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IMPLEMENTATION ANNUAL REPORT

CALENDAR YEAR 2003

APRIL 30, 2004

Introduction

This report responds to a requirement of the 1997 Natomas Basin Habitat Conservation Plan (Section IV.G.4) and the Implementation Agreement (Section 5.2) which calls for an implementation annual report. It also responds to the 2003 Natomas Basin Habitat Conservation Plan (NBHCP) and Implementation Agreement (IA). The Conservancy operated approximately halfway through 2003 under the 1997 NBHCP and the remainder of the year under the 2003 NBHCP. Since the year was begun and operated under the 1997 NBHCP, the formatting for that plan will serve this year's report. However, for purposes of complying with the 2003 NBHCP, this year's report will also provide a check-list format showing early progress in following the 2003 NBHCP and IA. This comes in the form of Appendix C.

This is the fifth full-year annual report prepared by the Conservancy. As additional accomplishments of the Conservancy accumulate and responsibilities expand with the growth of mitigation acreage, more information will be available in future annual reports.

The goal of the presentation style of this report is to follow the reporting requirements of the NBHCP and IA. Since reporting compliance is a key element in the operations of the Conservancy, this format should be helpful to the reader in assuring all reporting requirements are fulfilled.

The Conservancy is pleased to present this report and to share the many positive steps it has taken towards successful implementation of the Natomas Basin Habitat Conservation Plan.

Those wanting further information may contact the Conservancy at:

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Swainson's hawk
(Buteo swainsoni)

Special Note

This version of the 2003 Implementation Annual Report contains only the main body of the report itself, and appendices are not provided. Copies of the appendices (see "Table of Appendices" in this report) are available from the Conservancy for public viewing should they be needed. Also, although this version is nearly identical to the official "record" version, there are slight variances. It is intended to provide a more readable and cost-effective presentation of the 2003 Implementation Annual Report. Those wishing copies of the appendices and official record version may obtain them for normal copying charges.

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Giant garter snake
(Thamnophis gigas)

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2003 Highlights
The Natomas Basin Conservancy

Acquisition

- The Conservancy acquired four (4) farms totaling 613.224 acres in 2003. This brings the total number of farms acquired to date to nineteen (19).
- The total acres of land acquired has grown to 3,421.7. A total of 3,099.124 acres is allocable to the City of Sacramento's participation in the NBHCP, and 316.749 is allocable to Metro Air Park's participation in the MAPHCP, of which 200 acres is supplemental mitigation. There are an additional 5.758 acres of conservation easements and one-tenth of an acre for other mitigation, both not required by an HCP.
- Great strides were made in reserve consolidation, including having assembled one contiguous tract of 1,324.274 acres. This means the Conservancy is well past the halfway point in having met its 2,500-acre contiguous tract requirement.
- Phase One environmental reports, American Land Title Association (ALTA) land surveys and aerial photographs were completed on each of the Conservancy's land acquisitions.

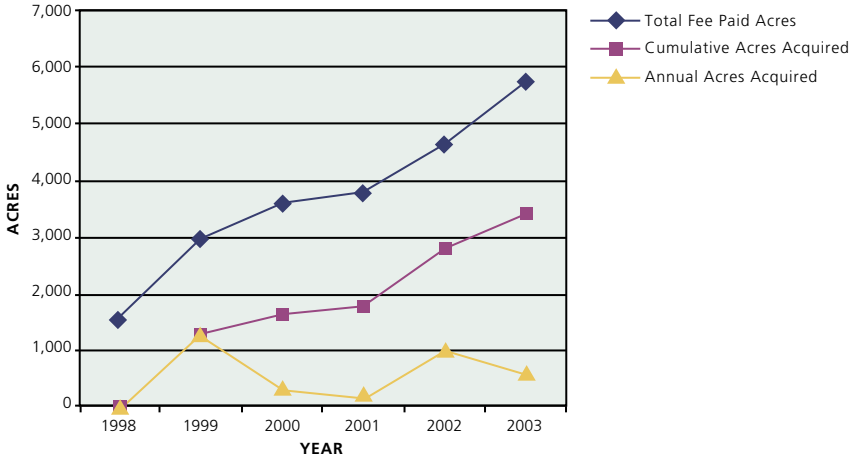
Programmatic

- The Conservancy prepared site-specific management plans in 2003.
- Swainson's hawk and giant garter snake monitoring reports were completed.
- A giant garter snake was found for the first time on managed marsh constructed by the Conservancy.
- The Conservancy issued a timely implementation annual report, budget, financial audit and all other required reporting documents during the year.
- Staff worked extensively with City of Sacramento and Sutter County officials on a revised NBHCP and with Metro Air Park Property Owners' Association on its HCP to facilitate Plan Operator coordination and implementation issues.
- Restoration and enhancement construction projects embarked upon in 2003 were the largest ever for the Conservancy. Projects were initiated on the following tracts: Natomas Farms, Souza, Lucich North and Frazer, with on-going work on Bennett South and Lucich South. In total, 391.6 acres of managed marsh were constructed in 2003, all of which were completed well ahead of schedule.
- Several communications and two personal visits (including on-site inspections) were conducted with UC Cooperative Extension experts in 2003. The primary discussion involved ways to expand Swainson's hawk foraging acreage through creative agronomic practices, water management and soil manipulation.
- A Swainson's hawk foraging crop study group was convened and developed a hierarchy of crops that could be planted in the Natomas Basin having value to Swainson's hawk. The work and attendant support literature is used as guidance to Conservancy land management efforts.

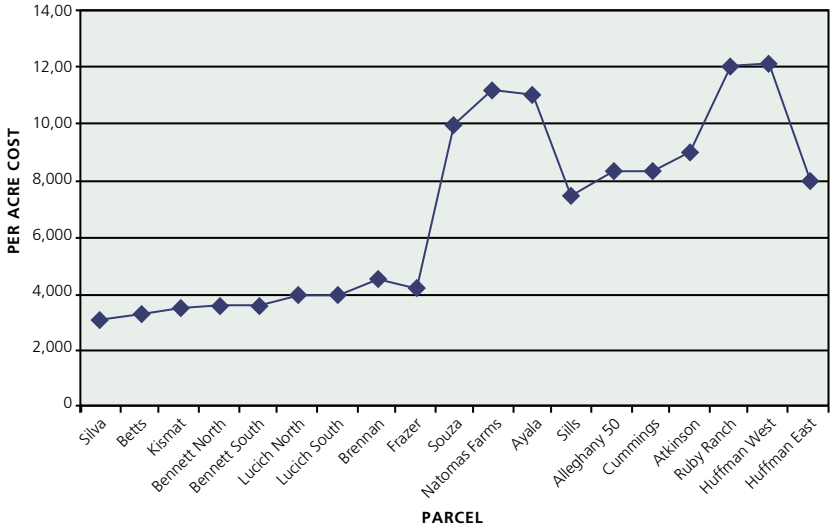
Budget and Finance

- The HCP finance model was updated and a fee increase was requested, granted and implemented.
- The Conservancy's endowment fund account continues to grow, and remains conservatively invested in order to insure its long-term viability.

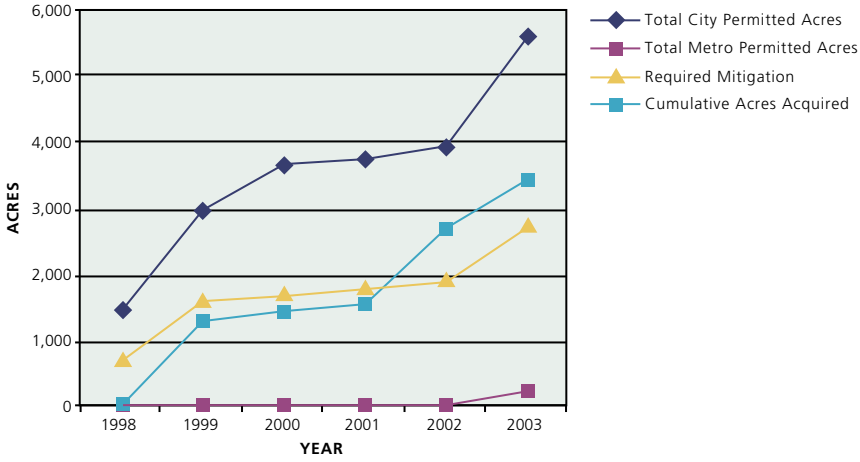
MITIGATION LAND STATS 1998 TO 2003



TNBC LAND ACQUISITION COST HISTORY



TNBC LAND ACQUISITIONS



The Natomas Basin Conservancy

Annual Report 2003[1]

I. Implementation Agreement Section 5.2

1. The number of acres of land within the Permit Area approved for Urban Development during the previous calendar year for which fees were collected.

During 2003, the number of acres of land within the permit area for which fees have been paid was 1,241.98. A full report on the number of acres permitted for urban development can be found in Appendix A. A report from the City of Sacramento's Accounting Department shows a schedule of acres for the covered period for which fees have been paid. The mitigation acreage is also mapped, and these maps can also be found in Appendix B.

Table 1
The Natomas Basin Conservancy
HCP Fee-Paid Acres

PERIOD	HCP FEE PAID ACRES*
Through December 31, 1998	1,515.66
January 1-December 31, 1999	1,465.47
January 1-December 31, 2000	598.07
January 1-December 31, 2001	242.09
January 1-December 31, 2002	777.81
January 1-December 31, 2003	1,241.98
All years through December 31, 2003	**5,641.09**

* Some mitigation land was dedicated in lieu of paying the Acquisition Fund portion of the NBHCP fee. Metro Air Park has paid fees on 190.4 acres, representing 100% of its Initial Phase, Tier 1 development. It has added 200 acres of mitigation land, and with its regular mitigation (116.763 acres), accounts for 316.763 mitigation acres (see totals for Huffman East and Huffman West tracts).

2. An estimate of the amount of land within the Permit Area actually grubbed or graded for Urban Development during the previous calendar year.

