Mitigation Fee prior to issuance of an Urban Development Permit (i.e., grading permit, notice to proceed or building permit) and the fee is increased prior to actual disturbance of the land. The City of Sacramento adopted such an ordinance on April 3, 2001 (Ord. No. 2001-013 ).

### **4. Endowment Fund / Other Revenues**

The Endowment Fund provides for on-going administration and operations and maintenance expenses in the future years of the HCP, after all fee revenues have been collected and expended and also for permanent management of the Mitigation Lands following expiration of the permits. There is no change in the level of fee allocated to the Endowment Fund. The Conservancy carefully stewards its Endowment Fund, which as of the year 2001 holds in excess of \$450,000.00. As urban development occurs, landowners pay an endowment fund fee, currently \$1,500.00 per gross acre of development, as part of the total Mitigation Fee in order to supplement revenue available for ongoing management once all fees have been collected. The revenue from this fund is maintained in a separate account to accumulate earnings so that the interest earnings may be used to supplement operating revenues. The \$1,500.00 per acre fee is based on projected interest earnings needed to fund approximately 13 percent of the projected operating costs at the end of the 50-year permit period. The fund balance at the end of the 50-year permit period is estimated to be approximately \$6.7 million. Assuming an annual interest rate of 3 percent on the majority of funds (a 4 percent interest rate is assumed on \$500,000), interest earnings at the end of the period are approximately \$200,000 per year. The O&M fund is estimated to require approximately \$137,000 of these endowment interest earnings per year to supplement O&M revenues beginning in year 2033. Therefore, annual interest earnings on the Endowment Fund are greater than the annual drawdown for the O&M fund. The principal balance on the Endowment Fund will remain intact and allows the fund to be maintained in perpetuity so the mitigation lands can be managed in perpetuity.

#### Other Revenues:

TNBC shall seek out additional revenues to augment the cost of managing the reserve system in perpetuity. Such revenues may include hunting, farm subsidies, cell tower revenues, etc.

### **5. Public/Private Partnerships**

Within the conservation efforts directed by the NBHCP, there may also be efforts by the NBHCP Permittees to secure additional revenues from federal, state and other sources to supplement TNBC's efforts within the Natomas Basin. The Permittees may prepare grant applications or seek federal or state funds to fund the incorporation into the NBHCP of future recovery measures or other conservation strategies identified in future recovery plans or new scientific information.

**C. PHASING OF MITIGATION WITH RESPECT TO DEVELOPMENT**

Described below are phasing obligations associated with the timing of TNBC reserve acquisitions and reserve habitat improvements. The NBHCP provides that to the maximum extent practicable, TNBC will complete habitat acquisition in advance of habitat conversion resulting from Authorized Development in the Natomas Basin in accordance with the following provisions:

(1) 200 Acres in Advance:

To assure adequate funding for land acquisition, the NBHCP has instituted the following requirements: Acquisition of Mitigation Land to mitigate development impacts of a particular property is desired prior to or concurrently with issuance of an Urban Development Permit (i.e., grading permit or notice to proceed) for that property. To ensure that Mitigation Lands sufficient to meet the mitigation obligation which attaches to all Authorized Development under the NBHCP, TNBC shall establish and maintain a 200 acre cushion of Mitigation Lands prior to the approval of any new Authorized Development by the City of Sutter County in the following manner. No Urban Development Permits for Authorized Development shall be issued after September 30 of each calendar year until TNBC has acquired Mitigation Lands which equal the number of acres necessary to cover the mitigation obligation attached to all prior Authorized Development under the NBHCP plus an additional 200 acres of Mitigation Lands. For example, if Urban Development Permits have been issued on a total of 4,000 acres of land by September 30th in a given year (the beginning of grading restrictions), then 2,200 acres of Mitigation Land (one-half of 4,000 acres plus 200 acres) must be in place before any additional Authorized Development may be approved and any additional Urban Development Permits may be granted by the City or Sutter County. Funding for the initial purchase of 200 acres in advance of the issuance of Urban Development Permits may come from NBHCP Mitigation Fees, State or Federal grant money, or other sources of revenue available to TNBC. However, State and Federal grant money may not be used to offset the Mitigation Fee for Authorized Development.

(2) Managed Marsh:

Under the 1997 HCP, TNBC was directed to acquire an initial 400 acres of reserve land. This obligation was completed on May 17, 1999. A provision under the 1997 HCP, and carried forward to this NBHCP, requires that not later than five (5) years after acquisition of these lands, the entirety of the 400 acres, or equivalent acreage, must be converted to or be in managed marsh, unless otherwise approved by the USFWS and CDFG. The 400-acre managed marsh requirement shall be satisfied irrespective of how many of the local Land Use Agencies ultimately obtain permits. In other words, if only a single jurisdiction has obtained a permit and wishes to proceed with development authorizations



within its permit area, that Land Use Agency shall be responsible for satisfying the initial 400-acre managed marsh requirement within the Plan Area.

- (3) Following satisfaction of the requirement to convert the initial 400 acres of managed marsh, TNBC shall continue to convert a portion of all Mitigation Lands to managed marsh consistent with the following guidelines. The proportion of managed marsh within Mitigation Lands shall be based on total sites, and not necessarily on individual units of Mitigation Land. Following acquisition of Mitigation Land, TNBC is allowed one year to complete a Site Specific Management Plan (SSMP) for the site. Within three years of SSMP approval, TNBC shall complete site improvements, including managed marsh conversion as appropriate.

#### **D. ACCOUNTING OF MITIGATION LAND**

Each Land Use Agency shall collect Mitigation Fees prior to issuance of an Urban Development Permit (i.e., grading permit or notice to proceed) and promptly transfer the fees to TNBC, identifying by name, location and acreage, each project for which fees have been collected. TNBC shall record collection of fees from Land Use Agencies in chronological order, crediting the oldest project to have paid all required components of the Mitigation Fees with the Mitigation Lands TNBC acquired. Compliance with Phasing of Mitigation with Respect to Development (Section VI.C above) must be satisfied with respect to the entire Plan Area and not for individual Land Use Agency's Permit Areas. If TNBC falls behind on acquiring Mitigation Land, then TNBC must notify all Land Use Agencies and TNBC may not accept additional Mitigation Fees until acquisition of Mitigation Land is in compliance with Section VI.C. The Land Use Agencies shall not allow any development to proceed under the Incidental Take Permits where TNBC has not accepted Mitigation Fees or Mitigation Lands for the development project. Development of lands for which Mitigation Fees have been accepted by TNBC, and which has met all other requirements of the NBHCP would be allowed to proceed under the Incidental Take Permits.

##### Percentage of Managed Marsh:

A key NBHCP requirement is that at least 25% of habitat Mitigation Lands be established as managed marsh, unless the USFWS requires otherwise based on its future Giant Garter Snake Recovery Plan, ongoing monitoring results, or other new peer-reviewed scientific information. Thus, TNBC will, in its annual report (see Section VI.G below), specify the acreage, location, and type of reserve land (i.e., rice land versus marsh), and the percentage of each with respect to the total lands acquired to date. The 25% managed marsh requirement applies to the entire Natomas Basin collectively (i.e., to all Land Use Agency jurisdictions and Permit Areas), not to each Permit Area individually.

##### Out of Basin Mitigation Land:

The NBHCP allows for a maximum of 20 percent of the Mitigation Lands to be acquired in Area B outside of the Natomas Basin under certain conditions defined in Chapter IV.2.b, with

approval of USFWS and CDFG. TNBC shall account for all acreage acquired in Area B to ensure that the total amount of such lands does not exceed 20 percent of the total Mitigation Lands. (Note: *During the final NBHCP approval process by the City Council of the City of Sacramento and the Board of Supervisors of Sutter County, authorization to purchase Mitigation Lands to offset the impacts of development was limited to the Natomas Basin and the “outer” ring around the levees of the Natomas Basin. No authorization to purchase lands to mitigate impacts of Authorized Development in Area B (out of basin area) was granted by the City Council and the Board of Supervisors.*)

#### Metro Air Park:

While Metro Air Park (MAP) is not a Permittee under this NBHCP, there is an accounting relationship that must be considered. Under a separate HCP, and subject to the provisions of that HCP, MAP will utilize TNBC for acquisition and management of habitat reserves. MAP will rely on the County of Sacramento to collect Mitigation Fees, and the County will convey these fees to TNBC. Additionally, TNBC will include information on MAP's urban development and associated habitat mitigation within the TNBC Annual Report. Fees collected by TNBC on behalf of Planned Development in the MAP HCP shall be credited along with fees collected by both Land Use Permittees in chronological order, with the first project among MAP or either Land Use Permittee to have paid Mitigation Fees credited with the habitat Mitigation Lands acquired by TNBC and credited to MAP's mitigation obligation.

#### Land in Lieu of Fees:

With respect to each project proponent who elects to transfer Mitigation Lands in lieu of the Mitigation Land acquisition fee component of the Mitigation Fees, once TNBC, USFWS and CDFG have approved transfer of the lands, and the other Mitigation Fees have been paid by the project proponent, the project may proceed. TNBC will keep a record of the name, location, and acreage of the project and the Mitigation Lands transferred to TNBC on behalf of the project. That information will be presented in the TNBC annual report.

The findings of the annual accounting shall be published within the TNBC Annual Report described within Section VI.G. Additional data to be included within the Annual Report are described in Section VI.F.

### **E. MONITORING OF THE NBHCP**

Monitoring is an essential element of all HCP's that is designed and implemented to provide the information necessary to assess compliance and project impacts, and verify progress toward the biological goals and objectives for the Plan's Covered Species and habitats. Monitoring efforts must be designed to adequately direct the results of the adaptive management strategy. Integrating the results of NBHCP's monitoring program into the adaptive management strategy is essential. The monitoring efforts play an essential role in determining whether the chosen management strategy(s) is providing the desired outcome (i.e., achieving the biological goals of the HCP). Monitoring shall be performed for the duration of the permit and in perpetuity per the terms of the Plan.

An effective monitoring program provides information to: (1) evaluate compliance; (2) determine if biological goals and objectives are being met; and (3) provide feedback information, including assessing changed circumstances, for adaptive management. The monitoring program will reflect the measurable goals and objectives of the NBHCP, and be flexible enough to allow modifications, if necessary, to obtain the appropriate information.

However, much like adaptive management, it is necessary to make a distinction between the obligations of the NBHCP to provide and fund monitoring of the success of its mitigation efforts and the broader statutory obligations of the Wildlife Agencies with respect to recovery plans for the Covered Species. The NBHCP and its monitoring provisions are not to be confused with the collection of scientific data needed for a recovery plan and are not intended to be a replacement for the broad spectrum monitoring that may be contained in recovery plans which address a much larger geographic area and have a broader focus. Consequently, while the NBHCP monitoring will coincidentally assist with the recovery of the Covered Species by monitoring the Covered Species within the Mitigation Lands and those lands within the Natomas Basin to provide a baseline, the NBHCP monitoring provisions will not and are not intended to provide all the necessary monitoring measures for broader recovery plan purposes.

Two related but separate types of monitoring programs are required under the NBHCP. First, Compliance Monitoring documents Permittee activities and ensures that NBHCP Permittees complete obligations as specified within the NBHCP. These obligations vary between Permittees, based upon their specific obligations. This NBHCP, within the following section, specifies the Compliance Monitoring obligations of the Permittees. Second, a Biological Effectiveness Monitoring Plan measures the biological success of the NBHCP Operating Conservation Program. The Biological Effectiveness Monitoring Plan provides the biological data necessary to guide and direct the NBHCP Operating Conservation Program. This NBHCP, within the following sections, provides guidelines for preparation of the Biological Monitoring Plan that will be completed after NBHCP adoption.

## **1. Compliance Monitoring**

Compliance monitoring is verifying that the Permittees are carrying out the terms of the NBHCP, the IA and the associated permits. TNBC will be the primary entity responsible for compiling, retaining and making available to the Wildlife Agencies data on compliance with the provisions and obligations contained within the NBHCP and the associated IA. The Land Use Agency and Water Agency Permittees shall conduct Compliance Monitoring and report to TNBC on their compliance and the compliance of parties operating under their control and their Permits with regard to the Permittees obligations under the NBHCP, including implementation of NBHCP take avoidance, minimization and mitigation measures. Compliance Monitoring will include the status of the implementation of the NBHCP terms and conditions (e.g., financial responsibilities and obligations, management responsibilities, and other aspects of the incidental take permits, HCP and the IA). Within the Implementation Annual Meeting, TNBC will report to the other Permittees, USFWS and CDFG on the progress of the HCP conservation strategy. TNBC, the Land Use Agencies' and the Water Agencies' compliance with the NBHCP obligations will be reported within the TNBC Annual Report.

Described below are provisions related to Compliance Monitoring that will apply to the noted parties if and when Incidental Take Permits are issued to the individual party. For instance, Compliance Monitoring data for Water Agencies' activities shall not be required until such time as the Water Agencies apply for and receive permits. Until that time, TNBC will annually contact the Water Agencies and request information on the Water Agencies' canal and ditch maintenance activities. Such information, as provided voluntarily by the Water Agencies, shall be published annually by TNBC.

- a. The compliance monitoring accounting by TNBC of Mitigation Lands shall quantify:
  - (1) Annual acquisitions:
    - a. Acreage (annual incremental and cumulative)
    - b. Location (e.g., within Swainson's hawk zone, within the Basin)
    - c. Land use type/Condition (e.g., vegetation type, vernal pool, Swainson's hawk potential nest habitat, rice land, alfalfa).
  - (2) Take of Covered Species and impacts to habitat (note: no take of habitat; however, habitat disturbance results in take) resulting from implementation of the TNBC Site Specific Management Plans or Covered Activities (including any specimens taken for scientific purposes).
  - (3) Implementation of Incidental Take avoidance measures:
    - a. Preconstruction surveys and avoidance measures used pre- and post ground-disturbing activities within Mitigation Lands
    - b. Take avoidance implemented during maintenance and management
    - c. Success or failure in implementing take avoidance measures
    - d. Recommendations for changing or improving take avoidance measures.
  - (4) Annual financial status
    - a. The amount and source of funds collected
    - b. Funds expended or committed for acquisition
    - c. Funds held by TNBC in reserve
    - d. Summary of expenditures for and revenues from Mitigation Land management
    - e. An accounting of the long-term endowment account
    - f. Funds allocated by TNBC to an entity other than TNBC for monitoring or management
    - g. An accounting of and determination of adequacy of funding for implementing the Operating Conservation Program (e.g.; acquisition, enhancement, land management activities, monitoring and database management).
  - (5) Status of Mitigation Lands within TNBC reserves, including:
    - a. In-Basin:
      - i. Lands managed as marsh
      - ii. Lands managed as rice, including associated fallow land
      - iii. Lands managed as upland reserves
    - b. Out-of-Basin in "Area B"
    - c. Mitigation for vernal pools, as appropriate.