This City of Sacramento-provided information can be found along with the maps and related material in Appendix A. Metro Air Park designated 190.4 acres (MAP Initial Phase, Tier 1) as the number of acres graded for Urban Development in 2003.

3. The aggregate number of acres of Conservancy Land acquired in fee simple or encumbered with Conservation Easements by the Conservancy during the previous calendar year. The listing shall show the acreage and the proportion of lands which are Managed Marsh.

An accounting of the number of acres of Conservancy Land acquired in fee simple follows in Table 2. The listing showing land converted to Managed Marsh can be found in Table 3. The number of acres in managed marsh, uplands and rice approximately match the 25/25/50 acres allocation prescribed in the NBHCP.

[1] Highlighted text (**bold** or *italics*) follows the Natomas Basin Habitat Conservation Plan (NBHCP) and Implementation Agreement (IA) reporting requirements or guidelines. One exception is that illustrations may have headers and titles in bold which are not designated in the NBHCP or IA.

All Conservancy land acquired to date has been by fee simple acquisition, although at year's end, a conservation easement for a small amount of land owned by Reclamation District 1000 was completed. This conservation easement was necessitated by restoration and enhancement construction (managed marsh) on adjacent land. These easements total 4.6352 acres next to the Lucich South tract and 1.1227 acres next to the Bennett North tract. The acreage totals are used as an integral part of adjacent managed marsh projects constructed and managed by the Conservancy, but are not counted in the mitigation acreage totals found in Table 2. At the end of 2003, the Conservancy had completed its third year of managed marsh construction and is well on the way to conducting additional such conversions during 2004.

TABLE 2
THE NATOMAS BASIN CONSERVANCY
LAND ACQUISITION TALLY THROUGH 12.31.03

PROPERTY	DATE ACQUIRED	ACRES
Silva	1.7.99	159.200
Betts	4.5.99	138.992
Kismat	4.16.99	40.293
Bennett (C.L.)	5.17.99	226.675
Bennett (H&B)	5.17.99	132.486
Lucich North*	5.18.99	267.986
Lucich South	5.18.99	351.889
Brennan	6.15.00	241.376
Frazer	7.31.00	92.600
Souza**	7.2.01	44.680
Natomas Farms	7.9.01	96.460
Ayala	2.20.02	317.3674
Sills	7.15.02	575.5559
Alleghany 50	11.7.02	50.2601
Cummings	11.7.02	66.8307
Atkinson	6.12.03	205.397
Ruby Ranch	6.23.03	91.078
Huffman West***	9.30.03	181.003
Huffman East	9.30.03	135.746
Total* **		**3,415.8751**

* Earlier-stated possible reduction of the Lucich North of 20.68 acres owing to a claim by the Sacramento Area Flood Control Agency (SAFCA) has been resolved and 20.68 acres is now fully countable. A flood control easement exists on 2.5 acres of the Lucich North tract in favor of SAFCA.

**Agreement of Purchase and Sale requires 3.68 acres can be purchased back from the Conservancy on this parcel.

***The Huffman West tract and 19 acres of the Huffman East tract is for supplemental mitigation required by the Metro Air Park HCP. Without this, the total would be 3,215.8751. A further detailing of mitigation acreage can be found in Table 4.

The Conservancy adopted additions to its site-specific management plan (see Appendix K) in June 4, 2003 as additional mitigation lands were acquired and planned. The Conservancy conducted its largest ever restoration and enhancement construction season during 2003. Conservancy Board resolutions #03.03.04, #03.03.05, #03.09.04, #03.12.02 authorized construction activities on the Natomas Farms and Souza tract restoration and enhancement projects. Conservancy Board resolutions #03.05.04, #03.05.05, #03.12.02, pertained to restoration and enhancement construction authorization on the Lucich North and Frazer tracts. Resolution #03.12.02 included finishing authorization for restoration and enhancement work

on the Conservancy's Bennett South preserve. In all, 391.6 acres of managed marsh were included in the 2003 restoration and enhancement construction effort. (Greater detail on Conservancy Board resolutions can be found in Appendix P ("Minutes Recap") which lists all Board resolutions for 2003.)

For the future, the Conservancy's Board adopted resolution #03.09.02, which authorized commencement of the preparation of the site-specific management plan for the Ruby Ranch tract, and resolution #03.09.03 to do the same on the Atkinson tract. Site-specific land management plans were also authorized and begun on the Conservancy's Huffman East and Huffman West tracts (Board resolution #03.11.06).

TABLE 3
THE NATOMAS BASIN CONSERVANCY
MANAGED MARSH[a]/RICE/UPLAND TALLY

Tracts	surveyed acres	managed marsh planned[b]	managed marsh completed	rice[c]	upland	total of all planned uses
2001 Construction						
Betts/Kismat/Silva	338.48	192.51	192.51	0.00	145.97	338.48
Brennan	241.37	3.86	3.86	0.00	237.51	241.37
2002 Construction						
Lucich South[2]	351.89	16.45	16.45	334.00	1.44	351.89
Bennett North[3]	226.68	9.24	9.24	216.93	0.51	226.68
Bennett South	132.49	22.74	22.74	80.70	29.05	132.49
2003 Construction						
Lucich North[1]	267.99	247.31	0.00	0.00	20.68	267.99
Frazer	92.60	92.60	0.00	0.00	0.00	92.60
Natomas Farms	96.46	36.20	0.00	0.00	60.26	96.46
Souza[4]	44.68	0.00	0.00	0.00	44.68	44.68
2004 Construction						
Alleghany 50	50.26	0.00	0.00	0.00	50.26	50.26
Cummings	66.8307	25.00	0.00	0.00	41.83	66.83
Ayala	317.3674	20.00	0.00	282.30	15.07	317.37
Sills	575.5559	50.00	0.00	490.00	35.56	575.56
Total	2,802.6511	677.40	636.40	1,443.22	682.02	2,802.65
		24.17%		**51.49%**	**23.33%**	100.00%
Not yet scheduled						
Atkinson[5]	205.39	0.00	0.00	49.99	155.40	205.39
Ruby Ranch[5]	91.0780	25.00	0.00	0.00	41.83	66.83
Huffman West[5,6]	181.0030	20.00	0.00	282.30	15.07	317.37
Huffman East[5,7]	135.7460	50.00	0.00	490.00	35.56	575.56
Total	3,415.8751	715.91	244.80	1,403.93	682.82	2,802.65

[a] Managed marsh includes "associated uplands" as provided for in the NBHCP.
[b] "Managed marsh planned" represents managed marsh in approved SSMPs; those tracts in the "not yet scheduled" category are approved in an SSMP but have not been scheduled for construction.
[c] Fallow rice ground is counted in "rice" and not "upland" even though some upland benefits accrue.
1 Lucich North actual surveyed acres @ 267.986 subject to 2.5-acre easement in favor of SAFCA.
2 Lucich South managed marsh acreage does not include 4.6352-acre conservation easement which would add to totals.
3 Bennett North managed marsh acreage does not include 1.1227-acre conservation easement which would add to totals.
4 Exact allocations on the Souza tract is subject to a small "sale-back" provision.
5 The
6 This is supplemental mitigation attributable to MAPPOA and is dedicated to Swainson's hawk upland.
7 MAPPOA agreement states that 19 acres of Huffman East will be used for supplemental mitigation with Huffman West.

Additionally, with respect to showing the percentage of Conservancy-owned land in managed marsh, the Conservancy has generally attempted to avoid large concentrations of managed marsh development in the Swainson's hawk zone. This is primarily for two reasons. First, the Conservancy uses Swainson's hawk zone land judiciously because only so much of the Natomas Basin's 54,000 acres lie close to the Sacramento River and its existing populations of Swainson's hawks. It would be unfortunate to permanently convert land uses out of Swainson's hawk foraging into less desirable Swainson's hawk land uses given this strategic location. Therefore, it is projected that in the immediate future, the 25 percent "uplands" portion of the NBHCP's 25/25/50 land use allocations will be more heavily weighted towards upland. This strategy is a concerted effort to "lock in" the most sensitive and rarest of habitat types while they remain available, and further, to not take action that would reduce land uses that are valuable to the Swainson's hawk. The second reason is to comply with the NBHCP's requirements to coordinate efforts with Sacramento International Airport. The Airport has expressed its desire to minimize large bodies of open water in the flight zone areas of the Sacramento International. During 2003, all Conservancy land acquisitions were located in this Swainson's hawk zone.

4. A description of any lands conveyed by the Conservancy to the USFWS, CDFG, any other governmental entity, and to any other person or entity during the previous year.

The Conservancy has not conveyed any land to the USFWS or CDFG. As to other governmental entity conveyances, there was a conveyance in 2003, and this was the first ever such conveyance for the Conservancy. This amounted to granting a 2.5-acre flood control easement to the Sacramento Flood Control Agency (SAFCA) on the Conservancy's Lucich North tract. However, in doing so, the Conservancy acquired a total 20.68 acres which it would have lost. The terms of the agreement of purchase and sale ("AP&S") on the Lucich North tract called for the Conservancy to surrender the 20.68 acres to SAFCA upon consummation of an already-in-progress transaction between the seller of the Lucich North tract and SAFCA. Rather than forfeit the entire 20.68 acres as was required in the AP&S, the Conservancy negotiated with the seller and SAFCA, with the result being the Conservancy's ability to own fee title to the entire 20.68 while encumbering 2.5 acres of the total 20.68 acres with the above-mentioned easement.[1]

While not a conveyance *from* the Conservancy *to* a governmental entity, it seems appropriate to report on conveyances from a unit of government to the Conservancy in 2003. The Conservancy acquired a 4.6352-acre and a 1.1227-acre conservation easement from the Reclamation District 1000 on land immediately contiguous to the Conservancy's Lucich South and Bennett North tracts. Both properties were a part of managed marsh restoration and enhancement construction projects, and in order to take full advantage of the existing and known giant garter snake populations in the North Drainage Canal, and capitalize on the opportunities to utilize these populations to colonize the new managed marsh projects, certain structural changes were needed. Working cooperatively with the Reclamation District, the changes were made and the conservation easements were granted, resulting in successful managed marsh construction. The Conservancy was not obligated to pay the Reclamation District for these easements, since the Reclamation District used the acreage as approved mitigation for pumping plant renovations in the Natomas Basin.