- (6) Status and condition of the Plan GIS and other databases; status and adequacy of SSMPs and monitoring plans, and any recommendations for revisions.
- b. The compliance monitoring accounting to be completed by each Permittee (City of Sacramento, Sutter County, RD1000, Natomas Mutual) shall quantify:
- (1) The amount and location, in written and GIS mapping formats of all lands approved for Authorized Development by private parties for which Mitigation Fees were paid to TNBC in the preceding year including the following information:
    - a. Acreage (annual incremental and cumulative)
    - b. Location (e.g., within Swainson's hawk zone, within HCP area)
    - c. Type (e.g., vegetation type, vernal pool, Swainson's hawk potential nest habitat).
  - (2) The amount and location of all lands approved for Authorized Development by public agencies (e.g. public works projects) for which Mitigation Fees were paid to TNBC in the preceding year.
  - (3) An accounting of the taking of any individual giant garter snakes, Swainson's hawks, or other Covered Species, if known, as a result of Covered Activities in the Permit Areas in the preceding year, including any specimens taken for scientific purposes.
  - (4) Implementation of Incidental Take avoidance measures:
    - a. Preconstruction surveys and avoidance measures used pre- and post ground-disturbing activities
    - b. Success or failure in implementing take avoidance measures
    - c. Recommendations for changing or improving take avoidance measures.
  - (5) Water Agencies' shall provide an annual report of Covered Activities and implementation of conservation measures (see Section V.B.4 for additional reporting requirements).
- c. The Land Use Agencies shall prepare a pre-construction survey form that will be provided to biologists completing pre-construction surveys as required in Sections V.A.1 and VI.E.1 of this NBHCP. Within one year of issuance of permits in conjunction with this NBHCP, the Land Use Agencies shall, in consultation with the NBHCP TAC, prepare template forms for Pre-Construction Surveys. Following approval of survey forms by the Wildlife Agencies, these forms shall be utilized by biologists conducting pre-construction surveys for TNBC or for Authorized Development conducted under the Land Use Agencies' take permits. Biological resource information developed in the course of CEQA documentation may help the Land Use Agencies determine which pre-construction surveys are appropriate. The following specific informational items are anticipated to be included within the pre-construction template form and shall serve as guidelines for pre-construction surveys for individual development projects completed prior to approval of the ultimate template form:

- (1) Site description: Possible sub-items include: (1) current and historical land uses/habitats; (2) current and historical adjacent land uses/habitats; and (3) any vernal pools and seasonal wetlands located on or adjacent (within 250 feet) to the project site.
- (2) Recorded Covered Species occurrences. Consult CNDDDB, TNBC, records published in the NBHCP, etc. to document records of Covered Species on and near the project site.
- (3) Prior biological resources analysis. Summarize findings of prior biological resource analyses conducted on site pursuant to specific development project's CEQA evaluation.
- (4) Results of botanical surveys. Possible sub-items include: (1) dates botanical inventories were conducted; (2) plant communities on site; (3) whether habitat for any Covered plant species occur on the site; and, (4) demonstration of compliance with any additional preconstruction surveys as required through prior review and/or environmental analysis conducted for the subject project.
- (5) Results of reconnaissance surveys. Any species observed on site should be described and noted. Surveys should be appropriately timed so that they may detect Covered Species for which habitat is found on the subject site. For example, surveys for legenera should be conducted between April and June because that is when the species blooms. Surveys conducted at other times of the year may not be capable of detecting the species. Other examples of appropriate timing of Covered Species surveys include, but are not limited to: (1) if any trees are on or in the vicinity of the project site, surveys must be timed to detect SH nesting; and (2) if burrows are present, surveys need to be timed to detect burrowing owl nesting. In cases where the timing of surveys affects their outcome, the surveys may be conducted the year prior to construction activities. However, nesting birds must be surveyed for in the year that construction activities occur, where potential nesting habitat exists on the project site.
- (6) Conclusions of surveys and research. Report Covered Species that do occur or may potentially occur on site (potential occurrence should be based upon habitat on or adjacent to the site and proximity of known localities or occurrences of the species).
- (7) Project activities that could affect Covered Species. Examples include, but are not limited to: (1) dewatering; (2) filling or relocating a canal; (3) removal of a nest tree; (4) work within ½ mile of a nest tree; (5) removal of burrows used by owls, (6) work near burrows; (7) any work near other nesting bird species; (8) fill of wetlands, (9) work near a wetland that could change the wetland's hydrology or water quality.

- (8) Recommendations. The biologist should recommend appropriate avoidance and minimization measures based upon the habitats that occur on or adjacent to the project site, the species that may occur on or adjacent to the project site, and the types of activities that could affect Covered Species. Measures to avoid and minimize take of Covered Species associated with Authorized Development to be permitted by the Land Use Agencies are identified in Section V.A. of this NBHCP and measures to avoid and minimize take of Covered Species by TNBC activities are identified in Section V.B of this NBHCP and shall be included in the biologists' report.

## **2. Biological Effectiveness Monitoring**

Biological Effectiveness Monitoring evaluates the effects of Authorized Development and other Covered Activities and determines whether the effectiveness of the Operating Conservation Program of the NBHCP is consistent with the assumptions and predictions made when the NBHCP was developed and approved; in other words, is the NBHCP achieving the biological goals and objectives. TNBC will be the responsible party for completing the effectiveness monitoring program described herein and the results of these monitoring efforts shall be published in the TNBC Annual Report. In order to ensure consistent application of monitoring techniques both upon TNBC reserves and throughout the Natomas Basin, TNBC shall prepare a comprehensive Biological Effectiveness Monitoring Plan.

In order to measure the effectiveness of meeting the biological goals and objectives, the Biological Effectiveness Monitoring Plan shall be designed to track population trends of the Covered Species and to evaluate the effectiveness of the Mitigation Land design, restoration and management in providing habitat and supporting the Covered Species. The monitoring plan shall track population trends on TNBC Mitigation Lands as well as at some selected non-reserve sites within the Natomas Basin. Non-reserve sites will serve as controls to compare success of Mitigation Land design and management in supporting and increasing the abundance of Covered Species. Monitoring of non-reserve sites also may provide information to guide future acquisitions and to determine presence and/or use of corridors between reserves. Selection of non-reserve sites to be monitored will be determined during preparation of the monitoring plan and may differ for the various Covered Species, depending on the management and information needs for those species.

The Biological Effectiveness Monitoring Plan is divided into two primary components. An overall NBHCP Biological Monitoring Program evaluates the overall success of Covered Species within the Natomas Basin. This program will include limited monitoring of Covered Species at locations outside of TNBC Mitigation Lands, as well as periodic evaluations of Covered Species within TNBC Mitigation Lands. Site Specific Biological Monitoring Programs will be developed for each block of contiguous TNBC Mitigation Lands. The Site Specific Biological Monitoring Programs will be developed in conjunction with, and included within, the TNBC Site Specific Management Plans. In combination, the NBHCP Biological Monitoring Program and the Site Specific Biological Monitoring Programs constitute the NBHCP Biological Effectiveness Monitoring Plan.

a. NBHCP Biological Effectiveness Monitoring Program

Within two (2) years of issuance of Permits under this NBHCP, TNBC shall prepare a detailed NBHCP Biological Effectiveness Monitoring Program, consistent with the NBHCP's monitoring requirements. This Monitoring Program will be developed in consultation with the NBHCP TAC. Development of the Biological Effectiveness Monitoring Program shall include peer and public review. TNBC shall begin implementing the Monitoring Program upon approval of the program by the Wildlife Agencies. The NBHCP Monitoring Program shall include, but is not limited to, the following components and guidelines for monitoring activities:

- (1) Annual surveys of the TNBC Permit Area (including TNBC reserves and selected non-reserve area accessible to TNBC) to determine the status of the Swainson's hawk, including presence, density, and reproductive success.
- (2) Annual assessment of the status of giant garter snake populations within the Natomas Basin. Annual updates of information of locations of giant garter snakes within the Basin, as well as other Covered Species.
- (3) Density and distribution sampling of Covered Species on TNBC reserve lands every five years. The first five year sampling of Covered Species shall be completed within one year of issuance of Permits under this NBHCP, and subsequently every five years thereafter. Once a Covered Species is found to occupy a TNBC reserve, yearly monitoring of that Covered Species on the reserve it occupies and any adjacent reserves, as appropriate, will be implemented.
- (4) The NBHCP Biological Monitoring Program shall specify the number of control locations within the Basin but outside of NBHCP Mitigation Lands that shall be monitored. These sites shall be monitored every year for Swainson's hawk and giant garter snake, and every five years to satisfy monitoring of species throughout the TNBC Permit Area other than Swainson's hawk and giant garter snake. Such sites shall be limited to a set of locations that, to the extent that such sites exist in the Basin and are physically accessible, collectively provide suitable habitat to support all Covered Species and shall allow the following:
  - (a) Determination of the comparative success of Covered Species on non-reserve sites versus on reserve sites.
  - (b) General documentation of Covered Species presence.
  - (c) Determination of whether the Mitigation Lands are supporting the general populations of Covered Species found within the Basin.
- (5) Annual assessment and identification of canals and ditches which provide GGS habitat connectivity within and between reserves. This assessment shall be coordinated with the Water Agencies and the Wildlife Agencies. Additionally, the Wildlife Agencies and the Land Use Agencies will notify TNBC of any known applications under the ESA or Section 404 of the Clean Water Act affecting canals. (See also connectivity discussion included in Chapter IV, Section d).
- (6) Evaluations of the Operating Conservation Program and its progress toward its intended biological goals.



- (7) The Monitoring Program shall provide specific details on the following subjects:
  - (a) Monitoring methodologies and protocols to be implemented
  - (b) Timing of monitoring efforts, including frequency and duration of monitoring efforts
  - (c) Locations of monitoring, and methodology used to select locations
  - (d) Personnel required
  - (e) Effort required and methods of documenting and determining monitoring effort
  - (f) Methods of analyses of monitoring data
  - (g) Information expected to be gained from monitoring
  - (h) Thresholds at which management must be modified to assure success of the conservation plan.
- (8) The Biological Effectiveness Monitoring Program shall establish a standardized format for annual monitoring and five-year monitoring conducted on behalf of TNBC.

b. Site Specific Biological Monitoring Programs

TNBC shall include within each Site Specific Management Plan (SSMP) a Biological Monitoring Program that guides monitoring activities within each TNBC Mitigation Lands reserve. The SSMP Biological Monitoring Programs will include specific provisions to address monitoring needs which, in the judgment of TNBC and the Wildlife Agencies, are necessary to fully evaluate and understand the efficacy of any specific management action. Each Site Specific Biological Monitoring Program shall be tailored to the individual resources of the subject Mitigation Lands and shall supplement monitoring guidelines provided in the NBHCP Biological Monitoring Program.

The SSMP Biological Monitoring Programs shall be prepared following the Wildlife Agency's approval of the NBHCP Biological Effectiveness Monitoring Plan. SSMP Biological Monitoring Programs for new reserve acquisitions shall be prepared within the reserve's SSMP and shall be subject to the same requirement for timing of completion as the SSMP.

When Mitigation Land is acquired directly adjacent to an existing TNBC reserve, the SSMP Biological Monitoring Program for the existing reserve will be reviewed to determine whether it is applicable and appropriate for the new acquisition. Upon acquisition of new Mitigation Lands directly adjacent to a TNBC reserve with an approved SSMP and Biological Monitoring Program, the NBHCP shall determine either: 1) the existing Biological Monitoring Program is applicable to the newly acquired Mitigation Land as is; 2) the existing Biological Monitoring Plan requires modification to address the newly acquired Mitigation Land; or 3) a new Biological Monitoring Program for the newly acquired Mitigation Land is required due to substantial differences between existing reserve and the newly acquired Mitigation Lands.

Each SSMP Monitoring Program will be reviewed and approved by TNBC in consultation with the TAC prior to implementation. In addition, TNBC shall, where possible, consult with appropriate species experts in the development of monitoring plans, including

USFWS, CDFG, academic and U.S. Geological Survey, Biological Resources Division (BRD) staff. In cases where TNBC has acquired Mitigation Lands prior to adoption of this NBHCP, TNBC shall complete Site Specific Biological Monitoring Programs for such lands within two years of issuance of permits under this NBHCP. Guidelines to be included within the SSMP Monitoring Plans include, but are not limited to:

- (1) The Covered Species or management action for which monitoring is needed.
- (2) Specific monitoring goals and/or objectives.
- (3) Requirement to complete Covered Species and habitat baseline inventory, using approved species appropriate sampling protocol, of each Reserve within the first year following acquisition and prior to any implementation of SSMP provisions.
- (4) Annual assessment of habitat conditions on TNBC reserve lands, including an assessment of Covered Species habitats, a qualitative description of habitat condition, and identification and estimated cover or numbers of invasive species.
- (5) Specific monitoring protocols and statistically supportable data analysis methodology to be used based on the considerations and instructions discussed in this section.

### **3. Design of Biological Effectiveness Monitoring Programs**

#### **a. General Guidelines**

The task of designing or coordinating the design of Biological Effectiveness Monitoring Programs, both overall NBHCP and Site Specific, will be the responsibility of TNBC, in consultation with the TAC and qualified species experts. Management objectives for the reserve system or other objectives determined by TNBC, in consultation with the TAC, will determine whether qualitative or quantitative monitoring methods will be employed and what level of confidence in the results is required. The following questions apply to the development of both the NBHCP Biological Monitoring Program and SSMP Biological Monitoring Programs and will be considered by TNBC as a framework for ensuring that realistic and reasonable monitoring decisions will be made: (1) What kind and quality of information can be gathered with the time and resources available? (2) What are the possible outcomes and answers such an investigation might reveal? (3) What decisions will be triggered by different outcomes and answers? (4) How are these decisions different than those that would be made with existing information? (5) What effect will continuing the status quo have on species status and on options for future action? (CDFG 1993). Therefore, all monitoring plans must explicitly address the levels of variation and uncertainty that are associated with the survey method and how this will influence decision making.