5. A summary of the total aggregate number of acres of Conservancy Lands owned in fee simple or encumbered with Conservation Easements in favor of the Conservancy as of the end of the previous calendar year. The summary listing shall show the acreage and the proportion of lands which are Managed Marsh.

See discussion in number three (3) above, especially Table 3. More detailed information on each property acquired by the Conservancy can be found below:

[1] The entire 20.68 acres is counted in the Conservancy's mitigation acreage count.

TABLE 4

THE NATOMAS BASIN CONSERVANCY
LAND INFORMATION DETAIL
(italicized text in the Property column represents Supplemental Mitigation)

Property	Acquire Date	Acres	HCP/ Status	Williamson Act	Exceptions	NWC Stock	Sacramento County	Sutter County	SH Zone
Silva	1.7.99	159.2	NB				155.309	3.891	
Betts	4.5.99	138.99	NB				121.782	17.21	
Kismat	4.16.99	40.29	NB				40.293		
Bennett North	5.17.99	226.675	NB	⊗				226.675	
Bennett South	5.17.99	132.486	NB	⊗		358		132.486	∅
Lucich North[a]	5.18.99	267.986	NB	⊗				267.986	
Lucich South	5.18.99	351.889	NB	⊗		620		351.889	∅
Brennan	6.15.00	241.376	NB					241.376	
Frazer	7.31.00	92.6	NB	⊗		92		92.6	
Souza[b]	7.2.01	44.68	NB	⊗		drf	42	44.68	⊕
Natomas Farms	7.9.01	96.46	NB				96	96.46	⊕
Ayala	2.20.02	317.367	NB				312	317.367	
Sills	7.15.02	575.556	NB				619	575.556	
Alleghany 50	11.7.02	50.260	NB				51	50.260	⊕
Cummings	11.7.02	66.831	NB				67	66.831	⊕
Atkinson	6.12.03	205.40	NB		drf, erc	170		205.397	⊕
Ruby Ranch	6.23.03	91.078	NB	⊕	erc	91		91.078	⊕
Huffman West[e]	9.30.03	181.003	SUP					181.003	⊕
Huffman East[e]	9.30.03	135.746	MAP			136		135.746	⊕
RD1000@LUCS[c]	9.15.03	4.635	SUP	n/a	ce	n/a		4.635	
RD1000@BENS[c]	9.15.03	1.123	SUP	n/a	ce	n/a		1.123	
Total		3,421.6				2,657	1,468.6	1,953.1	
AT&T cell S167[d]		0.1	SUP						

[a] Lucich North is encumbered in part by a flood control easement conveyed to SAFCA in 2003 which totals 2.5 acres.

[b] Agreement of Purchase and Sale allows seller to partition 3.68 acres.

[c] RD1000 received credit for certain mitigation projects, none required by an HCP. This is a conservation easement and is not fee simple. RD1000's North Drainage Comprehensive Drainage Plan – Phase II Corps of Engineers ID#199900530; U.S. Fish and Wildlife Service file 1-1-00-F-0030 (Plant 3 Expansion).

[d] Airport Bayou location. Not HCP mitigation.

[e] All of the Huffman West tract and 19 acres of the Huffman East tract is for supplemental mitigation for Metro Air Park.

⊗ = yes, after acquisition

⊕ = yes, at acquisition

∅ = yes, partially

drf = development rights forfeited

ce = property covered by conservation easement or similar easement

erc = emission reduction credit sold prior to acquisition

Figure 1. Summer 2003 Restoration and Enhancement Construction. The Conservancy began its third summer of restoration and enhancement construction on four reserves. The photo at right shows managed marsh construction on the Conservancy's Lucich North tract in Sutter County during 2003. Photo: The Natomas Basin Conservancy.

6. A description of the management activities which the Conservancy conducted during the previous year and the management activities proposed for the coming year.

Following the outline in the 1997 NBHCP page IV-40 ("Habitat management activities"), the following list is presented:

a. Control of water supply and availability.

The Conservancy continues its practice of developing back-up or standby water supply on all land where water supply availability is critical, and nearly all land in general. As always, a special focus is placed on the 25 percent of Conservancy land allocated to managed marsh. Rice fields were generally supplied with water as they were at the time of acquisition.

The newest water supply and control issues mostly impact the 25 percent of Conservancy land holdings that are either in or scheduled to be in upland land uses. The reason for this is that the Conservancy has begun to experiment with expanding the Swainson's hawk foraging opportunities on land having soils heretofore thought to be poorly drained or otherwise not appropriate for upland crops. In preparing for changed uses, particularly from rice to upland, the Conservancy relies on extensive geotechnical investigation in determining whether upland crops can be grown. If determined to be appropriate for such uses, a range of crops that might be beneficial to Swainson's hawk are considered.

Most recently, it has been determined that the planting and growing of irrigated hay crops and irrigated pasture on heavier clay soils may have more potential than earlier thought and expected. This primarily relates to the fact that in conventional agriculture, yields and crop losses are more likely when attempting to produce such crops on these heavier soils, thus impacting the profitability of such production. However, the Conservancy's goals of providing habitat for the Swainson's hawk, tri-colored blackbird, burrowing owl, loggerhead shrike and many of the grass, vernal pool and other covered species drives the economics in a different way. Provided that the heavier soil types can produce adequate crops, and do so reasonably dependably, the Conservancy can expand the range of upland habitat. Properly irrigating these land uses is critical, and therefore the Conservancy has moved to ensure water is available to serve these needs. If the experience proves promising, further water supply development will be indicated and the NBHCP upland species' habitat can be expanded still further.

A good example of this concept can be found on the Conservancy's Natomas Farms tract. Most of the overall acreage of the Natomas Farms tract was given over to rice production in the last several decades. After extensive soil testing, it was determined that while 51 acres of the property were appropriate for managed marsh, it would be possible for the balance of the property (approximately 45 acres) to be used for upland purposes, particularly an irrigated hay

crop or irrigated pasture or both. Since the tract was close to the Sacramento River and within the Swainson's hawk zone, the site-specific management plan calls for just such land uses. Therefore, the Conservancy reformed the water distribution system to take advantage of both surface water supplies and groundwater supplies, which will be provided by a new well designated for the site. The flexibility of having both water supply options affords maximum latitude and back-up against supply outages, water chemistry variances that might influence habitat uses and availability matters caused by timing (e.g., the Natomas Central Mutual Water Company discharges water conveyance structures periodically for repair). Therefore, with calculated water regime adjustments, upland species covered by the NBHCP will have additional acreage that heretofore had been dedicated to an aquatic crop, rice.

The ability to provide water for rice operations is also critical, especially given that 50 percent of land use allocations provided for in the NBHCP are in rice. Also, income from rice operations provides a large share of the revenue necessary for various Conservancy activities, including maintaining the managed marsh component and uplands. Accordingly, great care has been taken by the Conservancy with respect to acquiring and assuring full rights to water supplies as it acquires property for mitigation. Conservancy management has ensured stock in the Natomas Central Mutual Water Company is transferred to the Conservancy with all mitigation land acquisitions within the Water Company territory. The Water Company Board of Directors has approved all Conservancy's requests for the transfer of ownership, and stock certificates have been received as described above in Table 4.

The Conservancy staff continues to attend the Water Company's annual meetings and casts shareholder votes in the Conservancy's interest. At December 31, 2003, the Conservancy owns 2,657 shares of stock in the Water Company. This number represents approximately the number of acres of land owned by the Conservancy in the Water Company's service territory. The Conservancy also continues to explore with Water Company officials opportunities that exist for water provision to those tracts the Conservancy owns which do not hold water rights.

The Conservancy has been particularly active in attempting to obtain more information from the Water Company about its plans. The Water Company has announced pans to sell water to a third party for the purposes of providing water to municipal and industrial users. Moreover, the Water Company has announced plans to conduct a ground water development program. Both announced projects concern the Conservancy a good deal. To date, the Conservancy has been unable to obtain the information it deems is adequate to know more about these developments.

b. Suitable agricultural practices (e.g., rice growing for giant garter snakes and production of other crops for Swainson's hawk foraging).

Conservancy staff regularly talks with rice farmers, pest control advisors and extension service personnel about farming in ways that are supportive of giant garter snake and Swainson's hawk and other covered species populations. Much of the results of these efforts are outlined in the site-specific management plan applicable for the subject site.

Meeting notes from communications with UC Cooperative Extension experts can be found in Appendix M. Several communications and two personal visits (including on-site inspections) were conducted with UC Cooperative Extension experts in 2003. The primary discussion involved ways to expand Swainson's hawk foraging acreage through creative agronomic practices, water management and soil manipulation, particularly in soils that were not especially conducive to planting and growing Swainson's hawk-friendly crops.

Additional discussions were engaged in by an ad hoc team meeting with Conservancy staff. The Swainson's Hawk Forage Preference Working Group conducted a literature search hoping to establish a better understanding of crops that could be planted to make prey generally better available to Swainson's hawk. See Appendix L ("Scientific Literature Search, Swainson's Hawk Foraging Habitat and Prey").

TABLE 5
THE NATOMAS BASIN CONSERVANCY
EXPECTED "MOST FAVORED" SWAINSON'S HAWK FORAGING CROPS*

Crop	Favorable to Prey Base	Expected Forage Access Value	Combination
alfalfa	5.00	5.00	5.00
clover (i)	5.00	4.50	4.75
pasture, irrigated	4.75	4.00	4.38
vegetables (ii)	4.50	4.00	4.25
tomatoes	4.25	3.25	3.75
grain, NEC (iii)	4.00	3.00	3.50
pasture, dry	3.75	3.00	3.38
sudan grass	3.75	2.75	3.25
strawberries	3.25	2.75	3.00
melons (iv)	3.25	1.75	2.50
beans, dry	3.25	1.75	2.50
sorghum	2.75	1.75	2.25
safflower	2.25	1.50	1.88
rice	2.00	1.25	1.63
cotton	1.75	1.25	1.50
orchard	1.50	1.00	1.25
vineyard	1.25	1.00	1.13
corn	0.50	0.50	0.50

(i) includes vetch, berseem and assumes surface irrigation and multiple harvests per season
(ii) includes carrots, lettuce, broccoli, cauliflower, etc.
(iii) grains, not elsewhere classified, includes wheat, oats, barley, triticale, etc.
(iv) includes cantaloupe, honeydew, watermelon, pumpkin, etc.