As described above, sometimes a consideration of qualitative survey and inventory results will be sufficient, providing TNBC with confidence to either pursue additional information or proceed with specific actions, including adjustments under the Plan's Adaptive Management provisions, on the basis of information they already have. At other times, a more formal analysis of quantitative survey results may be needed. In either case, monitoring decisions under the Plan must be made after answering the questions listed above in the context

of the particular management objective. For example, the monitoring interval for focused monitoring efforts would be determined by the longevity and generation time of the Covered Species of interest, or the expected periodicity of specific biological or climatic events or other interactions in which the species may be involved. Monitoring programs might also consider the conditions of the habitat being monitored and the habitat necessary for species dispersal.

Biological Effectiveness Monitoring shall be conducted by TNBC and the results of such monitoring will be published in conjunction with TNBC's Annual Report. The Biological Effectiveness of the NBHCP will be analyzed through the review and analysis of Annual Biological Monitoring reports and Five-Year Monitoring reports, and through the comparison of these surveys with the Baseline Surveys conducted for each TNBC reserve. In compiling and publishing Biological Monitoring data, TNBC shall produce single reports that address all covered species as determined appropriate, rather than producing an individual report for each of the Covered Species. Such comprehensive reports may include as attachments additional studies such as basinwide evaluations of giant garter snake and Swainson's hawk.

Due to the lack of documented occurrences of numerous Covered Species within the Natomas Basin and in Area B, Biological Monitoring efforts shall vary in depth and detail. For instance, Rarely Occurring Species such as Delta tule pea are not known to exist within the Plan Area. Until such time as Delta tule pea or other Rarely Occurring Covered Species are found in the Basin, surveys for such species shall be cursory and discussions within various monitoring reports shall be brief. If such a species becomes established or is later discovered in the Basin, future surveys would focus on locations with identified populations.

All Biological Effectiveness Monitoring Programs will include thresholds, at which Mitigation Land management must be modified through the Adaptive Management Process to assure success of the Operating Conservation Program. These points will be broad enough to assure that actions are not taken unnecessarily, but specific enough to prevent catastrophic effects to the Covered Species or other aspects of the Plan.

The NBHCP does not identify the specific activities to be conducted within the Biological Effectiveness Monitoring Programs. However, the criteria and guidelines provided in the following sections provide direction for developing suitable NBHCP Biological Effectiveness Monitoring Programs.

b. Utilization of Existing Data Sources and Monitoring Protocols

TNBC shall utilize all existing information, including information on the numbers, distribution, occurrence, or abundance of the other Covered Species that may be available in documenting baseline species presence. In addition, survey protocols for Covered Species shall be incorporated within and shall guide preparation of the NBHCP Biological Monitoring Programs. Information sources could include USGS surveys (in addition to USGS giant garter snake survey information), Species status reviews, Breeding Bird Survey, Audubon Christmas Bird Counts, etc. Other sources of information also may include working groups and species experts, such as the Interagency Western Pond Turtle Working Group, Swainson's Hawk Technical Advisory Committee, etc.

c. Available Monitoring Methods

Described below is a suite of monitoring methods that may be incorporated within TNBC Biological Monitoring Programs. This list of methods is neither comprehensive nor mandatory. Rather, these methods shall be considered as TNBC, the TAC and the Wildlife Agencies prepare the Biological Monitoring Programs.

Standard Inventory Methods

Several standard techniques are available for monitoring the status of the NBHCP's Covered Species across the reserve system through time. While the Plan does not require the adoption of a particular method or suite of methods, it strongly recommends that TNBC employ standard methods such as the ones listed below. Most of these techniques are widely used and have been tested in the field for years. They tend to require a relatively high time investment but, generally, can be conducted at a low cost with a minimum commitment of personnel.

- (1) Visual encounter surveys (determines species richness, relative abundance). The time required depends on the number of Covered Species inventoried.
- (2) Calling bird censusing along strip transects (determines relative abundance). Personnel need to be familiar with the vocalizations.
- (3) Replicated quadrant, transect, or patch sampling (determines density). The commitment of time and personnel with this method is relatively high because sampling is thorough.
- (4) Drift fences and trapping (determines relative abundance). These methods also have a relatively high cost and commitment of personnel.
- (5) Surveys at breeding or nesting sites (determines nesting status, nesting success, and relative abundance). This is a cost effective inventory method.
- (6) Mark-Recapture Studies. This technique is one of the main methods used by ecologists to estimate population size. Compared to most other monitoring methods described above, commonly employed mark-recapture methods are labor intensive and time consuming. This method should be used where it is essential to monitor a specific NBHCP objective or is the only reliable method for acquiring the necessary information (for example, mark-recapture is currently the best method for monitoring giant garter snake populations). However, mark recapture studies may provide little data for widely dispersed or rarely occurring species where recapture probabilities are low. TNBC should take these factors into consideration before applying this to Covered Species other than giant garter snakes.

Supplemental Inventory Methods

The methods described below are less traditional monitoring methods. The literature on these methods, their strengths and weaknesses, and their underlying assumptions are less well developed than for the methods described in the section above. Therefore, these approaches may yield ambiguous results. However, some or all of these methods may provide information augmenting the more standardized techniques discussed above and may be considered in

designing NBHCP Biological Monitoring Programs. However, TNBC in consultation with the TAC, should seriously consider the relative strengths and weaknesses of these approaches prior to employing them, and should periodically check the status of these methodologies in the scientific literature.

- (1) Night driving/spotlighting (determines relative abundance, species richness). This method is low in cost and requires little training. Animals recently killed on roads can be collected as voucher specimens and for use in life history and population genetics studies.
- (2) Group activities and field trips (can determine relative abundance, species richness). This is also a low-cost method but requires a data coordinator. There is an added benefit of public outreach. Natural history classes from local universities, the National Audubon Society or other natural history societies could participate.

d. Monitoring Guidelines for Individual Species or Types of Species

Described in this section are guidelines for monitoring individual Covered Species or types of species covered under the NBHCP. These guidelines shall be considered by TNBC, the TAC and the Wildlife Agencies during the preparation of the NBHCP Biological Effectiveness Monitoring Program and the Site Specific Biological Effectiveness Monitoring Programs.

Giant Garter Snake Monitoring

Methods similar to those currently being used by USGS-BRD may be used to accomplish monitoring goals for giant garter snakes. These methods include trapping surveys along with mark-recapture studies and habitat assessments. Trapping in conjunction with mark-recapture techniques can document presence of GGS and establish indices of relative abundance, as well as document the size/age distribution and provide data necessary to estimate survival and recruitment within populations (measures of population health and trends). Habitat assessments conducted in conjunction with survey efforts will assist in determining which habitat factors and types of restoration and management affect the presence and abundance of GGS. Finally, mark-recapture studies may provide valuable information on dispersal of individuals and document movement among reserves and other surveyed areas. Because effective GGS monitoring requires time and labor intensive trapping and survey efforts, basin wide surveys are not feasible. However, sampling of multiple locations throughout the basin can be used to develop an abundance index of giant garter snakes. Methods for monitoring giant garter snake should include the following:

- (1) Establish transects to be surveyed through use of modified floating minnow traps (Casazza, et al. 2000), supplemented with visual searching on foot. Locations of transects will be determined in development of the monitoring plan but will include:
  - (a) Permanent transects on TNBC reserve lands trapped in every year.
  - (b) Permanent transects on non-reserve lands trapped in every year (transects should be established in each of the following areas: (north of I-80 and

- east of I-5/SR99; north of I-5 and west of SR99; and south of I-5 and west of I-5/SR99).
- (c) Additional non-reserve survey transects trapped on a rotating basis at least once every five years. These transects would be chosen to fill in gaps in GGS distribution information, to assess use of corridors between reserves, and increase detections of giant garter snakes necessary to determine population status and to detect dispersal, or to obtain specific information as information needs arise.
  - (d) GGS monitoring outside of TNBC reserves shall be limited to locations where TNBC is granted access by the affected property owner(s) for purposes of species monitoring.
  - (e) All giant garter snakes captured and of appropriate size will be individually marked using PIT tags. All individual snakes also will be examined and measured according to current USGS protocols.
  - (f) Habitat assessments will be carried out for all transects trapped in a given year according to current USGS protocols.
  - (g) Out-of-basin reserves must be surveyed yearly when/if added, along with appropriate off-reserve out-of-basin transects. The off reserve out-of-basin transects would serve as the basis for comparison of the success of the out-of-basin reserve habitat restoration and/or management.

#### Swainson's Hawk Monitoring

Surveys to determine the status of the Swainson's hawk, shall document presence, density, and reproductive rate of the species. Swainson's hawk survey shall be conducted annually and shall address Mitigation Lands, as well as undeveloped land in the Natomas Basin. Monitoring for Swainson's hawk outside of TNBC reserves shall be limited to sites within the Plan Area that can be visually observed from locations where TNBC or its authorized representatives are granted access by the affected property owner.

#### Avian Species Monitoring

The NBHCP covers six other bird species: Aleutian Canada goose, white-faced ibis, bank swallow, tricolored blackbird, loggerhead shrike, and burrowing owl. Because some of these species may be difficult to detect due to their transitory occurrence in the Natomas Basin, it may be necessary to monitor habitat characteristics as a surrogate to determine whether the conservation strategy is successfully providing habitat for these species. Additional surveys should also be carried out in order to attempt to detect actual presence of the species in the Basin both on and off Mitigation Lands, but because of sporadic occurrence of these species, may not provide enough data to statistically determine population trends. Monitoring Programs for these bird species should include:

- (1) Annual surveys of Covered bird species for wintering birds and for breeding birds on all reserve lands and at selected non-reserve locations. The monitoring plan will specify the locations of surveys and appropriate timing to increase

chances of detecting the covered bird species based on their likely occurrence in the Basin. However these surveys are not intended to be exhaustive given the low probability of detecting some species regardless of effort. Rather, they are intended to indicate presence in the Basin or on reserve lands. The monitoring plan will specify the number of days per year surveys will be conducted (currently, this is expected to require 7-14 days per year, but may be revised as determined by TNBC in consultation with the TAC and other species experts).

- (2) Determine habitat characteristics needed to meet goals and objectives of providing habitat for the covered bird species and develop monitoring protocols to measure and monitor these characteristics.
- (3) Where breeding colonies of the covered bird species have become established on reserve lands, TNBC will annually estimate the colony size and nesting success.

#### Vernal Pool Species Monitoring

If any Mitigation Lands have existing seasonal wetlands, those wetlands should be surveyed for presence of vernal pool crustaceans according to Service guidelines. These surveys should be completed on Mitigation Lands prior to any restoration activities that would fill or alter the wetland habitats on Mitigation Lands. Results of surveys for vernal pool crustaceans should be used to assist in preparation of restoration and management plans. Thereafter, any vernal pools on reserve lands, whether preserved or restored, should be monitored for the covered vernal pool species. Monitoring of vernal pool areas within the Mitigation Lands should include the following:

- (1) Periodic surveys will be conducted for presence of listed or covered crustacean species according to Service protocols. Surveys will also be conducted for presence of any covered vernal pool plant species and amphibians. The monitoring plan will determine and specify the frequency of surveys necessary to monitor both preserved and restored pools.
- (2) Monitoring Programs will specify monitoring protocols to measure and monitor vernal pool habitat characteristics to determine the effects of management activities (such as grazing intensity, frequency, and duration) on the vernal pools.

#### Covered Plant Species Monitoring

The NBHCP covers a number of plant species not currently known to occur in the Natomas Basin. Monitoring for these species will consist of the following:

- (1) Within the first year after acquisition of a reserve, TNBC shall conduct a botanical inventory. The inventories should be conducted at the appropriate times of year when the target Covered Species are present and identifiable. Results of the inventory should identify areas on reserve lands that may support the covered plant species and should be the subject of future monitoring efforts.

The result may provide habitat and plant community information that may be used in developing SSMPs.

- (2) Botanical inventories will be conducted periodically at intervals determined and specified in the Site Specific Biological Monitoring Programs. These inventories should target areas known to support covered plant species or previously identified to have the habitat characteristics likely to support the covered plant species, or areas restored or managed such that they are likely to support the Covered Species.

### Rarely Occurring Species

It is expected that some Covered Species may occur very rarely in the Natomas Basin or may be very difficult to detect. Rarely occurring species include all plant Covered Species, all Covered Species associated with vernal pools, Bank swallow, California tiger salamander, Western spadefoot toad and Valley elderberry longhorn beetle. These species are considered rarely occurring due to the very limited vernal pool habitat found within the Basin and/or the lack of known occurrences of these species within the Basin. For these species, direct abundance estimates of population sizes or relative abundance may not be possible because of low detection rates. In these cases, the Biological Monitoring Programs should include: 1) efforts to actually detect the species on reserve lands or locations within the Basin that have known populations of these species and for which TNBC is granted access to monitor; and, 2) a methodology for estimating the amount and suitability of habitat available and trends in those habitat characteristics. Because efforts to actually detect rarely occurring species may not yield any detections, extensive or exhaustive efforts may not be the best use of monitoring resources. Therefore, the monitoring plan will specify the relative amount of effort spent in actual detection effort versus effort in documenting and monitoring the amount and suitability of the habitat provided. In addition to overall biological monitoring conducted by TNBC, preconstruction surveys conducted by proponents of Authorized Development and TNBC will investigate the presence of rarely occurring species prior to disturbance of land for urban development or habitat reserve construction.

## **4. Review and Revision of the Biological Monitoring Programs**

The Biological Effectiveness Monitoring Programs may require periodic revisions as new methods become available or if monitoring methods are not yielding the expected information. Therefore, the Monitoring Programs and their effectiveness in measuring the success of the NBHCP's Operating Conservation Program also will be reviewed at each Midpoint Review. TNBC will revise the Monitoring Programs whenever review indicates revision is necessary to effectively monitor success in achieving the biological goals and objectives.

## **5. Monitor Summary Table**

Provided below is a summary table that lists the various monitoring obligations to be conducted under the NBHCP. Generally, these obligations shall apply to TNBC, although any proponent of



Authorized Development will be required to complete Pre-Construction Surveys prior to disturbance.

**TABLE VI-3  
SUMMARY OF TNBC MONITORING OBLIGATIONS**

<b>One Time Monitoring Efforts Related to Reserve Acquisition and Development</b>		
<b>Pre- Acquisition Survey</b>	<b>Existing Conditions Assessment</b>	<b>Pre-construction Survey and Monitoring</b>
<p><b><u>Pre-acquisition field reconnaissance</u></b> of site to determine suitability of site as habitat for covered species and the type of habitat, and associated species that may be present on site.</p> <p>This is a relatively simple overview assessment and not a full biological assessment. The purpose of the reconnaissance is to determine the potential or limiting factors for establishment of habitat to support covered species.</p> <p>See Section IV.C.2.d</p>	<p>Within Year 1 following acquisition, an <b><u>Existing Conditions Biological Assessment</u></b>. This Assessment shall focus on habitat types present upon the site. Information on observed species (including botanical species) shall be noted. This assessment shall be a part of the SSMP. It will identify habitat present on the site, recommended additional habitat preservation and enhancement opportunities.</p> <p>Specific attention shall be paid to the <b><u>suitability</u></b> and appropriateness of the site for creation of habitat <b><u>for re-introduced species</u></b>, specifically:</p> <ul style="list-style-type: none"> <li>California Tiger Salamander</li> <li>Spadefoot Toad</li> <li>Western Pond Turtle</li> <li>Vernal Pool Plants</li> <li>Sanford Arrowhead</li> <li>Delta Tule Pea and other covered plants.</li> </ul> <p>See Section IV.D.1.a</p>	<p>Not less than 30 days prior to commencement of construction, a <b><u>pre-construction survey</u></b> shall be conducted to determine the status and presence, and likely impacts to Covered Species.</p> <p>Specific <b><u>avoidance measures</u></b> as necessary to address identified impacts (such as nesting birds) shall be developed and <b><u>monitored for effectiveness during construction</u></b>. (See species specific avoidance measures in the HCP).</p> <p>See Sections V.B</p>
<b>Annual Monitoring Programs</b>		
<b>General</b>	<b>Reserve Specific Annual Monitoring</b>	<b>Basin Wide</b>
<p><b><u>Connectivity Assessment</u></b>. Through periodic coordination with the Water Agencies, monitor any changes or actions related to the canal system and report such changes to the TNBC Board and TAC for assessment of impacts, and identification of adaptive management efforts if required.</p>	<p>Annual Surveys of TNBC Reserves shall include:</p> <ul style="list-style-type: none"> <li>Nesting Birds Survey</li> <li>Wintering Birds Survey</li> <li>Habitat Establishment</li> <li>Invasive Species Assessment</li> <li>Covered Species Assessment</li> <li>If Covered Species of plants, Vernal</li> </ul>	<p>Annual surveys within the TNBC Permit Area shall include:</p> <ul style="list-style-type: none"> <li>Giant Garter Snake Survey</li> <li>Swainson’s Hawk Survey</li> </ul> <p>See Sections VI.E.2.a and VI.E.3.d</p>

<p><b>Annual Report.</b> A consolidated Annual Report will be published summarizing significant monitoring findings. All other monitoring reports shall be retained as administrative records of compliance however, it is not necessary to separately publish each monitoring report.</p> <p>See Sections VI.E.1 and VI.E.2.a</p>	<p>Pool Covered Species or Rarely Occurring Covered Species are observed within a TNBC Reserve, then subsequent annual surveys of that Reserve and any contiguous TNBC Reserves shall include the identified Covered Species population.</p> <p>See Sections VI.E.2.a, VI.E.2.b and VI.E.3.d</p>	
<p><b>Periodic or Five Year Monitoring</b></p>		
<p><b>General</b></p>	<p><b>Reserve Monitoring</b></p>	<p><b>Outside TNBC Reserves</b></p>
<p>Five year monitoring efforts shall include typical annual monitoring efforts plus additional monitoring at specific control sites within the Basin, but outside TNBC Reserves.</p>	<p>Summary of density and distribution of Covered Species upon TNBC Reserves.</p> <p>Section VI.E.2.a(3)</p>	<p>Control sites (within the Natomas Basin but outside TNBC Reserve) shall be identified and monitored to compare and evaluate the biological viability of the TNBC Reserves as compared to non-reserve habitat for the Covered Species.</p> <p>See Section VI.E.2.a</p>

**F. ADAPTIVE MANAGEMENT**

**1. General Information**

Adaptive Management is a process that allows the NBHCP's Operating Conservation Program to be adjusted during the life of the permit to ensure that the most up-to-date information is being utilized, and that the Plan's biological goals and objectives are being achieved. The strategy will define the feedback process and incorporate feedback loops that link implementation and monitoring to a decision-making process. Incorporating new monitoring information is necessary to effect changes in management to achieve the Plan's biological goals and objectives. Where monitoring methods do not yet exist, research must be conducted to develop means to assess the effectiveness of the NBHCP. This section explains the Plan's significant uncertainties and questions, potential strategies to address these uncertainties, how the Plan's Adaptive Management process provisions will work, and how revisions under the Adaptive Management program will be made.

Future NBHCP modifications, through the Adaptive Management process, may be needed as a result of the following significant uncertainties:

- (1) new information resulting from monitoring of Mitigation Lands or other lands in the Natomas Basin and ongoing research on the giant garter snake (See Section II.C.2), Swainson's hawk, or other Covered Species;

- (2) recovery strategies under the future USFWS Giant Garter Snake Recovery Plan, CDFG Swainson's Hawk Recovery Plan, or newly listed Covered Species recovery plans, that could differ from the measures currently described in the NBHCP (see below, Section VI.H);
- (3) minimization and mitigation measures described in the NBHCP that may need to be revised based on new information or the Plan's monitoring data (e.g., marsh configuration and design; etc.);
- (4) the 2,500-acre and 400-acre minimum habitat block size requirements for reserves may need to be revised;
- (5) significant land use changes outside of the reserve system but in close proximity to a TNBC reserve that result in a direct impact upon the reserve; and
- (6) uncertainties associated with the Plan implementation.

Each of these situations could result in new information, new approaches, new recovery or conservation standards that would need to be incorporated into the NBHCP.

Adaptive Management changes to the NBHCP management actions, monitoring, and research needs may be implemented in many ways. For the purposes of the NBHCP, the following three approaches will be used;

- (1) regularly scheduled periodic evaluations of the NBHCP monitoring data, other new peer-reviewed scientific information or future recovery plan recommendations by TNBC and/or the NBHCP TAC and a determination by the TNBC Board linking the information to the Plan's success in implementation and achieving the biological goals and objectives; and
- (2) identifying significant measurable threshold limits for each of the Adaptive Management objectives that will trigger proposals and solutions requiring a management change; and
- (3) conducting a review at the Independent Mid-Point Reviews for Land Use Agencies (see Section VI.J.) and the Overall Program Review at 9,000 acres of development (see Section VI.I.).

These approaches will be used to evaluate the effectiveness of the established habitats on reserve lands and to implement adjustments to the operating conservation program, as necessary, in order to achieve the biological goals and objectives of the Plan, including to address the mitigation requirements for Covered Species.

TNBC will use the annual reporting process to review the compliance and effectiveness monitoring in the Adaptive Management process. The TNBC report will include a summary of findings with specific management recommendations and direction if applicable. The Adaptive Management Process for the NBHCP will use scientific research and the Plan's monitoring program to establish a baseline inventory and population density and distribution data for many of the Covered Species for which data is currently missing. New data and input from the scientific community will be necessary, throughout the life of the Plan, to adjust the threshold limits as appropriate.

Management threshold limits are needed that will trigger proposals and potential solutions for changes in the Plan. The management thresholds, in addition to the periodic evaluations are key decision making processes in determining the Plan's implementation status and success in achieving the conservation goals and objectives. The NBHCP Biological Monitoring Program, to be completed within two years of issuances of permits under the NBHCP, will consider and refine management thresholds. Until the Wildlife Agencies approve the NBHCP Biological Monitoring Program, the following management thresholds shall be applied to trigger modifications to the Operating System Conservation Plan through the Adaptive Management program:

- (1) new information resulting from monitoring of Mitigation Lands or other scientific studies documenting new or substantially more severe potential threats to Covered Species that are not adequately addressed by the NBHCP;
- (2) new scientific information separate and distinct from the information identified in item (1) that identifies the need for adjustments to management practices under the Operating Conservation Plan in order to measurably increase the value of habitat for Covered Species without substantially increasing the management obligations of TNBC;
- (3) documentation of presence of a Covered Species within the Natomas Basin not previously found to exist within the Natomas Basin;
- (4) year-to-year declines in the documented presence of Covered Species populations within Mitigation Lands that are determined to be significant by the Wildlife Agencies; and
- (5) substantial modifications to land uses within 800 feet of a Mitigation Lands reserve that have the potential to adversely affect the habitat and/or Covered Species in the reserve; and
- (6) reduction in foraging opportunities, as identified in Table IV-2, without adequate provisions to maintain foraging habitat, such that the effectiveness of the NBHCP operating conservation program is potentially compromised.

## **2. Adaptive Management Revisions to the NBHCP**

Revisions to the NBHCP resulting from the Adaptive Management provisions shall be accomplished consistent with Section VI.L.3, Amendments and Revisions. Under the Adaptive Management provisions, the NBHCP can be modified if necessary to ensure that the most up to date information is being used under the Operating Conservation Plan. However, adaptive management modifications to benefit one species will not occur at the biological expense of another Covered Species. Changes to the NBHCP that are substantial in scope, and are beyond the scope of the Adaptive Management Program will require the amendment of the Incidental Take Permits, and additional review and approval under the ESA, CESA, CEQA and NEPA.

TNBC shall keep a complete administrative record of all NBHCP revisions resulting from the Plan's Adaptive Management program. For minor revisions, this may be satisfied by TNBC meeting records or other records of an appropriate nature, (see Section VI.L.4).

### 3. NBHCP Database and Scientific Authority

Quality information is important and necessary for effective implementation of the NBHCP and to ensure that management decisions are based on current Covered Species distribution and occurrence records, land use, and financial data. Annual data entry, updates and management of the databases by TNBC is also necessary for the annual reporting to the Wildlife Agencies (e.g., status of the databases, annual status of Covered Species and habitats, monitoring and implementation compliance, land use changes, and reserve acreage and condition). The data will be used to assist in estimating Incidental Take Levels; to assist in identifying potential lands for reserves; and will be used by TNBC in determining when and if Incidental Take Avoidance Measures and/or pre-construction surveys are required for individual projects. The continuing maintenance of these databases is essential to the NBHCP success.

TNBC will serve as the database manager for the NBHCP and shall be the central data repository of all scientific data collected through the NBHCP for the life of the permits. In this role, TNBC will be responsible for maintenance, management, analysis and distribution of data collected through NBHCP monitoring efforts, as well as serving as a repository for related work conducted by other entities within the Basin. TNBC will annually consider the adequacy of the database and a discussion of the validity and reliability of the database will be included each year in the Annual Implementation Report. In addition to monitoring data collected by TNBC and the other NBHCP Permittees, the database will include documents and reports on new species occurrence records from environmental documents, California Natural Diversity Database (CNDDDB) entries and other sources as provided to TNBC. TNBC shall complete and submit CNDDDB data forms to CDFG for all new species occurrences identified through NBHCP monitoring efforts. Additional TNBC services related to the data repository will include data security, compatibility with State and Federal database software applications, data standardization for data collected through NBHCP monitoring, and submittal of annual CNDDDB data forms for new species occurrence records in the Plan Area identified through NBHCP monitoring efforts. As the database manager, TNBC will maintain the database in perpetuity (including the geographic information system). The central data repository will provide access to NBHCP data to all participants of the NBHCP using established appropriate technologies (CD-ROM, printed copy, or other media as available and as approved by the TNBC Board of Directors). TNBC may, at its discretion, require reimbursement for reasonable costs associated with disseminating monitoring information to entities other than CDFG, USFWS and the NBHCP Permittees.

TNBC shall maintain the database in a form that allows the determination of success of the NBHCP in achieving the biological goals and objectives of the Operating Conservation Program. At a minimum, the database will document in tabular form in a standard spreadsheet program the following data: the numbers and specific locations (UTM NAD 83 Zone 10 is preferred) of each species occurrence within each contiguous block of Mitigation Land; Basinwide data documented on Swainson's hawk and giant garter snake such as population densities, reproductive successes, etc. collected through annual surveys, 5-year surveys, and other observational data; and, Covered Species data for each identified monitoring control site located outside of the Mitigation Lands. Exact data needs of the Biological Effectiveness

Monitoring Program required to evaluate the success of the Operating Conservation Plan in meeting the NBHCP biological goals and objectives will be decided by TNBC in consultation with the Service, CDFG, and the TAC. Maps identifying monitoring sites and the specific locations of species occurrences shall be maintained to document the locations of monitoring efforts and the locations for data collected through the NBHCP monitoring efforts. Mapping of monitoring data shall be of adequate detail to evaluate the success of restoration efforts within TNBC reserves and shall allow comparison of year-to-year monitoring results and five-year monitoring results. Additionally, TNBC shall retain mapped information identifying the locations of all Mitigation Lands and all data reported by the Land Use Agency Permittees related to the location of development authorized under the NBHCP, thereby documenting development lands for which NBHCP fees and other mitigation measures have been satisfied.

In addition to providing data in a form adequate to meet the above noted biological monitoring obligations of TNBC, biologists conducting monitoring for TNBC shall provide results of their investigations in a spreadsheet suitable for incorporation into a GIS database. Monitoring data shall be maintained in a spatial data system to allow for the evaluation of NBHCP Biological Goals and Objectives and reporting of results to the Wildlife Agencies and the public. In order to allow for consistency in data collection, organization, and presentation, TNBC shall require consulting biologists to use a species-specific template to provide results of monitoring efforts. The template shall be developed contemporaneous to the Biological Effectiveness Monitoring Program by TNBC, in consultation with the Service, CDFG, and the TAC.