***Assumptions**:
- all grain and seed crops (clover, wheat, barley, rice, etc.) will have high food value for *microtus*
- does not consider timing aspects of crop harvest (e.g., a crop with three days/year of harvest activity vs. a crop with more frequent and thus sustained value)
- value range scales from dry, bare land as zero (lowest) and surface irrigated, frequently-harvest alfalfa at five (highest); values are subjective based upon perceived value

Table 5 also shows the preliminary assessment of the Swainson's hawk foraging crop study group with reference to a hierarchy of crops that could be planted in the Natomas Basin having value to Swainson's hawk. The assessment remains a work in progress, but has already been helpful to the Conservancy in preparing site-specific management plans and with some of the experimentation it has conducted to determine planting preferences.

The Conservancy's earlier work on giant garter snakes has also generated some results. Though three years was given for the target for giant garter snakes to appear on the Betts, Kismat and Silva preserves after restoration and enhancement construction, a juvenile snake was captured and tagged on the site by U.S.G.S. scientists working under contract with the Conservancy (see Figure 8) during year two. Giant garter snakes have been found consistently in the drainage ditch on the western border of the Conservancy's Silva tract, near the water discharge structure the Conservancy installed to drain the managed marsh preserve.

The Conservancy continues to enhance rice farming's contribution to species mitigation. The efforts largely involve the following:

1. Selection of informed, first-rate rice farming contractors. Using its discretion as a private, non-profit corporation, the Conservancy works to affiliate with rice farmers who care greatly about conservation issues and who work toward making rice production as helpful to species mitigation efforts as possible. These farmers are more likely to take extra steps to fulfill the goals of the NBHCP and occasionally make recommendations on how to best accomplish mutual goals. They work with the Conservancy to make the most of the interface between rice farming and managed marsh, as several rice farms discharge prey-rich (for GGS) rice tailwater directly onto the Conservancy's managed marsh areas. All are motivated to accomplish biological goals in support of the NBHCP.

2. Grower participation in mortality avoidance and reporting. All Conservancy farming contracts now contain a provision that requests the farmer make an effort to observe and report GGS and Swainson's hawk on and around the Conservancy land they are farming.

3. Conservancy farming leases. The Conservancy's leases provide several provisions that make rice farming throughout the Conservancy's mitigation land holdings more sensitive to GGS safety. These include requirements regarding seeking appropriate balances with respect to rodent control, vegetation management and specific references to farm chemical safety, for example. Most importantly, as more is learned and GGS habitat needs are further defined, future leases can be adapted to accommodate new information and thus influence rice farmer activity in the most beneficial manner. The Conservancy's faming leases also require adherence to the University of California Regents' publication, "Integrated Pest Management for Rice, Second Edition" handbook. Integrated Pest Management (IPM) attempts to use the least amount of chemicals and disruptive practices necessary to farm economically. The IPM rice farming principles and protocols are fortified by the research and direction of some of the world's leading rice scientists, many of whom are affiliated with the University of California and the International Rice Research Institute. In sum, adhering to these practices and principles minimizes disruption, improves water quality and creates a more sustainable rice farming environment.

4. GGS monitoring results and identification of sensitive locations. Still further data has been added to the Conservancy's knowledge as the locations of GGS become better known in the Basin. The Conservancy uses the monitoring information to alert farmers and others of the need for caution in those areas where GGS are found. The Conservancy has seen excellent compliance with its farmer-contractors in observing and avoidance of incompatible activity in these identified areas. Farmers working for the Conservancy have also begun to identify other NBHCP covered species, such as the western pond turtle.

5. Conservancy fallowing program adapted to include further dual benefit for GGS, Swainson's hawk and other covered species. The Conservancy has now moved its rice land fallow program into an experimental effort. The experiment involves seeing if the fallowed rice ground can be maximized for both rice sustainability (crop rotation avoids monocrop effects, including persistent plant disease problems, resistant weeds, overwhelming insect damage, soil nutrient depletion, etc.) and also afford a certain degree of benefits for the Swainson's hawk and other covered species. An example is the southerly portion of the Conservancy's Sills Ranch tract. On this rice land, the farmers contracting with the Conservancy have been induced by the Conservancy to plant and grow an irrigated hay crop. This involved the planting of rye in the fall of 2003, followed by an early harvest in 2004. This is immediately to be followed by the planting and then frequent harvesting of berseem (an irrigated hay crop). In this manner, a number of opportunities for Swainson's hawk to forage for microtus exists due to the more frequent chopping, planting and surface irrigation activities on the parcel. Traditionally, these rice soils are not conducive to economical hay crop production. But using creative agronomic practices, lowering of the financial break-even point for the farmer, and the timing of farming activity, the Conservancy believes this will be an excellent opportunity to use rice land for multiple covered species benefits.

6. Farming practices changed. Conservancy's management meets with the aerial applicators serving the Natomas Basin and informs them of the sensitive areas to be avoided. These coordination meetings have proven valuable in minimizing the potential disturbances which could deter species mitigation, especially during sensitive time of the year. The Conservancy continues to see excellent cooperation by these aerial applicators.

7. Preserving the "sanctuary" aspects of Conservancy-controlled lands for the benefit of the covered species. A theory behind the NBHCP is that as habitat is lost to development, the covered species displaced by this development can take refuge on Conservancy preserves. The Conservancy controls access to its land like no other farm landowner in the Natomas Basin. The amount of gates, fencing and signs erected in 2003 exceed previous years, all for the purpose of minimizing habitat disturbance. Housing that exists on the Betts and Silva tracts have been used to recruit tenants having a functional affiliation with the Conservancy's mission. This has helped tremendously in controlling poaching, trespassing, dumping and vandalism. This led to a change in Conservancy thinking during 2003. Previously, the Conservancy believed that residential structures on Conservancy land were a management and maintenance burden. Once Conservancy management took the time to consciously select tenants for the two aforementioned residences who had an interest and ability to help protect the surrounding preserves, significant improvement have been seen in disturbance and nuisance reduction. Since existing farmers have less concern about habitat disturbance, they have somewhat less concern about these issues. Certainly, they do not generally support trespassing, poaching, dumping and other illegal activity. However, they have less to lose than the Conservancy, since the Conservancy must be concerned about the very same property issues conventional farm land owners do, but also must be alert to habitat disturbance avoidance. The year 2003's efforts in property management have been an improvement in the use of Conservancy farmland for NBHCP covered species' benefit.

(See subsections "c," "f," and "g" below for additional agricultural practices which support Swainson's hawk.)

c. Grazing programs to eliminate weeds or control vegetation.

The Conservancy embarked upon an aggressive discovery effort in 2003 with respect to vegetation management. The report found in Appendix Q, titled, "Vegetation Management and Livestock Grazing: Betts, Kismat and Silva Site, The Natomas Basin Conservancy, 2003 Progress Report," characterizes these efforts. The Conservancy engaged in this study to accomplish several objectives. The most important was to find ways to further reduce mechanical, chemical and human intervention to the lowest degree practical. The second was to identify the appropriate livestock for the vegetation management task.

Earlier efforts had proven that the use of livestock was helpful in controlling exotic weeds, providing a greater opportunity for success by the native vegetation planted by the Conservancy. Livestock were also helpful in maintaining an ideal vegetation height so that Swainson's hawks could forage. The livestock had already proven valuable to tricolored blackbird and burrowing owl success on the Betts, Kismat and Silva tracts.

The key to the vegetation management efforts in 2003 was to apply management intensive rotation grazing (MIRG), and to do so in such a manner that the right animal was applied to the right vegetation. For example, the Conservancy keeps cattle well away from watered areas, knowing of their propensity to wallow in these areas, to disturb the shoreline and for animal waste to contaminate the waterway. Therefore, the Conservancy experimented with sheep in 2002 and goats in 2003, and found the goats provided excellent vegetation management in these areas. Similarly, the refined, purebred cattle that have been on the property since 2000 seemed far too selective for eating down some of the tougher vegetation on the site, but do an excellent job on the irrigated pasture areas critical to the tri-colored blackbird. Therefore,

Longhorn and Watusi cattle were introduced to the site in 2003. These cattle did a much better vegetation management job in the drier, weedier areas of the preserve. And since there has been some livestock loss to canines on the property, the Watusi and Longhorn cattle seemed well-suited to deterring over-aggressive livestock predation.

As the Conservancy sees continued success in this experiment, it will expand the successful practices to other Conservancy land.

Finally in this respect, the Conservancy's aggressive restoration and enhancement efforts in 2003 found further fenced areas on upland sites well suited to grazing activity. The Natomas Farms and Souza tracts were completely fenced in 2003. This will help the upland portion of these properties provide the maximum management flexibility for the benefit of the Swainson's hawk.

d. Exotic species control.

The Conservancy's action to address exotic species control has changed as the Conservancy's land holdings have grown. The biggest change is the amount of labor necessary to contain exotic plant species. The management intensive rotation grazing discussion above is one such labor-intensive, yet successful example. Clearly, on the Conservancy's Betts, Kismat and Silva tracts, there would continue to be a massive quantity of bull thistle and yellow star thistle without these aggressive efforts. Both plants heavily infested the site upon acquisition. The first control activity on the sites involved stubble disking a border around the worst areas, then also disking 40-foot swathes at intervals through the affected fields. Then vetch was aerial seeded on the site. Subsequent winter rains provided the moisture for the vetch to climb on the previous year's remains of the thistle and shade out new growth. Then cattle were introduced on the site, and consumed much of the vetch and remaining thistle. This experiment proved very educational for the Conservancy.