The use of Mitigation Fees by TNBC to support GIS mapping and database systems shall be limited to: 1) documenting the point locations of Covered Species occurrences identified through TNBC monitoring within TNBC reserves; 2) Covered Species occurrences identified at limited NBHCP control locations outside Reserves but within the Basin; 3) point locations of occurrences of annual Swainson's hawk and Giant garter snake identified through annual surveys within the Basin; 4) point locations of Covered Species occurrences identified through Preconstruction Surveys within Authorized Development; and, 5) ultimate habitat types within TNBC reserves as described within Site Specific Management Plans

If the Wildlife Agencies and the Permittees determine that GIS data other than that described herein are required to analyze the success of the Operating Conservation Plan in meeting the goals and objectives of the NBHCP, the GIS data may be modified so long as the cost of GIS database management does not exceed an annual cost of \$10,000 in 2003 dollars. Funding for GIS data management shall be included in the TNBC annual budget as a component of the TNBC administrative budget and the maximum \$10,000 available for GIS activities shall increase three (3) percent each year through the life of the NBHCP permits. The three (3) percent cost escalation is consistent with the cost escalation for monitoring activities utilized within the fee study prepared for the 2003 NBHCP. Limitations on TNBC's obligations related to GIS does not preclude TNBC, other Permittees, or the Wildlife Agencies from pursuing grants or alternate funding for the expanded data sets within the GIS system such as mapping of land cover types outside of TNBC reserves or other informational components that would enhance the functionality of the GIS system.

**G. ANNUAL REPORT**

On behalf of the Permittees, TNBC shall compile and submit an annual report to the USFWS and CDFG detailing Authorized Development activities, Water Agencies' activities and habitat acquisition, management, and compliance and effectiveness monitoring activities throughout the Plan Area for the preceding year. Specific monitoring data collected and compiled by TNBC and the Permittees, as described under Section VI.E, will be documented in the Annual Report. The report will be due 120 calendar days from the last day of each calendar year, or portion of a calendar year, during which the permit is in effect. Each Permittee will be responsible for providing TNBC with information in their possession necessary for compiling the Annual Report.

**H. PROGRAM ADAPTATION FOR RECOVERY PLANS****1. Changes Due to Future Recovery Plans Other than Changes to Managed Marsh Component**

The NBHCP has incorporated, and is consistent with the provisions of the Draft Recovery Plan for the Giant Garter Snake, U.S. Department of the Interior, Fish and Wildlife Service, Pacific Region, 1999. The USFWS currently is developing a recovery plan that will address the recovery needs of vernal pool species -- the Vernal Pool Multi-Species Recovery Plan. Other USFWS recovery plans not now in preparation also may be developed over the life of the NBHCP and are expected to address federally-listed species and NBHCP Covered Species which may become listed in the future. The CDFG also may prepare recovery plans for state-listed species, such as the Swainson's Hawk and species which become listed in the future. Other Recovery Plans may be developed for species other than the NBHCP Covered Species which may occupy the same ecosystem as the NBHCP Covered Species and which may benefit from recovery actions for these species.

The NBHCP Adaptive Management provisions allow for revisions to management strategies to incorporate new or modified management strategies, such as those which may be included in recovery plans or in response to monitoring results in the Plan Area or to new peer-reviewed scientific information. However, it is necessary to define the scope of any such revisions with respect to the NBHCP's original purpose and goals. The specific purpose of the NBHCP is to establish a conservation program to minimize and mitigate for the effects of Covered Activities within the NBHCP Plan Area on the NBHCP Covered Species, and to meet the statutory requirements for issuance of federal and state Incidental Take Permits under the ESA and CESA, respectively.

With respect to the recovery of the NBHCP Covered Species, it is the intent of the NBHCP to contribute to such recovery, consistent with the Plan's other goals and purposes. Thus, it is necessary to strike a balance between the obligations of the NBHCP to fund and provide mitigation and the obligations of the Wildlife Agencies with respect to recovery plans for Covered Species. Adaptive Management allows the NBHCP Operating Conservation Program to be adjusted and modified to improve its effectiveness as mitigation for the impacts of Authorized Development on Covered Species. As such, certain changes suggested by recovery

plans may be incorporated into the NBHCP Operating Conservation Program in order to improve the mitigation being provided and as a result, coincidentally contribute to the recovery of species. However, the NBHCP and its Adaptive Management provisions are not to be confused with a recovery plan and are not intended to be a replacement for the specific measures contained in recovery plans which have a much broader purpose. Accordingly, funding of recovery plans is not intended to be provided through TNBC by way of the NBHCP and its Adaptive Management provisions.

The NBHCP will incorporate recommendations made pursuant to future recovery plans, monitoring results from the Plan Area, or new scientific information, and when such recommendations:

- A. Relate to the physical management of Mitigation Lands.
- B. Would improve the effectiveness of the NBHCP's Operating Conservation Program by identifying relevant new information, approaches, techniques, or species protection needs;
- C. Can be implemented within the NBHCP Plan Area;
- D. Fit within the overall intent, framework, are consistent with the NBHCP's biological goals and objectives and would not exceed the established Mitigation Ratio of the Plan; and
- E. Will not substantially sacrifice habitat values for Covered Species that are not addressed by the Recovery Plan.

## **2. Changes to Managed Marsh Component**

The greatest potential shift in conservation strategies anticipated to result from a future Giant Garter Snake Recovery Plan is a transition from rice cultivation to managed marsh. The managed marsh environment, in addition to enhancing giant garter snake habitat, would provide greater opportunities for TNBC to pursue restoration of Covered Species plants through the Site Specific Management Plan process and the subsequent managed marsh restoration efforts.

The NBHCP establishes an initial habitat enhancement obligation for giant garter snakes and allows adjustments to be made based on the adopted Giant Garter Snake Recovery Plan, as amended, monitoring conducted in the Plan Area or in response to new scientific information.

Currently the Operating Conservation Program provides that 50% of the Mitigation Land is to be in rice production while 25% is to be enhanced to managed marsh (the balance of the Mitigation Land (25%) will be managed as upland habitat). Thus, 75% of the Mitigation Land will provide habitat for wetland associated species. Should a Giant Garter Snake Recovery Plan, monitoring results from the Plan Area or new scientific information precipitate such a conversion, the USFWS shall provide written notification to the Permittees supported by evidence and technical analysis, requesting that these percentages be modified within the ranges



identified in Table VI-4 and applied prospectively to future Mitigation Land acquired after the availability of such information. If adoption of a Recovery Plan precipitates the adjustments in managed marsh composition, Mitigation Lands acquired after such written notification may be required to be managed and enhanced with a higher proportion of managed marsh, if the recovery plan, supported by monitoring results or scientific information indicates a higher proportion of managed marsh 1) will improve the effectiveness of the NBHCP's Operating Conservation Program to meet its biological goals and objectives, 2) is beneficial to the snake, and 3) will not adversely affect any other listed Covered Species.

**TABLE VI – 4  
PROPORTION OF MANAGED MARSH HABITAT**

<b>NBHCP Condition</b>	<b>Minimum-- Levels which apply at the start of the NBHCP.</b>	<b>Maximum -- Levels which may apply to future Mitigation Land acquisitions<sup>1</sup></b>
Proportion of mitigation land as Managed Marsh	25%	75%

<sup>1</sup> The maximum levels would apply to future TNBC Reserve Land (including Mitigation Land) acquisitions which occur after written notification from USFWS indicating the results of monitoring in the Plan Area, in response to new scientific information, or Giant Garter Snake Recovery Plan adoption so warrants the shift in level.

Thus, the NBHCP may be adapted to require TNBC to increase the proportion of managed marsh enhanced on Mitigation Lands which are acquired by TNBC after Recovery Plan adoption, if such changes are supported by monitoring results from the Plan Area or new scientific information. Should a Giant Garter Snake Recovery Plan, monitoring results from the Plan Area or new scientific information precipitate such a conversion, and should USFWS provide written notification supported by evidence and technical analysis, then future Mitigation Lands acquired after such USFWS notice may be enhanced and managed by the TNBC to provide up to 75% managed marsh on the balance of such Mitigation Lands.

Modifications to the NBHCP based upon information within a future adopted Giant Garter Snake Recovery Plan or by other future recovery plans approved for listed Covered Species, are considered a part of the Plan's Adaptive Management Program, consistent with the limitations and requirements of Sections VI.F, VI.H, VI.K and VI.L. Information collected through the NBHCP Biological Monitoring Programs and the presence within the Natomas Basin of the Covered Species addressed by the Recovery Plan shall be considered in determining specific revisions to the NBHCP in response to recovery plan recommendations.

**3. Swainson's Hawk Recovery Plan**

Results of any future adopted CDFG Swainson's Hawk Recovery Plan may also suggest or result in the need for NBHCP modifications to management practices upon Mitigation Lands. Although such modifications are unlikely to be as potentially significant or extensive as those that might be made for the giant garter snake, the NBHCP nevertheless allows for appropriate

revision to the Swainson's hawk conservation strategy based on any such plan. Modifications to the NBHCP based on information within a Swainson's Hawk Recovery Plan are considered a part of the Plan's Adaptive Management Program consistent with the limitations and requirements of Sections VI.F., IV.H., VI.K., and VI.L. Information collected through the NBHCP Biological Monitoring Programs shall be considered in determining specific revisions to the NBHCP in response to recovery plan recommendations.

## **I. NBHCP OVERALL PROGRAM REVIEW AT 9,000 ACRES OF DEVELOPMENT**

The NBHCP recognizes that a variety of uncertainties exist in the Plan, including: (1) the levels of development that will actually occur in the Basin, especially in southern Sutter County; (2) program adaptations that may be necessitated by the future Giant Garter Snake Recovery Plan; (3) possible development of a state (or federal) Swainson's Hawk Recovery Plan, and the possible need for program revisions as a result of such a plan; and (4) the precise extent, location, and effectiveness of the habitat reserve system as it is developed under the Plan. The NBHCP's Adaptive Management provisions are designed to address many of these uncertainties. In addition, the NBHCP establishes a comprehensive Overall Program Review designed to evaluate the performance and effectiveness of the Plan, to be conducted when and if Authorized Development within the Basin allowed by the ITPs for the City and County reaches a total of 9,000 acres (the "Overall Program Review").

This Overall Program Review will be triggered at the point Urban Development Permits covering a total of 9,000 acres of development in the Natomas Basin have been issued by the Land Use Permittees and by Sacramento County for the Metro Air Park. During the review, up to but not more than, an additional 3,000 acres of additional urban development may be approved. In other words, no more than a total of 12,000 acres of urban development shall be approved prior to completion of the Overall Program Review.

The Overall Program Review shall specifically address the following factors: (1) status and population trends of the giant garter snake, Swainson's hawk, and all other Covered Species within the NBHCP area, especially with respect to those biological factors that are directly affected by Covered Activities under the Plan; (2) status and effectiveness of the Plan's habitat reserve system, including its buffer and setback requirements; (3) the Plan's success in meeting the 2,500-acre and 400-acre minimum habitat block size requirements; (4) the status and effectiveness of the Plan's funding mechanisms; and (5) the relative status and distribution of developed lands and reserve lands within each of the Land Use Agency jurisdictions (the City of Sacramento, Sutter County and MAP); and (6) the success of the 25% managed marsh/50% rice/25% upland for supporting giant garter snake, Swainson's hawk, and other Covered Species; and (7) compliance of the Water Agencies (RD1000 and Natomas Mutual) with approved canal and ditch maintenance practices.

The purpose of the Overall Program Review is to evaluate the NBHCP's status as described above, its effectiveness, and its equitableness with respect to the relative responsibilities of the Plan borne by each of its Permittees, in light of the Plan's original intent and expectations. It is not to introduce significant new goals or objectives into the NBHCP not

contemplated or intended by the Permittees as described in this HCP, unless any such new objectives are jointly agreed to by the Permittees and the Wildlife Agencies. If the findings of the Overall Program Review, monitoring results from the Plan Area, new scientific data or an adopted Giant Garter Snake Recovery Plan indicate, the managed marsh component of Mitigation Lands may be increased to 75% within sites acquired subsequent to such review, results, determination or Recovery Plan adoption. Such increase would only be made following written notice from USFWS, supported by documentation and technical analysis, supporting the need for an increased percentage of managed marsh.

The review shall be conducted through consultation among all affected Permittees, TNBC, the USFWS, and the CDFG, which shall be known collectively as the NBHCP Review Board. TNBC shall inform the other parties, in writing, when the 9,000-acre trigger for the Overall Program Review has been reached and shall initiate and coordinate the review.

Results of the review shall consist of a written report presenting the conclusions of the Review Board. These conclusions shall address each of the factors described above. The report shall also present recommendations consisting of the following or of a combination thereof: (1) a recommendation that the NBHCP is functioning as intended and that no revisions to the Plan's measures, in addition to those originally set forth, are necessary; (2) a recommendation that the NBHCP is significantly in need of correction and the specific corrective measures that are needed; and (3) a recommendation as to whether such corrections should be treated as an NBHCP revision under the Plan's Adaptive Management provisions, or whether the corrections exceed the scope or intent of the Adaptive Management process and should be treated as an amendment of the Plan's associated Section 10(a)(1)(B) and Section 2081 permits. Upon completion of the review, the USFWS and CDFG shall, depending on the results, either document in writing that the NBHCP is functioning as intended and that no Plan revisions or permit amendments are necessary, or assist the Permittees in revising the NBHCP and, if necessary amending their respective permits, as needed. The Review Board's report shall be made available to the public for review and comment before written findings are made by USFWS and CDFG. If it is determined that substantial revisions to the NBHCP need to be made through amendment of the permits, all statutory and regulatory requirements including those regarding public notice and review under ESA, CESA, NEPA and CEQA shall be completed.