Following this experiment, the Conservancy engaged in extensive restoration and enhancement activity on the site. The resulting construction activity again brought about exotic weed growth. Where the livestock grazing did not move quickly to contain exotic vegetation, on-site Conservancy contractors used low-impact mechanical means (hand-held trimmers such as the Weed-Eater®) and very selective use of herbicide. However, livestock grazing has been effectively used to control exotic vegetation on over 99 percent of the site.

The extensive exotic species control efforts are directed at giving the planted native vegetation a competitive advantage. It is expected that after a few years of establishment, the native vegetation will be mature enough that the exotic species will need less attention.

Exotic vegetation control activities were the most pronounced on the Conservancy's Betts, Kismat, Silva tracts plus all other tracts having managed marsh constructed on them. (See Table 3 for a list of Conservancy preserves having managed marsh.)

As to non-plant exotic control, there was little to report in 2003 other than that found in subsection "h" below. The Conservancy continues to attempt to control feral cats that frequent the project site, but to date have been unsuccessful in either capturing or deterring them. It is clear, however, that populations of feral cats have not grown. It is possible that resident populations of coyotes have helped with population control.

e. Erosion control.

Since much of the Conservancy's land is in rice agriculture, and since the rice fields have been precision-leveled, there are relatively few erosion control needs or opportunities on current Conservancy land holdings. On the portion of the Conservancy's land that is not in rice

production, pasture is the most prevalent land use. Therefore it too, with its ground cover, relative flatness and being well developed with agricultural drains, offers little opportunity or need for erosion control efforts.

The Conservancy's managed marsh complexes are specifically designed to reduce erosion, and the Conservancy expects there to be few erosion challenges around these complexes. In order to control the substantial amount of water flowing through managed marsh components of the Conservancy's reserve system, the Conservancy has invested in water control structures that are extremely durable. The adjoining earthen structures are engineered for high integrity, and the Conservancy has moved quickly to identify and repair any potential weaknesses in these structures.

f. Enhancement of native plant communities.

The Conservancy continues, now for the second year, planting a number of native plants on its preserves. The plantings are in accordance with the guidelines provided for in the NBHCP, and their placement is spelled out in the individual site-specific management plans for the various reserves. These are reviewed by the Conservancy's consulting wildlife biologists, reviewed and approved by the Conservancy's Board of Directors, and submitted to the NBHCP TAC for review and approval through the site-specific management plan approval process.

In addition, pursuant to a requirement in the 2003 NBHCP, the Conservancy was obligated to begin the process of planting 60 additional trees for Swainson's hawk mitigation. By an arrangement with Alleghany Properties, Inc. dated October 9, 2003, the Conservancy began getting funding for the first 15 of these trees. These were subsequently planted with additional native species trees.

Table 4 shows the native trees and shrubs the Conservancy planted on this year's restoration and enhancement construction projects.

TABLE 6
THE NATOMAS BASIN CONSERVANCY
NATIVE TREES AND SHRUBS PLANTED IN 2003 ON CONSERVANCY PRESERVES

Betts, Kismat and Silva tracts

Remedial tree planting:
- *Cephalanthus occidentalis*, Button willow, 4
- *Platanus racemosa*, Sycamore, 39
- *Quercus lobata*, Valley oak, 44
- *Vitus California*, Wild grape, 44

Additional tree planting:
- *Quercus wislizenii*, Interior live oak, 2

Bennett North tract

Original riparian planting:
- *Baccharis pilularis*, Coyote brush, 2
- *Baccharis salicifolia*, Mulefat, 2
- *Cephalanthus occidentalis*, Button willow, 7
- *Platanus racemosa*, Sycamore, 2
- *Quercus lobata*, Valley oak, 2
- *Rosa californic*a, Wild rose, 7
- *Rubus ursinus*, California blackberry, 11
- *Salix exigua*, Sandbar willow, 17
- *Salix lasiolepis*, Arroyo willow, 17

Remedial tree planting:
- *Baccharis pilularis*, Coyote brush, 2
- *Quercus lobata*, Valley oak, 2
- *Rosa californica*, Wild rose, 2
- *Salix exigua*, Sandbar willow, 3

Upland Seeding (30 lbs/AC, 0.61 acres)
- *Bromus carinatus*, Native California brome
- *Elymus glaucus*, Blue wild rye
- *Festuca idahoensis*, Idaho fescue
- *Hordeum californicum*, California barley
- *Nassella pulchra*, purple needlegrass
- *Poa scabrella*, Pine bluegrass

Perennial Marsh Tule Planting (5.4 acres)
540 groups (ea. 18-24" diameter)

Bennett South tract

Upland Seeding (30 lbs/AC, 23 acres)
- *Bromus carinatus*, Native California brome
- *Elymus glaucus*, Blue wild rye
- *Festuca idahoensis*, Idaho fescue
- *Hordeum californicum*, California barley
- *Nassella pulchra*, purple needlegrass
- *Poa scabrella*, Pine bluegrass

Remedial Pasture/Grassland Upland Seeding (18 acres)
- *Elymus glaucus*, Blue wildrye
- *Elymus multisetus*, Squirrel tail
- *Elymus trachycaulus*, Slender wheatgrass
- *Leymus triticoides*, Creeping wildrye
- *Nasella pulchra*, Purple needlegrass
- *Poa secunda*, Pine bluegrass

Remedial Perennial Marsh Tule Planting
Approx. 465 groups (ea. 18-24" diameter)

Lucich South tract

Original riparian planting:
- *Baccharis pilularis*, Coyote brush, 6
- *Baccharis salicifolia*, Mulefat, 6
- *Cephalanthus occidentalis*, Button willow, 3
- *Platanus racemosa*, Sycamore, 4
- *Quercus lobata*, Valley oak, 17
- *Rosa californica*, Wild rose, 7
- *Rubus ursinus*, California blackberry, 4
- *Salix exigua*, Sandbar willow, 10
- *Salix lasiolepis*, Arroyo willow, 10

Remedial tree planting:
- *Baccharis pilularis*, Coyote brush, 2
- *Baccharis salicifolia*, Mulefat, 3
- *Quercus lobata*, Valley oak, 1
- *Rosa californica*, Wild rose, 7
- *Rubus ursinus*, California blackberry, 2
- *Salix exigua*, Sandbar willow, 7

Upland Seeding (30 lbs/AC, 5 acres)
- *Bromus carinatus*, Native California brome
- *Elymus glaucus*, Blue wild rye
- *Festuca idahoensis*, Idaho fescue
- *Hordeum californicum*, California barley
- *Nassella pulchra*, purple needlegrass
- *Poa scabrella*, Pine bluegrass

Perennial Marsh Tule Planting (9.2 acres)
920 groups (ea. 18-24" diameter)

Lucich North and Frazer tracts

Tree Planting:
Populus fremontii, Fremont cottonwood, 53
Salix goodingii, Black willow, 15
Quercus lobata, Valley oak, 37

Upland Seeding (22 lbs/AC, 62.32 acres)
Elymus glaucus, Blue wild rye
Hordeum californicum, California barley
Leymus triticoides, Creeping wild rye
Nassella pulchra, purple needlegrass
Poa scabrella, Pine bluegrass
Vulpia microstachy, Three-weeks fescue

Perennial Marsh Tule Planting (186.10 acres)
22,166 groups (ea. 18-24" diameter)

Souza and Natomas Farms tracts

Tree Planting

Populus fremontii, Fremont cottonwood, 15
Quercus lobata, Valley oak, 15

Berm & Riparian Seeding (30 lbs/AC, 8 acres)
Bromus carinatus, Native California brome
Festuca idahoensis, Idaho fescue
Hordeum californicum, California barley
Nassella pulchra, purple needlegrass
*Poa scabrell*a, Pine bluegrass
Trifolium wildenovii, Tomcat clover (inoculated)
Vulpia microstachys, Three-weeks fescue

Grassland Seeding (25 lbs/AC, 43.4 acres)
Martin fescue
Tonga Tetra perennial ryegrass
Bison intermediate rye
PK Ladino clover
PK Salina strawberry clover
PK Broadleaf trefoil

("Beef & Sheep Mix" from Kamprath Seed Co.)

Perennial Marsh Tule Planting (36.2 acres)
3620 groups (ea. 18-24" diameter)

g. Habitat enhancement activities for the covered species (e.g., construction of artificial burrows for giant garter snake).

During 2003, the Conservancy engaged in the most extensive habitat creation effort since its inception. Major construction efforts took place on the Lucich North, Frazer, Natomas Farms and Souza tracts, with follow-up efforts on Bennett North and Bennett South.

See the site-specific management plans (Appendix K) for these sites to see a graphic presentation of the work conducted on each site.

h. Predator control.

The Betts, Kismat and Silva tracts were the scene of the slaughter of 19 goats employed on the tracts by the Conservancy for vegetation control.[2] The deaths were caused by domesticated dogs roaming the area. Sacramento County Animal Control was contacted, and one of the three dogs was captured. As a result of the incident, the Conservancy's on-site contract manager has strengthened perimeter fencing. However, this makes an already labor intensive effort even more so. Nonetheless, the goats have performed well in vegetation management (see discussion above), and to date, the protective efforts have helped.

On numerous occasions, the Conservancy has contacted Sacramento County Animal Control to remove stray dogs left on the Conservancy's land and which roam the area. These control efforts have all been successful. The Conservancy continues to deal with occasional domestic dogs and cats being introduced onto various preserves. There has been an on-going problem with citizens abandoning their pets on farms, and the Conservancy's property is no exception.

i. Control of pesticide uses on reserve lands.

All Conservancy agricultural leases and right of entry agreements contain provisions specifying that the use of pesticides on Conservancy mitigation land is strictly controlled. In its own land management efforts, the Conservancy rarely allows pesticides to be used. Insecticide use has not been permitted on Conservancy-owned mitigation land with the exception of occasional use in active farming operations. Rice production generally does not require significant insecticide applications. In all such uses, contract farmers are required to employ IPM practices.[3]

See also previous discussions on efforts to reduce the use of herbicide (see subsection b, "Suitable agricultural practices," above).

j. Enhanced ditch and drain management for the covered species on reserve lands.

Except with the restoration and enhancement construction project engaged in during 2003, there was little or no ditch or drain management activity. Previous years saw a number of communication and coordination efforts between the Conservancy and the Natomas Central Mutual Water Company and Reclamation District 1000. As the Conservancy's land holdings grow and as the restoration and enhancement sites mature, there will be additional reporting on these matters.

The Conservancy did conduct some drainage improvement around the Silva residence on its Silva tract in 2003. The Conservancy's Board of Directors determined to keep the residence rather than raze it because of the trespassing, poaching and other illegal activity on the site. The additional set of "eyes and ears" has helped control such activity. In retaining the residence, it was clear that the site no longer drained very well, and winter water flowed into the residence area. A small drainage improvement was constructed around the perimeter of the residence so that water drained off the site, protected the Conservancy's investment and also made for a more attractive situation for desirable tenants who would in turn help the Conservancy protect the surrounding preserve.

[2] See Sacramento Bee article, "Goats attacked by dogs: Death of 11 animals called a setback but won't halt Natomas habitat effort," August 26, 2003, and an editorial in the Sacramento Bee on August 30, 2003, "Darwinism in Natomas: snakes and hawks can't go to the dogs."

[3] University of California Regents' publication, "Integrated Pest Management for Rice, Second Edition" handbook. Integrated Pest Management (IPM) attempts to use the least amount of chemicals and disruptive practices necessary to farm economically.

k. Coordination of any research conducted within reserves with outside species experts and other individuals and groups.

The Conservancy engaged in considerable exploration regarding the preferred crop types for Swainson's hawk. The format was an informal group established by the Conservancy. The group is called the Swainson's Hawk Forage Preference Working Group. It is comprised of Conservancy Board members David Christophel and Mike Bradbury and NBHCP TAC member Jim Estep, all of whom are wildlife biologists, and Conservancy staff, John Roberts. See section 6b above for a further discussion of this group's activities as well as Table 5. See also Appendix L for an extensive presentation of a literature on the topic the Working Group conducted.

Additionally, Conservancy staff employed outside experts to help conceptualize the best approach to giant garter snake monitoring. The exercise was meant to unearth ideas on what an ideal giant garter snake monitoring program would look like. The discussion paper that resulted from this exercise (see Appendix T, GGS Monitoring Protocol Discussion Paper) helped set the stage for the request for proposal (RFP) that was drafted to begin the new biological effectiveness monitoring program as required in the 2003 NBHCP. The RFP can be found in Appendix U. The BEMP work plan can be found in Appendix V.

Figure 2. GGS Observed Adjacent to Bennett North. The GGS at right was observed in early Spring 2003 adjacent to the Conservancy's new managed marsh at the southeast corner of the Bennett South tract. The observation was made during an inspection of sites with representatives of the Conservancy's staff, Board of Directors and USGS giant garter snake experts. Photo: The Natomas Basin Conservancy.

The Conservancy continued its engagement of the Sacramento Tree Foundation to conduct a count of trees on Conservancy-owned land. That report follows as Appendix I. The report establishes a baseline tree count on Conservancy-owned lands and then allows a follow-up as to progress since then. As the many recently planted trees mature to a size that they can be counted as mature, and thus included in future tree census reports, there should be a very large change in the total number of trees on these properties over the years.

Additional giant garter snake monitoring work was done on the Conservancy's newly-acquired Atkinson tract. The purpose of the research was to obtain early information that would help with site-specific management planning decisions. While this supplemental monitoring was not specifically a requirement of the NBHCP, the Conservancy conducted the work in order to make certain it could comply with the site-specific planning submission deadlines, to add certainty to its knowledge of the biological resources of the tract, and also add further accuracy with site-specific management plan preparation, site-development and long-term site management budgeting. The Atkinson tract is probably the most unique and biologically diverse tracts currently held by the Conservancy.

This supplemental giant garter snake monitoring work was conducted by Eric Hansen, consulting environmental biologist. The work can be found in Appendix X. The study confirmed giant garter snakes existed at the site, with two confirmed trappings in the highline ditch on the property's easterly border.

The Conservancy also engaged hydrology experts to provide the first of a two-year effort to ascertain with greater certainty the volume of water flowing into the Conservancy's Betts, Kismat and Silva preserves. The report can be found in Appendix Y. Flow measurements were taken in April and May of 2003. The tests confirmed flow volumes of 2,865 and 3,252 gallons per minute, respectively. Further measurements will be taken in 2004 in order to derive an averaged flow estimate. The results of the work are helpful in providing accurate water level management of the managed marsh reserve system on the property. Water level management is essential to provide the best possible environment for the giant garter snake and also to aid in effective aquatic vegetation management.

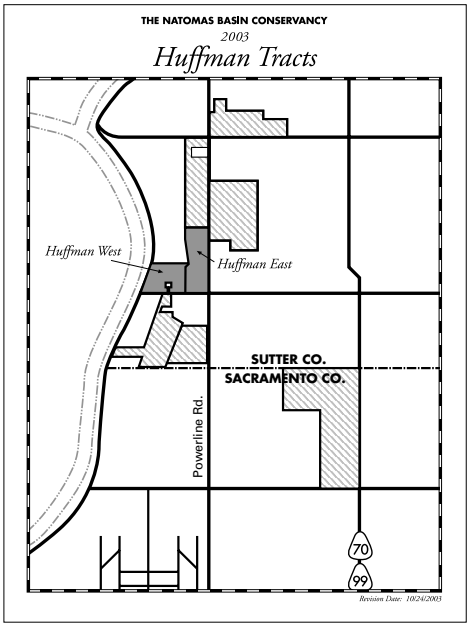


Figure 3. Acquisition of Huffman Tracts Advances Consolidation of Reserves. Acquisition of the Huffman East and Huffman West tracts in 2003 helped advance efforts to consolidate Conservancy land into contiguous preserves. The map above displays the two acquisitions and how they relate to existing land holdings in the surrounding area. Conservancy plans for 2004 include further efforts at preserve consolidation.

l. Management activities proposed for coming year.

The year 2004 will be another year of rapid growth for the Conservancy. Management activity will be focused primarily in the following areas:

1. refine and effectively manage new and start-up managed marsh projects resulting from the heavy restoration and enhancement construction schedule from 2003,

2. implementation of the revised and more extensive 2003 NBHCP,[4]

3. incorporation of an additional habitat conservation plan, the Metro Air Park HCP, into the Conservancy's program of work,

4. initiating a new biological effectiveness monitoring program, effective January 1, 2004,

5. absorb an expected large amount of new mitigation land into the Conservancy's land inventory,

6. continue to patch together additional lands to further the string of successes in reserve consolidation,[5] and

7. extensive oversight of financial planning to ensure that the HCP fee is adequate to fully fund implementation efforts.

Given that the Conservancy's inventory of mitigation land has risen dramatically in the past few years (see Table 2), Plan implementation is coming much faster than expected, so the Conservancy will be working with all concerned to refine its work and make certain Plan implementation stays on tract.

7. A description of the habitat enhancement activities conducted in the previous year and those proposed for the coming year.

A discussion on enhancement activities conducted the previous year has been incorporated into several items above. Proposed habitat enhancement work for 2004 will largely be focused around a restoration and enhancement construction project on the Conservancy's Cummings tract, refinement of the large restoration and enhancement construction activities in 2003, and incorporating the newly acquired property into the reserve systems. Additional information can also be found in the revised and updated site-specific management plans (see Appendix K).

8. A report of any scientific research authorized or conducted in the previous calendar year on Conservancy Lands other than research conducted directly by USFWS or CDFG, and a description of any research proposed for the coming year.

See item section I.6 (k) above.

Research planned for 2004 falls primarily into the biological effectiveness monitoring effort described above, including, a.) monitoring for the giant garter snake, and 2.) monitoring for the Swainson's hawk and the comprehensive monitoring detailed in Appendix V.

[4] The 2003 NBHCP is supported by permits issued to the Conservancy by the California Department of Fish and Game (issued July 10, 2003; permit number 2081-20032-019-02) and the U.S. Fish and Wildlife Service (issued June 27, 2003; permit number TE073667-0). These can be found in Appendix W.

[5] Great strides were made in reserve consolidation during 2003, including having assembled one contiguous tract of 1,324.274 acres (see Figure 3). This means the Conservancy is well past the halfway point in having met its 2,500-acre contiguous tract requirement. The Conservancy now looks to further consolidate reserves around the North Basin Reserve Area, the Central Basin Reserve Area and the Fisherman's Lake Reserve Area (see Appendix D). This will assist with reserve contiguity, and at the same time, very likely assist with more effective land management.

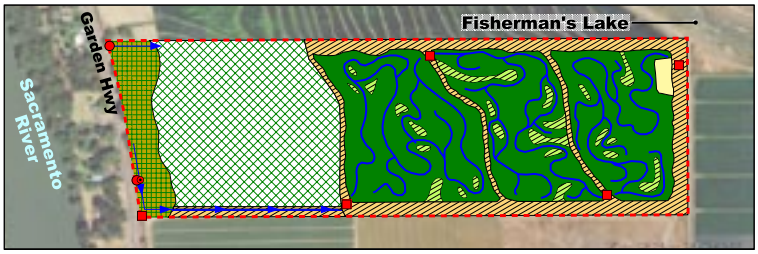


Figure 4, Restoration and Enhancement Project Slated for Conservancy's Cummings Tract. The plan shown above reveals the Conservancy's plans for the restoration and enhancement construction project on the Conservancy's Cummings tract in the southern portion of the Natomas Basin.

9. An itemization, if known, of the number of individuals of the Covered Species taken by the Conservancy in the course of management, relocation, or scientific study, and the disposition of those individuals.