#### **J. INDEPENDENT MID-POINT REVIEWS FOR LAND USE AGENCIES**

In addition to the NBHCP Overall Program Review once 9,000 acres of Authorized Development has been approved, both the City of Sacramento and Sutter County will conduct Independent Mid-Point Reviews as development occurs within each Land Use Agency's Permit Area. Thus, up to three program reviews (one overall and two independent reviews) may be completed, depending on the timing of development within the City and Sutter. Independent Mid-Point Reviews provide greater assurances that NBHCP objectives are being achieved in the event that (i) development occurs more rapidly than projected within the Permit Area of one of the Land Use Permittees or, (ii) one of the agencies should cease to participate in the NBHCP. The Independent Mid-Point Reviews conducted by the City of Sacramento and Sutter County shall address each of the factors noted for the 9,000 acre Overall Program Review above, as well

as the expanded evaluation of progress on the 2,500 acre preserve, and minimum preserve size described in Section IV.C.1.e above.

If the findings of any of the Independent Mid-Point Reviews, ongoing monitoring results, new scientific data or an adopted Giant Garter Snake Recovery Plan so dictate, the managed marsh component of Mitigation Lands may be increased to 75% within sites acquired subsequent to such review, results, determination or Recovery Plan adoption. Such increase would only be made following written notice from USFWS, supported by documentation and technical analysis, supporting the need for an increased percentage of managed marsh.

The City Independent Mid-Point Review will begin once Urban Development Permits for 4,000 acres of Authorized Development have been approved within the City's Permit Area and the review will be completed before the City has approved Urban Development Permits for 5,500 acres of development under the NBHCP. Sutter County will begin its Independent Mid-Point Review once the County has approved Urban Development Permits for 3,500 acres of Authorized Development permits and will complete the Independent Mid-Point Review before the County approves Urban Development Permits for 5,000 acres of development under the NBHCP.

Should the timing of the City of Sacramento's Independent Mid-Point Review, Sutter County's Independent Mid-Point Review and/or the overall 9,000 acre program review coincide, then the affected Land Use Permittee(s) may request the program reviews be combined under a single evaluation. Such request shall be made to USFWS and CDFG and may be granted at the discretion of the USFWS and CDFG. Any revisions to the NBHCP made as a result of either Independent Mid-Point Review shall apply to both Land Use Agencies (and MAP POA) unless the change affects only a particular Permittee.

#### **K. UNFORESEEN CIRCUMSTANCES/"NO SURPRISES"/CHANGED CIRCUMSTANCES**

"Unforeseen circumstances" is defined at 50 C.F.R. 17.3 as changes in circumstances affecting a species or geographic area covered by a conservation plan that could not reasonably have been anticipated by plan developers and the USFWS at the time of the NBHCP's negotiation and development, and that result in a substantial and adverse change in the status of the Covered Species.

On February 28, 1998, the U.S. Fish and Wildlife Service published a final rule codifying its "No Surprises" policy into federal regulation (63 FR 8859). The "No Surprises" Rule states, in part, that:

"In negotiating unforeseen circumstances, the [Service] will not require the commitment of additional land, water or financial compensation or other natural resources beyond the level otherwise agreed upon for the species covered by the conservation plan without the consent of the permittee.

If additional conservation and mitigation measures are deemed necessary to respond to unforeseen circumstances, the [Service] may require additional

measures of the Permittee where the conservation plan is being properly implemented, but only if such measures are limited to modifications within conserved habitat areas, if any, or to the conservation plan's operating conservation program for the affected species, and maintain the original terms of the conservation plan to the maximum extent possible. Additional conservation and mitigation measures will not involve the commitment of additional land, water or financial compensation or restrictions on the use of land, water, or other natural resources otherwise available for development or use under the original terms of the conservation plan, without the consent of the Permittee." (50 C.F.R. Sections 17.22(b)(5)(iii) and 17.32(b)(5)(iii).)

The assurances contained in the No Surprises rule apply only "where the conservation plan is being properly implemented, and apply only with respect to species adequately covered by the conservation plan."

For purposes of the No Surprises assurances, the term "operating conservation program" shall mean the specific conservation, mitigation, and management measures provided under the NBHCP to minimize and mitigate the impacts of incidental take of the Covered Species.

a. Relevant Factors

Pursuant to the No Surprises Rule, in determining whether Unforeseen Circumstances exist, the USFWS shall consider, but not be limited to, the following factors: (1) the size of the current range of the affected species; (2) percentage of range of Covered Species adversely affected by the NBHCP; (3) percentage of range for affected Covered Species conserved by the NBHCP; (4) ecological significance of the portion of the range affected by the NBHCP; (5) level of knowledge about the affected species and the degree of specificity of the Covered Species' conservation program under the NBHCP; and (6) whether the failure to adopt additional conservation measures would appreciably reduce the likelihood of survival and recovery of the affected Covered Species in the wild. (50 C.F.R. §§ 17.22(b)(5)(C) and 17.32(b)(5)(C).)

b. Burden and Documentation

Pursuant to the No Surprises Rule, the USFWS shall have the burden of demonstrating that Unforeseen Circumstances exist based upon the best scientific and commercial data available. The USFWS must clearly document its findings and base its findings on reliable technical information regarding the status and habitat requirements of the affected species. (50 C.F.R. §§ 17.22(b)(5)(C) and 17.32(b)(5)(C).)

c. Advance Notice

Except where there is a substantial threat of imminent, significant adverse impacts to a Covered Species, the USFWS shall provide at least sixty (60) calendar days notice of a proposed finding of Unforeseen Circumstances, during which time the USFWS shall meet with the Permittees to discuss the proposed finding and to provide the Permittees with an opportunity to submit information to rebut the proposed finding.

d. Limits on Additional Conservation Measures

Pursuant to the No Surprises Rule, if the USFWS makes a finding of Unforeseen Circumstances in accordance with the procedures described in this section, and determines that additional conservation measures are warranted, such additional conservation measures shall conform to the maximum extent possible to the original terms of the NBHCP, and shall not involve the commitment of additional land, water or financial compensation or additional restrictions on the use of the land, water or other natural resources beyond the level otherwise agreed upon in the NBHCP for the Covered Species without the Permittees' consent.

**1. Applicability of the "No Surprises" Protections**

In light of the NBHCP Adaptive Management provisions (see Section VI.F), program adaptations for recovery plans (see Section VI.H), Overall Program Review (see Section VI.I), and individual Land Use Agency's Independent Mid-Point Review (see Section VI.J), which allow certain changes to occur throughout the term of the plan, it is necessary to identify aspects of the NBHCP Operating Conservation Program that are subject to the "No Surprises" rule and for which the USFWS may not require additional mitigation for an unforeseen circumstances finding without the consent of the Permittees. The NBHCP Adaptive Management provisions allow the NBHCP to be revised as a result of new recovery plans, new research into the Covered Species, and ongoing monitoring programs. As a result, revisions may be made to the NBHCP's Operating Conservation Program, including reserve land management and enhancement, and monitoring of the Covered Species pursuant to the Plan's Adaptive Management provisions, that may result in additional mitigation provided such revisions meet the requirements of Section VI.E and VI.F. Because such revisions and changes are provided for under the Plan, they are not subject to the restrictions on additional mitigation contained in the No Surprises Rule.

The following elements of the plan are not subject to revision as part of the NBHCP's Adaptive Management provisions or as a result of the overall or individual jurisdiction reviews: (1) the 0.5-to-1 mitigation ratio; (2) the 20 percent limit on the amount of reserve lands that may be potentially acquired out of Basin in Area B; (3) the 75 percent limit on the amount of reserve lands to be converted to managed marsh; (4) any other change not currently described in or provided for under the Adaptive Management program, Changed Circumstances, or other elements of the NBHCP's Operating Conservation Program that would significantly increase the Plan's costs or restrictions on land otherwise available, including any such changes resulting from the 9,000-acre review Overall Review process or Independent Mid-Point Reviews; and (5) any other change not currently described or provided for under the Adaptive Management provisions or other elements of the NBHCP that would significantly affect the Water Agencies' costs or place additional restrictions on the ability of the Water Agencies to provide flood control and irrigation services.

**2. Changed Circumstances**

Another category of circumstances under the federal "No Surprises" rule is "changed circumstances." This term is defined under the rule as "changes in circumstances affecting a species or geographic area covered by a conservation plan that can reasonably be anticipated by

plan developers and the [USFWS] and that can be planned for (e.g., the listing of a new species, or a fire or other natural catastrophic event in areas prone to such events.)" 50 C.F.R. 17.3. Changed circumstances will be addressed through the Adaptive Management provisions (Section VI.F) or as described below.

a. Listing of New Species

If currently unlisted species that are addressed in the NBHCP as Covered Species are listed subsequent to issuance of the NBHCP's associated Section 10(a)(1)(B) permit, no action is required of the Permittees under ESA. This is because all Covered Species are named on the federal permit and, under the terms of the permit, permit coverage for any unlisted Covered Species will become effective upon the final listing of any such species under the ESA.

Under CESA, a covered species which becomes listed would be subject to separate confirmation by CDFG that substantial evidence demonstrates that the Section 2081 Permit will continue to meet the standards in California Fish and Game Code Section 2081 (b) and Title 14 of the California Code of Regulations, Section 783.4 for the Additional State Protected Species. (See also Section 6.2.4 of the Implementation Agreement).

However, currently unlisted species that are not addressed as Covered Species in the NBHCP will not be included in the permit and will not be so treated in the event of listing. To the extent the USFWS or Permittees determine that any such species would likely be taken, jeopardized, or the critical habitat, if any, of such species adversely modified or destroyed, as a result of the Covered Activities, the Permittees will implement the "no jeopardy/no take/no adverse modification" measures identified by USFWS until such time as the Permittee's federal permit is amended to obtain permit coverage for these species or until the USFWS notifies the Permittee that such measures are no longer needed to avoid jeopardy to, take of, or adverse modification of the critical habitat of, the non-Covered Species.

*Unforeseen Circumstances:* There are no unforeseen circumstances associated with the listing of new species under the ESA.

b. Availability of New Scientific Information

Because the Adaptive Management provisions of this document, Section VI.F provide for the accumulation and integration of new scientific information and the results of monitoring in the Plan Area into the NBHCP's operating conservation program over the life of new permits, the information is not considered a changed circumstance under the NBHCP.

c. Approval of New Recovery Plans

Section H of this Chapter, Program Adaptation for Recovery Plans, provides during the life of the permits for the integration of peer reviewed new scientific and other information from future adopted recovery plans into the NBHCP's Operating Conservation Program, including recommendations in a future giant garter snake recovery plan requiring adjustments in the amount of managed marsh on habitat reserve lands. The integration of such peer-reviewed new

scientific and other information is not considered a changed circumstance. Funding for such adjustments will be provided through adjustments to the Mitigation Fees and in addition, if TNBC determines through appropriate economic analysis that management in perpetuity of the Mitigation Lands will not require all interest generated from the O&M Endowment component of the Mitigation Fees, funds may also be provided by the adopted O&M Endowment Fund.

d. Problems in Implementing the HCP

Certain types of issues may develop during implementation of the NBHCP. These could include funding deficiencies, possible lack of effectiveness in some of the Plan's mitigation approaches and lands, deficiencies in certain aspects of the Plan's monitoring program, and problems in coordinating the activities of the Permittees and in distributing the location of mitigation lands equitably among the several jurisdictions. The NBHCP Permittees, Service and CDFG have planned for these types of circumstances and have addressed the potential for such occurrences in the NBHCP. The NBHCP's Overall Program Review, individual Land Use Agencies' Independent Mid-Point Reviews, regular TNBC Board or NBHCP TAC meetings, and the year end meeting between the Wildlife Agencies and Permittees are designed as mechanisms to address these circumstances. Therefore they are not considered changed circumstances.

*Unforeseen Circumstances:* There are no unforeseen circumstances associated with the implementation problems of the NBHCP, as described above.

e. Fire or Flood

Natural phenomena such as wildfires and floods can result in significant adverse consequences to the NBHCP's Covered Species and their habitats. The likelihood of such occurrences depends to a large extent on the location of the HCP and the history of such events in a given region. In the NBHCP Plan Area, the risk of wildfire affecting Covered Species habitats or mitigation lands is low. This is because the land use types in the area—primarily intensively managed agriculture, would not typically support uncontrolled or extensive wildfire events, compared to chaparral, forest, or similar habitats.

However, there is a significant risk of flood events in Sacramento County, to judge by extensive flooding that occurred in the area in 1986, 1997, and other years.

The effects of floods on the NBHCP's Covered Species and on mitigation lands established under the Plan would depend on several factors, including the severity of the flood event, its duration, and the type of habitat affected. Overall, the adverse effects of flood events on the NBHCP's Covered Species and mitigation lands, if they occur, are expected to be relatively minor. This is because habitat mitigation lands established under the NBHCP, croplands, riparian corridors, wetlands, and some grasslands and woodlands, naturally experience periodic flooding and are capable of absorbing the effects of flooding with minimal or transient damage. It is also because many of the Plan's Covered Species are either adapted to flooding (e.g., the giant garter snake and northwestern pond turtle), would likely not be present or nesting during winter flood events (e.g., Swainson's hawk, and burrowing owl), or are capable



of fleeing the harm of such events (e.g., white-faced ibis, bank swallow, and tricolored blackbird).

However, in some cases flood damage to NBHCP mitigation lands could be significant, and could include crop damage, sedimentation, downed trees and shrubs, and deposits of debris. Therefore, the following conditions shall apply should flooding occur in the NBHCP Plan Area during the term of the permits:

- (1) If such flooding affects any NBHCP mitigation lands, TNBC, in consultation with the Wildlife Agencies' representatives on the Technical Advisory Committee (TAC), shall assess the extent of the damage. TNBC shall submit a report summarizing the nature and extent of such damage to the Wildlife Agencies within 60 days of the cessation of the flood. The report shall address any damage to protected habitats on the mitigation lands and any known or suspected impacts to Covered Species occupying such lands.
- (2) If damage to mitigation lands is such that corrective action is determined to be needed, as assessed by TNBC and with concurrence of the Wildlife Agencies' representatives on the TAC, TNBC shall, within 30 days of submission of the report described above, consult with the Wildlife Agencies. Together, TNBC and the Wildlife Agencies shall develop a plan for implementing any necessary measures to correct for flood damage, which measures shall include, but not be limited to, the removal of sediment or debris, land recontouring, replanting vegetation, and any other measures determined by TNBC and the Wildlife Agencies to be necessary to maintain the affected area's habitat values. The plan shall also address any additional funding beyond the management funds already identified under the Plan needed to implement such measures. TNBC will implement the approved plan. Funding for restoration following flooding shall be provided through TNBC, with funds provided as described in Section VI.B above, unless funded by another source.