The Conservancy did not detect any incidental take of any of the covered species in the form of death or injury resulting from its restoration, enhancement and management activities. However, some individuals of the covered species may have been disturbed or harassed, and it is possible some may have been injured but avoided detection during these activities. Management activities were mostly agronomic in nature, including water management, livestock management, crop cultivation, vegetation management, debris removal, etc., and took place on all of the land mapped and found in Appendix D. Substantial restoration and enhancement construction activities took place on the Conservancy's Lucich North, Frazer, Natomas Farms and Souza tracts (see referenced map in Appendix D), with some activity taking place as follow-up on last year's projects. These activities included earth moving, installation of water control structures, planting of vegetation, and other activities normally associated with construction of marsh. Measures the Conservancy has taken to avoid and minimize incidental take are those found in the NBHCP and the site-specific management plan for the site in question, all of which were observed by Conservancy staff and/or contractors. The Conservancy employs biologists to conduct on-site restoration and enhancement monitoring activities in order to detect take and ensure implementation of take avoidance and minimization measures. The Conservancy communicates and advises its lessee farmers (see Section 6b above, "Suitable agricultural practices") and contractors as to the importance of avoiding take and reporting it if and where it occurs.

No incidental take was reported by Conservancy monitors or others conducting activities on Conservancy land. Because these measures have been employed, the Conservancy believes any incidental take of the covered species has been minimized and avoided as much as possible, and that any take that occurred falls within the amount authorized in the Incidental Take Permit.[6] Take that may have occurred as a result of scientific activities (such as capture and disturbance) are outlined in the monitoring reports found in Appendix F and G. Take of giant garter snakes as a result of scientific activities is also covered under separate federal permit under section 10(a)1(A) of the ESA. Monitoring of the Swainson's hawk was carried out under the terms of a Memorandum of Understanding between the Conservancy's contractor and the California Department of Fish and Game.

10. A yearly financial report prepared by a certified public accountant which provides: a tabulation of all Habitat Acquisition Fees and other Mitigation Fees collected by the Conservancy; all other sources of income to the Conservancy; all expenses incurred by the Conservancy during the previous year, including an itemization of all expenses incurred in land acquisition activities; the amount of funds held in reserve for future acquisitions; and the value of the endowment fund established from Endowment Fees.

In Appendix J, a financial statement for the Fiscal Year ended December 31, 2003 is presented. Audited financial statements are prepared each year and are generally available around early May. Once completed, copies are sent to the Wildlife Agencies and others.

[6] On June 14, 2003 on the Conservancy's Frazer tract, a heavy equipment operator working on the restoration and enhancement construction project on the site observed an 18-inch giant garter snake in the middle of the construction area. Avoidance measures were immediately employed. A full accounting and map covering the issue can be found in Appendix R.

11. An assessment of the adequacy of funding projected for the coming year and a recommendation as to the amount that the Base Mitigation Fee should be increased or decreased as specified in Sections 4.5.7, 4.5.8, or 4.5.9 of this Agreement.

In Appendix N, the Conservancy presents a summary of the financial model update it requisitioned during the reporting period. The model indicated a need for an increase in HCP fees. Accordingly, the Conservancy adopted a resolution[7] requesting that the City of Sacramento increase HCP fees (see Table 6, HCP Fee History). The Sacramento City Council voted unanimously soon thereafter (June 24, 2003; resolution #2003-460) to accept this recommendation and implement it immediately.

The pattern and process for evaluating the need for fee adjustments, and then getting all the necessary authorizations to implement such adjustments, has become well established. As the Conservancy progresses with implementing the NBHCP, its ability to estimate costs is enhanced. This in turn helps produce yet more refined budgeting activity.

TABLE 7
THE NATOMAS BASIN CONSERVANCY
HCP FEE HISTORY

Year	Established Fee
1997	$2,240
1998	$2,656
1999	$3,292
2000	$3,942
2001	$5,993 + $4,028 premium = $10,021*
2002	$7,934 + $4,028 premium = $11,962*
2003	$12,270[8]
2004	$16,124[9]

*HCP "premium" was established as a result of an agreement to settle litigation, *FWS v. Babbitt*.

12. Maps depicting items set forth under paragraphs (1), (2), (3), (4), and (5) above.

In Appendix A, the Conservancy provides maps of fees paid and acres graded as presented by the City of Sacramento and Metro Air Park. In Appendix D, maps of Conservancy mitigation lands are provided. In addition, the Conservancy has completed land surveys of all acquired mitigation lands. The surveys conform to American Land Title Association (ALTA) requirements and are available in the Conservancy's office.

[7] Conservancy Board resolution #03060 adopted by unanimous vote on June 4, 2003.

[8] Also established is a fee of $7,770 per acre for fee obligations satisfied in part with land dedication.

[9] Also established is a fee of $8,624 per acre for fee obligations satisfied in part with land dedication.

Figure 5. Aerial Photos of All Conservancy Lands Have Been Taken. The Conservancy has had aerial photos taken of all of its mitigation land. The photo at left is of the entire Natomas Basin, taken in September of 2003. The Conservancy acquires such basin-wide photos to allow tracking of its restoration and enhancement construction projects. The Conservancy's restoration and enhancement construction efforts can be seen in this photo, and include the Betts, Kismat, Silva, Bennett North, Bennett South and Lucich South tracts.

Other features include the Sacramento International Airport at left and the urbanized City of Sacramento in the lower portion of the photo. The Sacramento River runs along the left boundary of the photo, and the Natomas Cross Canal runs across the top.

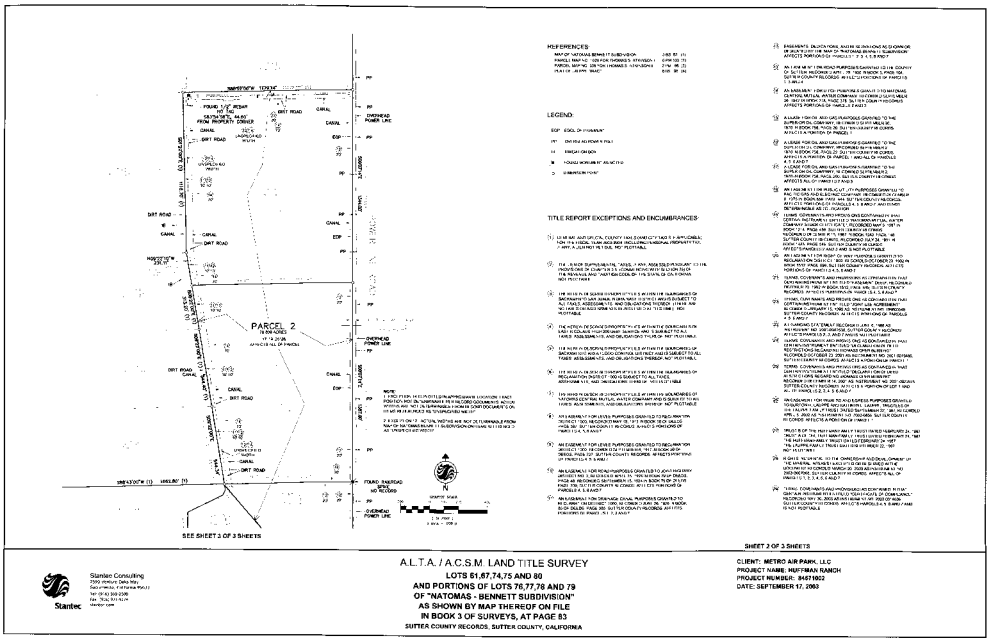
The aerial photo can be viewed in larger format and downloaded by accessing the Conservancy's web site at www.natomasbasin.org. Photo: LANDSAT.

13. Copies of all data collected and reports generated as a result of scientific research conducted on Conservancy Lands.

Reports covering such work conducted during 2003 include, 1.) geophysical testing on the Conservancy's pre-construction tracts (see Appendix E), 2.) monitoring for the giant garter snake (see Appendix F) and a special giant garter snake monitoring project (see Appendix X), 3.) monitoring for the Swainson's hawk (see Appendix G), and 4.) phase one environmental reports for newly acquired mitigation land (see Appendix H). A report taking a survey of all trees located on Conservancy-owned mitigation land can be found in Appendix I. Research conducted on water flows on the Betts, Kismat and Silva tracts can be found in Appendix Y.

ALTA surveys of newly acquired mitigation land were also completed and are on file with the Conservancy at its office.

Figure 6. ALTA Surveys Made of All Conservancy Lands. At right is an excerpt from the survey conducted on the Conservancy's Huffman East tract.



14. An accounting of the long-term endowment account.

An accounting of the Conservancy's Endowment Fund can be found in Appendix J, the December 31, 2003 financial statement. More extensive detail of the fund accounting can be found in Appendix S, "Endowment Fund Accounting." The Endowment Fund has grown remarkably during 2003, now with a balance in excess of $5 million.

15. All other information described in Chapter IV, Section G.4 of the NBHCP.

See item number (6) above for a complete list of information listed in the HCP.

Other management activity included:

1. Occasional meetings or communications with adjacent and neighboring land owners to update them on the Conservancy's program and to discuss any other issues related to the land management activities going on in and around the Conservancy's mitigation lands.

2. Removal of illegally dumped debris on Conservancy-owned properties.

3. The Conservancy continues to install locks on all access gates on Conservancy mitigation land. It also controls trespassing and hunting on such lands as well.

4. Property tax management has taken a considerable amount of the Conservancy's time.

5. The Conservancy also manages participation in federal farming programs, working regularly with the U.S.D.A.'s Farm Services Agency in Yuba City, California, to preserve eligibility of Conservancy farming tracts in the relevant programs.

6. Additional efforts in managing rental housing, repairing electrical, plumbing and HVAC in the rental housing, and locating signage and gates around these areas took additional staff effort.