*Unforeseen Circumstances - Flooding:* A flood event greater than the 200-year event has not occurred in the last 100 years for the Sacramento or American Rivers in the vicinity of the Natomas Basin. The potential damage from such an event is not foreseeable, nor predictable. Therefore, a flood and the damage resulting from an event greater than a 200-year event shall be considered an Unforeseen Circumstance.

f. Invasion of Non-Native Species both Plant and Animal

It is possible that the habitat reserves may become infested with non-native plant and/or animal species which could impact the quality of the wetland and upland habitat, although the management plans developed for the habitat reserves are required to include measures to prevent such infestations and thus the establishment of a major infestation should be low. A major infestation of fast growing weed species such as giant reed, Johnson grass, etc., can severely restrict water movement in wetlands and reduce habitat quality. The invasion of yellow star thistle in uplands can render fields useless for foraging animals. Large infestations of weedy species can become extremely expensive to control and could heavily tax the mitigation fund. Similarly there may be an invasion of non-native animals species which either prey on Covered Species or degrade habitat quality. A control program to eliminate the problem species can also be expensive.

If a pest plant/animal infestation results in substantial impacts to habitat reserves, as assessed by TNBC, with the concurrence of the Wildlife Agencies, such that it cannot be adequately handled under the existing operating budget, TNBC shall prepare a report which describes the extent of the problem, identifies a range of remedial actions, and includes a cost analysis for funding a control program. The report shall be submitted to the Wildlife Agencies for approval. TNBC shall implement the measures recommended in the approved report. Funding for recovery measures related to invasive plants or animals shall be provided through TNBC, with funds provided as described in Section VI.B above, unless funded by another source.

*Unforeseen Circumstances:* Due to the well documented national problem of invasive non-native plants and animals, and their effects on native vegetation and wildlife, no unforeseen circumstances exist for this event.

g. Changes in Water Availability

The irrigation of wetland reserves in the Natomas Basin relies on continuous water supplies that are generally provided by Natomas Mutual. If circumstances change and Natomas Mutual is no longer able to provide the same level of water service or ceases to provide irrigation water deliveries in the Natomas Basin, the Covered Species and their habitat could potentially experience a significant impact. Considered herein are changed circumstances that could result in the event of either temporary or long-term reductions in the delivery of irrigation water by Natomas Mutual. General water availability and optional sources for reserve irrigation is discussed in Section IV.D.4.c.

In recent years, Natomas Mutual has installed sophisticated improvements to allow substantial increases in water recirculation within the Natomas Basin. Utilizing this infrastructure, Natomas Mutual has, in recent years, been able to serve all of their water users fully during periods of drought-related water supply reductions. Thus, during short-term periods of drought, water supplies for TNBC reserves are reasonably anticipated to be adequate due to the seniority of the water rights within the Basin and Natomas Mutual's operations that can limit outflows from the Basin and increase internal recirculation.

If a prolonged drought occurs such that the maintenance of managed wetlands are in jeopardy (i.e., a drought lasting longer than 5 years) as assessed by TNBC and with concurrence of the Wildlife Agencies, TNBC shall prepare a report that explains what effects the drought is having on the NBHCP's Covered Species and mitigation lands. The report, to be submitted to the Wildlife Agencies for approval, shall identify available measures, if any, needed to assure that the basic habitat requirements for the protected species are being met. TNBC shall implement the approved report. The report shall also address any funding needed to implement such measures. Funding for drought recovery measures shall be provided through TNBC, with funds provided as described in Section VI.B above, unless funded by another source.

*Unforeseen Circumstances - Drought:* A drought lasting longer than 6 years has not occurred in recorded history for the Sacramento or American River Basins, in the vicinity of the Natomas Basin. The potential from such a drought is not foreseeable, nor predictable. Therefore, a drought and the damage resulting from such an event lasting longer than 6 years shall be considered an Unforeseen Circumstance.

*Unforeseen Circumstances - Natomas Mutual Discontinuing Service:* Natomas Mutual is a long-established privately held water company that provides irrigation water service within the Natomas Basin. As TNBC becomes a major land owner within the Basin, it will require substantial water deliveries that will assist Natomas Mutual with remaining an economically viable company. Additionally, substantial agricultural interests are anticipated to remain within the Natomas Basin throughout the life of the permit(s). The potential for Natomas Mutual to discontinue providing irrigation water service within the Basin is not foreseeable, or predictable because Natomas Mutual has provided irrigation service throughout the Natomas Basin since 1921 and there are no plans to discontinue service. As long as agricultural activities continue within the Natomas Basin, water supply service for irrigation purposes will be necessary. Consequently, if Natomas Mutual discontinues service it is reasonable to assume that another water company would provide irrigation service for such activities. Therefore, financial implications to TNBC resulting from Natomas Mutual discontinuing service within the Natomas Basin are considered an Unforeseen Circumstance.

#### h. Toxic Spills and Illegal Dumping of Toxic Materials

If one of these circumstances occurs, TNBC, with the concurrence of the Wildlife Agencies' representatives on the TAC, shall determine the extent of damage to the reserve(s) and identify and implement any appropriate remediation response. In addition, consultation with local environmental health departments or other emergency response personnel shall occur to determine the appropriate agencies and alternatives available for providing remediation. TNBC shall continue to maintain their lands in a manner that prevents toxic spills and illegal dumping of toxic materials. TNBC and the Land Use Agencies maintain all rights to prosecute and seek remediation from responsible parties for toxic spills and illegal dumping of toxic materials.

*Notification:* It is the duty of TNBC to notify the Wildlife Agencies, in writing, within seven (7) calendar days of becoming aware of an existing or potential Changed Circumstance.

*Unforeseen Circumstances:* Due to the geographic dispersion of the TNBC reserves within the Natomas Basin, it is unlikely that a toxic spill or illegal dumping of toxic substances would affect a substantial portion of the TNBC reserve system. Further, the Basin is served by one major roadway, Highway 99/70. This roadway poses the greatest potential for an accidental toxic spill of substantial volume. Due to the physical separation of the majority of TNBC reserves from Highway 99/70, as well as the standard practices for responding to major incidents upon state highways, such a spill would be unlikely to substantially affect the TNBC reserve system. If one of the circumstances described above occurs and results in damages to more than 20 percent of the total TNBC reserve lands, an Unforeseen Circumstance will have occurred.

i. Non Participation by a Land Use Agency within the Natomas Basin HCP

A changed circumstance may occur if one of the Land Use Permittees covered by the NBHCP either does not become a signatory to the IA, does not exercise its option to obtain Incidental Take Permits or is subject to revocation of its Permits for non-compliance. While the NBHCP is structured to ensure that mitigation will remain adequate to fully compensate impacts regardless of the number of participants (see Section VI.L.2, Severability), adjustments through adaptive management within the TNBC reserve system may be required to ensure that the type of habitat created by the reserve adequately compensates for and represents the type of habitat affected by Authorized Development within the participating Land Use Agency Permit Area. For example, Authorized Development within the City of Sacramento's Permit Area may have greater effect on upland species habitat (e.g., Swainson's hawk) than wetland species (e.g., giant garter snake), whereas Authorized Development in Sutter County may result in greater effects to wetland habitats than to upland habitats.

It is important to note that agricultural land use patterns change in response to various circumstances, including market fluctuations and soil capabilities. Additionally, there is an historic trend for rice production to be eliminated well in advance of urban development. The result of this trend is that, at time of urban development, it appears land to be developed is primarily either fallow or ruderal in character, when in fact the land may have been in rice production and providing wetland habitat up until one or two years prior to development. As such, this NBHCP relied upon the 1997 agricultural cover types as the base conditions to which the Operating Conservation Plan responds.

With the participation of both Land Use Agencies, the NBHCP reserve system, adaptive management and other management measures are effective in compensating and mitigating for the impacts for both of these different habitats and their associated Covered Species. If one Land Use Agency should choose not to participate, the NBHCP requires that an adjustment in habitat acquisition and management may be required to assure the provision of sufficient reserve lands and mitigation to offset fully the impacts resulting from Covered Activities within that Permit Area and to ensure the remaining Land Use Agency's impacts are adequately mitigated. In order to ensure that the reserve system, mitigation measures and enhancements of the plan remain responsive to the type of impacts, it nonetheless may be necessary to re-evaluate the type of habitat to be restored, created, enhanced or managed by the reserve system if one of the Land Use Permittees does not participate.

In the event this changed circumstance should occur, the participating Land Use Agency, in conjunction with the TAC and TNBC, shall review the existing and planned reserve system relative to the types of habitat which have been impacted and are projected to be impacted by the remaining Authorized Development. The existing Adaptive Management Plans and overall reserve management measures shall be reviewed and modified, as necessary, to ensure that the reserve lands are acquired in accordance with the NBHCP 0.5 to 1 mitigation ratio and to ensure that within that ratio, adequate management and enhancement activities are incorporated in the reserve system design to respond to any change in the type of habitat and associated species which will be impacted. The Wildlife Agencies shall approve all such changes. This may require that TNBC provide a greater proportion of upland enhancements and implement additional upland habitat management activities as specified in Section IV.C.4 on acquired reserve lands if the impacts associated with the Covered Activities of the participating Land Use Agency would result in greater effects to upland species habitat than wetland habitats. Similarly, if the Covered Activities would result in the loss of more wetland habitat, the TNBC would adjust the reserve management techniques to focus on wetland habitat enhancement and management activities as set for in Section IV.C.3. The Adaptive Management Plan shall be developed by TNBC, in consultation with the TAC to ensure that adaptive management changes do not result in adverse impacts to other Covered Species. The changes would be approved as part of the plan's Adaptive Management Program. In order to avoid significant imbalances in the type of habitat created relative to the impacts by type of habitat and Covered Species, Mid-Point Reviews will be conducted. At the Overall Program Review and the Independent Mid-Point Reviews, impacts and habitat types will be compared and any imbalances in the reserve habitat type will be identified and responded to in policies for both adaptive management and future reserve acquisition and establishment. In this way, the monitoring program for both compliance and effectiveness monitoring will interact with the reserve design and management to ensure successful and responsive habitat mitigation to impacts. (See also Biological Monitoring Section VI.E and Review Sections VI.I and J.)

*Unforeseen Circumstances:* If one of the Land Use Agencies either does not participate in the NBHCP or their Permits are revoked, and the Wildlife Agencies determines that there are no feasible alternatives available for reserve enhancement or acquisition within the Natomas Basin or through Out-of-Basin reserve acquisitions that will address the type of habitat impacted by the participating Land Use Agency, an unforeseen circumstance may occur. For example, if one of the Land Use Agencies should cease participation in the NBHCP after substantial build-out of the reserve system which has occurred in order to provide mitigation for impacts due to Authorized Development associated with previously issued urban development permits, and substantial changes to the reserve system are impractical or infeasible, an Unforeseen Circumstance will have occurred. This eventuality is highly unlikely, and therefore considered an unforeseen circumstance, for the following reasons:

- (1) Adoption of the NBHCP and execution of the associated Implementing Agreements commit the Land Use Agencies to implement the provisions of the NBHCP. There is no basis to assume that either Land Use Permittee will fail to fulfill their obligations under the NBHCP or cease participation under the NBHCP.

- (2) In order to issue urban development permits, the participating Land Use Agency Permittee must accept mitigation fees. Consequently, before Authorized Development proceeds, the participating Land Use Agency will be required to collect funds which will be used to acquire Mitigation Lands in order to offset the impacts of that Authorized Development. The participating Land Use Agency's collection of Mitigation Fees is independent of a decision by another Land Use Agency Permittee to choose whether or not to participate or continue participating in the NBHCP. Thus, TNBC will be responsible for acquiring Mitigation Lands and adjusting the reserves to compensate for the loss of habitat associated with urban development proceeding pursuant to the participating Land Use Agency's Permit.
- (3) The NBHCP includes requirements for Individual Mid-Point Reviews and an Overall Program Review. These reviews will include an analysis of whether the composition of habitat acquired and restored by TNBC reflects the composition of habitat impacted by Authorized Development. In the event TNBC reserves do not reflect the types of habitat impacted by Authorized Development, then the Operating Conservation Program would be adjusted accordingly to correspond to the habitat types impacted through the Adaptive Management provisions of the NBHCP.

#### **L. ENFORCEMENT, AMENDMENTS, HCP REQUIREMENTS**

##### **1. Enforcement of the Section 10(a)(1)(B) and Section 2081 Permits**

The provisions of the NBHCP are enforceable through the terms and conditions of the Section 10(a)(1)(B) permit and 2081 permit issued by the USFWS and CDFG, respectively, the NBHCP Implementation Agreement executed by the respective Permittees and governing federal and state laws and regulations.

###### **a. Notice**

Any notice required to enforce, amend, or evaluate the NBHCP and terms and conditions of the Implementation Agreement must be given to the Permittees by personal delivery or by certified mail/return receipt requested.

###### **b. Suspension/Revocation**

The USFWS or CDFG may suspend their respective Permits of any given Permittee if that Permittee fails to implement the NBHCP in accordance with the terms and conditions of the permits and as provided for under applicable regulations. Suspension or revocation of a Section 10(a)(1)(B) permit, in whole or in part, by the USFWS shall be in accordance with 50 CFR 13.27-29 and each individual Permittee's Implementation Agreement. Suspension or revocation of any permit issued by the CDFG based on the NBHCP and pursuant to Fish and Game Code Section 2081, subdivision (b), in whole or in part, shall be governed by the Implementation

Agreement executed by the CDFG, and sections 783.7 and 783.8 of Title 14 of the California Code of Regulations or other controlling legal authority in effect at the relevant time.

## 2. Severability

If one of the Land Use Agencies fails to obtain its Permits or has its Permits revoked for failure to comply with the NBHCP, the essential effect to the implementation of the NBHCP is that less Authorized Development is covered by the NBHCP. With regard to funding adequacy, the reduction in Authorized Development would result in a similar reduction in acres of mitigation land to be acquired, restored, managed, enhanced and administered as reserve lands in perpetuity. Therefore, TNBC would have adequate funding to continue to implement the NBHCP as it applies to the reduced Authorized Development and the Covered Activities within the participating Land Use Permittees' Permit Areas. Additionally, if TNBC were to implement the NBHCP under these circumstances, the NBHCP provides for adjustments to the Mitigation Fee as necessary, to fund the acquisition, restoration, creation, enhancement and management of reserves on a 0.5 to 1.0 mitigation basis. Economic and Planning Systems, has completed the Fee Analysis since the inception of the HCP's implementation and completed an Economic Analysis that shows the financial result on TNBC if less Authorized Development than the full 17,500 acres occurs (see Appendix A).

Additionally, should one of the Land Use Agencies not participate (see Changed Circumstances Section VI.K.2.i above), the NBHCP provides for adaptive management revisions to ensure that the mitigation program continues to be proportionate to the type of habitat and species affected.

## 3. Amendments and Revisions

There are two types of changes which may be made to the NBHCP and/or the NBHCP Permits and/or its associated documents:

Revisions  
Amendments

Any revisions or amendments shall be in accordance with all applicable legal requirements, including but not limited to the ESA, NEPA, CESA, CEQA, and any applicable state and federal regulations. TNBC shall process all amendments and revisions to the NBHCP, circulating proposed changes to all parties and, if appropriate, approving the amendment or revision by action of TNBC Board.

### a. Revisions (Changes to the NBHCP Not Requiring Amendment of the Plan and Incidental Take Permits)

Revisions to the NBHCP are changes to the Plan provided for under the Operation Conservation Program, including Adaptive Management changes and Mitigation Fee adjustments. These revisions would not result in operations under the NBHCP that are significantly different from those analyzed in connection with the NBHCP as approved, result in

adverse impacts on the environment that are new or significantly different from those analyzed in connection with the NBHCP as approved.

Revisions to the NBHCP may include, but are not limited to the following:

- (1) Updating Construction "Windows" for the NBHCP Covered Species. In the event that standard construction windows established for species covered by the NBHCP are revised by USFWS or CDFG, then such revised construction windows within the NBHCP shall be automatically revised.
- (2) Correction of any maps or exhibits to correct errors in mapping or to reflect previously approved changes in the ITPs or NBHCP.
- (3) Establishing and amending preconstruction survey methodologies, including modifying timing of NBHCP preconstruction survey methodologies.
- (4) Modifying existing or establishing new Incidental Take Avoidance Measures.
- (5) Modifying reporting protocols for Annual Reports.
- (6) Minor changes to survey, monitoring or reporting protocols.
- (7) Revising reserve enhancement and management techniques.
- (8) Establishing new reserve design criteria.
- (9) Revising reserve enhancement or management practices in conjunction with Site Specific Management Plans.
- (10) Approving recreational or income-generating uses for the NBHCP reserves that are consistent with the biological goals and objectives of the NBHCP Plan.
- (11) Making annual adjustments to the NBHCP Mitigation Fee to keep pace with inflation, or as necessary to fully implement the NBHCP's Operating Conservation Program, including its Adaptive Management provisions and responses to Changed Circumstances.
- (12) Changes to the membership of the TAC which retains representation from the Wildlife Agencies.
- (13) Any other modifications to the NBHCP that are consistent with the biological goals and objectives the NBHCP that the USFWS and CDFG have analyzed and agreed to, and that will not result in operations under the NBHCP that are significantly different from those analyzed in connection with the NBHCP as approved, result in adverse impacts on the environment that are new or significantly different from those analyzed in connection with the NBHCP as approved or result in take not analyzed in connection with the NBHCP as



approved including but not limited to: the approval or execution of agreements to facilitate execution and implementation of the NBHCP; action by the TNBC to delegate any of its duties specified by the NBHCP to a third party under its direct control.

The party proposing a revision to the NBHCP shall circulate to TNBC and the members of the TAC, the proposed revision along with an explanation of why the revision is necessary or desirable; and a description of why the party believes the effects of the proposed revision are more beneficial than or are not significantly different from those described in the NBHCP as originally adopted. TNBC shall be responsible for circulating all proposed revisions to the other Permittees for review, as appropriate. If TNBC, and the USFWS and CDFG representatives to the TAC agree to the proposed revision, and no other Permittee objects within the period prescribed by TNBC, TNBC shall process the revisions to the NBHCP, including, if appropriate, approving the revision by action of TNBC Board. Notwithstanding the above, all adjustments to the Mitigation Fee shall also require approval by the City and County before becoming effective within their respective jurisdictions.

If the USFWS or CDFG representative to the TAC objects that the proposed revision should be processed as an amendment to the NBHCP, then TNBC may choose to submit the proposed revision to USFWS and CDFG for review. The USFWS and CDFG shall each respond in writing to a proposed revision within sixty (60) calendar days of receipt of the request provided that sufficient supporting documentation is included with the request. The responses shall either concur with the proposed revision, or require that the proposed revision be processed as an amendment to the Plan and ITPs. If either the USFWS or CDFG require the proposed revision to be processed as an amendment, the agency shall include in their written response an explanation for its determination.

If approved by USFWS and CDFG, the revision shall become effective upon TNBC's receipt of USFWS' and/or CDFG's approval.

b. Amendments to the NBHCP

Amendments to the NBHCP will require amendment of Section 10(a)(1)(B) Permits and/or the Section 2081(b) Permits, and may require amendment of the Implementation Agreement. The following summarizes the types of changes which may require a Plan Amendment and the procedures for amending each approval.

Amendments may include any of the following types of changes to the NBHCP:

- (1) Proposed revisions required to be treated as Amendments pursuant to Section VI.L.3.b above.
- (2) The listing under the ESA or the CESA of a new species within the Plan Area which is not an NBHCP Covered Species but which may be affected by NBHCP Covered Activities and for which a Permittee seeks coverage under the Plan and ITPs.

- (3) Significant changes to the NBHCP which were not addressed in the NBHCP including, but not limited to the following:
  - a. Changes to the method for calculating compensation for Incidental Take, which would increase the levels of Incidental Take permitted for the NBHCP.
  - b. Changes to the Mitigation Fee except as otherwise provided for in the NBHCP in Section VI.B of the NBHCP.
- (4) Changes to the Covered Activities which were not addressed in the NBHCP as originally adopted, and which otherwise do not meet the Revision provisions above.
- (5) Extending the term of the NBHCP Permits past the 50-year term.
- (6) Extension of the NBHCP Permit Area boundaries to allow development under the NBHCP within the City's or Sutter County's portion of the Swainson's Hawk Zone beyond the City's designated 252 acres.
- (7) A proposal to increase the total Authorized Development permitted under the NBHCP beyond 15,517 acres (17,500 acres including MAP).

Specific procedures for requesting Amendments to the NBHCP, ITPs and the Implementation Agreement are described below.

c. Amendments to the Section 10(a)(1)(B) Permits

Following receipt of a complete application package for a proposed Amendment to a Section 10(a)(1)(B) Permit, the Service shall publish a notice of the proposed amendment to the Section 10 (a) Permit in the Federal Register as required by ESA. The Service shall use its reasonable efforts to process the proposed amendment within one hundred eighty (180) calendar days of publication, except where longer periods are required by law. The amendment of a Section 10(a) Permit shall be treated as an original permit application. Such applications typically will require submittal of a revised habitat conservation plan, a completed permit application form with appropriate fees, a revised Implementation Agreement, and preparation of an environmental review document prepared in accordance with the National Environmental Policy Act. However, the Parties acknowledge that specific document requirements may vary based on the nature of the amendment.

d. Amendments to the Section 2081 Permits

Amendments to the Section 2081(b) Permit shall be processed in accordance with applicable CESA regulations (California Code of Regulations, Title 14, Section 783.6(c)(4) and (c)(5).

#### 4. Function of NBHCP under ESA and CESA

##### a. Endangered Species Act Section 10(a)(2)(A)

Section 10(a)(1)(B) of the Endangered Species Act requires the applicant to submit a conservation plan in support of an incidental take permit application. Under Section 10(a)(2)(A) of the ESA, the conservation plan must contain the elements listed below in italics. Chapter and section references are included after each element description to show where each of these elements is covered in the NBHCP.

- (1) A description of the impacts likely to result from the proposed taking. See Chapter VII, Take Levels/Impacts of the Plan.
- (2) The steps the applicant will undertake to monitor, minimize, and mitigate such impacts; the funding that will be made available to implement such measures; and the procedures to deal with unforeseen circumstances;
  - a. *Monitor*. See Section VI.E, Biological Monitoring.
  - b. *Minimize*. See Section V.A.5.a, Measures to Reduce Take [of the giant garter snake]; Section V.A.5.b, Measures to Reduce Take [of the Swainson's hawk]; and Section V.A.5.c-r, for conservation strategies for other species.
  - c. *Mitigate*. See Chapter IV, Conservation Plan; Chapter V, Take Avoidance, Minimization and Mitigation; Chapter VI, Conservation Plan; and Chapter VII, Take Levels/Impacts of the Plan
  - d. *Funding*. See Section VI.B, Funding.
  - e. *Unforeseen Circumstances*. Under the NBHCP, there is considerable flexibility in TNBC's ability to manage reserve lands to maintain habitat values for Covered Species. Changes in cost for land acquisition or enhancement will be accommodated by adjustment in the Mitigation Fee as necessary within the terms of the NBHCP. The Plan also has Adaptive Management provisions allowing for adjustments to certain aspects of the conservation program through time (Section VI.F). See Section VI.K above for further discussion of how Unforeseen Circumstances relates to the NBHCP's requirements.
- (3) Alternative actions to such taking the applicant considered and the reasons why such alternatives are not being utilized. Alternatives to the NBHCP program were considered, including a No-Project Alternative, No Rice/Hunting Revenue Alternative, and Involvement of Agriculture Alternative (see Section VII). However, due to the ubiquitous presence of giant garter snakes in the rice fields

and in the man-made water supply and drainage system, alternatives that would avoid take completely are considered to be impractical.

- (4) Additional measures the USFWS may require as being necessary or appropriate for purposes of the plan. The NBHCP will be implemented through issuance of federal and state permits and the Implementation Agreements between each Permittee and the USFWS and CDFG.

Typically, an HCP should also include the following in order to provide supporting information for the statutory and regulatory HCP requirements.

- (1) Delineation of the Natomas Basin and individual permit areas for each Permittee. See Figure 2.
- (2) Collection and synthesis of biological data for all listed and other Covered Species being addressed in the HCP. See Chapter II, Biological Data
- (3) Identification of activities that may result in take. Incidental take may occur as a result of urban development within the Basin, during operation and maintenance of water conveyance facilities within the Basin, and during acquisition, restoration and management activities of TNBC. See Section I.N, for Covered Activities that may result in take.
- (4) Quantification of anticipated take levels either in terms of habitat loss (acres) or numbers of individual animals. See Chapter VII for the giant garter snake, Swainson's hawk, vernal pool species, VELB, tricolored blackbird, and other Covered Species.
- (5) An explanation of how the Plan minimizes and mitigates take to the maximum extent practicable. See Section VII and Appendix A.

b. California Endangered Species Act Section 2081 Permit

Under CESA, and pursuant to its statutory mandate as a trustee for the State's fish and wildlife resources, the CDFG is charged with the obligation to conserve endangered and threatened species, and species that are candidates for listing under CESA. The giant garter snake and Swainson's hawk, among other species, are such state listed species covered by the NBHCP.

The CDFG may authorize the take of certain protected amphibians, endangered, threatened, and candidate species under CESA consistent with Section 2081, subdivision (b), of the California Fish and Game Code. The specific requirements governing issuance of an incidental take permit by the CDFG are set forth in Section 2081, subdivision (b), and Title 14 of the California Code of Regulations, commencing with Section 783.0. The NBHCP is intended to meet all of the requirements governing an application for an incidental take permit under CESA and, as a consequence, to provide grounds for the CDFG to authorize the incidental take of State listed species covered by the NBHCP (See generally Fish & Game Code, § 2081, subds. (B)(1)-

(4),(c); Cal. Code Regs., tit. 14, §§ 783.2, 783.4). The NBHCP, as a consequence, identifies the extent of take that may result because of activities covered by the NBHCP, includes measures that minimize and fully mitigate all impacts on the State listed species that result from the otherwise lawful activities covered by the NBHCP, and includes an analysis establishing that implementation of the NBHCP and associated other activities will not jeopardize the continued existence of State listed species covered by the Plan, among other obligations. See Section VI.C above.

In the event that one or more of the Covered Species that are not State Protected Species are listed as an endangered species or threatened species or candidate species pursuant to the CESA, the Section 2081 Permit shall become effective to permit the Incidental Take of such species in connection with Authorized Development within each Permittee's Permit Area as of the date the species is accepted and designated as a candidate species pursuant to California Fish and Game Code section 2074.2 upon confirmation by CDFG that substantial evidence demonstrates that the Section 2081 Permit will continue to meet the standards in California Fish and Game Code Section 2081(b) and Title 14 of the California Code of Regulations, Section 783.4 for the Additional State Protected Species. In the event CDFG determines that such standards will not be met, and the Section 2081 Permit does not become effective upon the designation of an Additional State Protected Species as a candidate, threatened, or endangered species under CESA, CDFG shall accept and give due consideration to the application for a permit amendment or for a separate Section 2081 Permit authorizing Incidental Take for any such Additional State Protected Species. CDFG shall review and process the application for an amendment to the Section 2081 Permit or a new Section 2081 Permit to authorize Incidental Take of an Additional State Protected Species to ensure, to the extent consistent with CESA, that the Incidental Take authorization is effective at the time the Covered Species is accepted and designated as a candidate species under CESA.

c. Implementation of the NBHCP and IA

The NBHCP will be implemented by the City of Sacramento, Sutter County, RD 1000 and Natomas Mutual and TNBC through an Implementation Agreement(s) that will be executed by each Permittee. While each Permittee need not implement the NBHCP at the same time, it is anticipated that some or all NBHCP Permittees will proceed with execution of an IA following approval of the NBHCP, the IA and the associated environmental documents by USFWS and CDFG. Conversely, implementation of the NBHCP may occur over time, through periodic additions by local jurisdictions, agencies and entities, and the phased implementation of their respective NBHCP related obligations.