7. Conservancy management has some responsibility to provide a public education component in its implementation of the NBHCP. The Conservancy's web site continues to be used by many. Conservancy staff also briefed a number of local, state and federal officials on the progress of the implementation effort. These included briefings for representatives of the U.S. Justice Department, Sacramento County Planning Department, various news reporters, Sacramento City Councilmembers and City management, Sutter County officials, Friends of the Swainson's Hawk, and a presentation at the semi-annual meeting of the Garden Highway Homeowners Association, among others.

A noteworthy example of management activity involving coordination included Conservancy staff's communications and meeting with the Central Valley Habitat Joint Venture. On August 22, 2003, Conservancy staff met in the Conservancy office with representatives of the Joint Venture, including those from the California Department of Fish and Game (Dave Smith), U.S. Fish and Wildlife Service (Bob Shaffer), State of California Wildlife Conservation Board (Peter Perrine), U.S. Geological Survey (Michael Miller) and Ducks Unlimited (Olen Zirkle). The session was helpful in coordinating resource allocations and sharing information helpful to NBHCP implementation.

Accounting for each jurisdiction (City of Sacramento, Sacramento County, Sutter County and Metro Air Park):

1. **Take: The annual incremental and cumulative area converted to urban development:**
   a. **In the applicable permit area and entire NBHCP area.**
   b. **In the Swainson's hawk zone (the area within 1 mile of the Sacramento River).**
   c. **In vernal pools.**

The Conservancy provides information from the City in this regard in Appendix A which follows and in Section I.1 and I.2 of this report.

2. **Mitigation: The annual incremental and cumulative area of mitigation lands acquired:**
   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. **Out-of-Basin in Area "C."**
   d. **Status of the initial 400 acres (when purchased and what habitat type).**
   e. **Mitigation for vernal pools, as appropriate.**

Please refer to Section I (3) and Table 3 above for a response to "a." See also Section III (2) and Table 7.

As to "b," no lands have been acquired in Area B.

As to "c," no lands have been acquired in Area C.

As to "d," the initial 338 acres were acquired at the Betts, Kismat and Silva tracts. At present, the habitat type is a mix of upland reserve with a large percentage converted (or restored) to managed marsh. An aerial photo of the three tracts can be found in Figure 7.

The initial 400 contiguous acres were acquired in 1999 with the acquisition of the Lucich South and Bennett South properties. Combined, the tracts total 484.375 acres. Lucich South and Bennett South were both under restoration and enhancement construction during 2002, and through 2003, functioned as scheduled in the approved SSMP. The land use breakdowns on both parcels can be seen in Table 3. Giant garter snakes continue to be found on the boundaries of the constructed managed marsh complexes on the two tracts.

Figure 7. Aerial Photos of All Conservancy Lands Have Been Taken. The photo at right shows the status of the Betts, Kismat and Silva tract in early 2004 (photo is looking from the southwest towards the northeast). Irrigated pasture in the far right of the greened area can be seen, as can the vernal pool area at the center right portion of the photo. Potholes, used to concentrate prey for the GGS, can be clearly seen in the center left portion of the photo. Photo: American Aerial Surveys, Inc. for The Natomas Basin Conservancy. March 2004.

As to "e," there are vernal pools on the Silva tract, developed under the 2001 restoration and enhancement project on the site. They appear to be in excellent condition (see aerial photo in Figure 7).

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3. Financial status:
- **a. The amount and source of funds collected.**
- **b. Funds expended or committed for acquisition.**
- **c. Funds held in reserve.**
- **d. Summary of expenditures for and revenues from reserve land management.**
- **e. An accounting of the long-term endowment account.**

An entire accounting and response to this section can be found in Appendix J.

1. The amount and location of all lands approved for urban development by public agencies (e.g., public works projects) for which mitigation fees were paid to the NBC in the preceding year.

Please see Section I.1 and Section I.2 of this report for detail on this matter.

2. A description of the locations and condition of any mitigation lands acquired in fee simple or conservation easement in the preceding year.

A record of all lands acquired by the Conservancy by size and date of acquisition can be found in Table 2, titled, The Natomas Basin Conservancy, Land Acquisition Tally. All lands are mapped and found in Appendix D. A quick reference guide to all Conservancy preserves can be found in Table 8, Reserve Characteristics Illustration. General descriptions for the properties acquired during the preceding year follow. Descriptions describe the property at the time of acquisition:

Atkinson tract (part of the North Basin reserve complex). APNs 35-320-012, 35-320-006, 35-330-022. This 205.397-acre parcel is bound by the North Drainage Canal on its east boundary and with some exception, Garden Highway on its west and Riego Road on its North. Its southern boundary mostly straddles the Sacramento and Sutter county boundary. The property is bordered on its east by sizable water conveyance structures. It has historically been used as a rice field, with the exceptions being its westernmost 40 acres, which are divided into approximately 20 acres of fallowed uplands, 11-acres of forest with some water drainage area, and approximately 10 acres of rice and wheat crop. Its southern boundary lies approximately 10.5 miles north of downtown Sacramento and 1.9 miles north of the runways at Sacramento International Airport. The property lies entirely within the Swainson's hawk zone along the Sacramento River. It derives water from a pump that lifts water from the North Drainage Canal. It also has a ground water well at its northwesterly corner along Garden Highway.

Huffman East tract (part of the North Basin reserve complex). APNs 35-240-009, 35-240-004, 35-240-001, 35-240-012. The Huffman East tract is a total of 135.746 acres, and lies at the northwest corner of the intersection of Riego Road and Power Line Road in south Sutter County. Its northern boundary is contiguous to the Conservancy's Bennett South tract, and its easterly border parallels Power Line Road. The entire south border abuts Riego Road and the westerly border is mostly contiguous to the Conservancy's Huffman West tract. The property lies entirely within the Swainson's hawk zone. It is approximately 11.5 miles north of downtown Sacramento and 2.8 miles north of the Sacramento International Airport. It lies entirely in the Natomas Central Mutual Water Company service territory. It has been planted to rice nearly every year in recent history. See special map in Figure 3.

Huffman West tract (part of the North Basin reserve complex). APNs 35-030-018, 35-030-019, 35-030-030-020, 35-030-021, 35-030-022. The Conservancy's 181.003-acre Huffman West tract is contiguous on its easterly border with the Conservancy's Huffman East tract and on its south border by the Conservancy's Atkinson tract. With the exception of an approximate 52.5-acre east field which has long been planted to rice, the property has mostly supported upland crops including alfalfa, tomatoes, and corn. It surrounds a real estate inholding of mostly farm buildings not owned by the Conservancy. Water is provided to the property by a groundwater well on the northwest corner of the property, as well as some appropriative rights to Sacramento River surface water. See special map in Figure 3.

Ruby Ranch tract (part of the North Basin reserve complex). APN 35-032-003. The 91.078 Ruby Ranch tract lies adjacent to the North Drainage Canal on its north and westerly boundaries. Immediately across the North Drainage Canal on the west lies the Conservancy's Atkinson tract. Ruby Ranch lies just under 10.5 north of downtown Sacramento and just inside Sutter county near its border with Sacramento County. It has been planted to rice nearly every year in recent history. It has a small natural gas well in the middle part of the north border. It is provided water service by the Natomas Central Mutual Water Company.

TABLE 8
THE NATOMAS BASIN CONSERVANCY
RESERVE CHARACTERISTICS ILLUSTRATION*

CHARACTERISTIC	MITIGATION LAND TRACTS IN ORDER OF ACQUIRED DATE																		
	Silva	Betts	Kismat	Bennett North	Bennett South	Lucich North	Lucich South	Brennan	Frazer	Souza	Natomas Farms	Ayala	Sills	Alleghany 50	Cummings	Ruby Ranch	Atkinson	Huffman West	Huffman East
COUNTY																			
Sacramento	●	●	●							●	●	●	●	●	●				
Sutter	○	○		●	●	●	●	●	●							●	●	●	●
PREDOMINANT LAND USE (2003)																			
Rice				●	●		●					●	●		●	●	●	○	●
Upland	●	●	●		●	○		●	○	●	●			●	●		○	●	
Marsh	●	●	●	○	●	●	○		●		●						○		
WATER																			
Natomas Water Co.				●	●	●	●		●	●	●	●	●	●	●	●	○		●
Ground Water	●	●				○		●							○		○	●	
Surface Water	●	●	●															●	
MANAGEMENT PLAN																			
Covered by Approved SSMP	▯	▯	▯	▯	▯	▯	▯	▯	▯	▯	▯	▯	▯	▯	▯				
Not yet covered																●	●	●	●
Marsh Construction '01	▯	▯	▯																
Marsh Construction '02				▯	▯		▯	○											
Marsh Construction '03						✔			▯	▯	▯								
Marsh Construction '04															●				
EXISTING TREES																			
0				●	●	●	●		●			●	●			●			●
1 - 10			●								●							●	
11 - 30								●		●									
31+	●	●												●	●		●		
OTHER																			
Fenced	●	●	●		○			○		●	●								
Livestock Grazing	●	●	●					●											
Residential Structures	●	●								●									
Farm Structure(s)	●	●								●									
Vernal Pools	✔																		

** Solid dot (●) represents inclusion of characteristic on that tract; hollowed-out dot (○) represents minor or partial inclusion on the referenced tract; a check mark (✔) represents completion of project.*

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 activities in the City's or Counties' permit areas in the preceding year, including any specimens taken for scientific purposes.

See Section I.9 (above) for a thorough discussion on this point.

4. Plans for the acquisition of reserve lands in fee simple or conservation easement in the forthcoming year.

The Conservancy will continue to focus on reserve consolidation in its acquisitions. Other attractive properties with substantial biological values may surface and offer excellent opportunities. However, the priority of the Conservancy remains in the area of reserve consolidation in the North Basin Reserve Area, Central Basin Reserve Area and Fisherman's Lake Reserve Area (see Appendix D). The aim of the Conservancy's mitigation land acquisition program is to continue to attempt to assemble land necessary to meet the 2,500-acre contiguous land requirement, along with smaller parcels in minimum 400-acre blocks.

5. An outline of habitat management, enhancement, and monitoring activities conducted in the preceding year and planned activities and goals for the forthcoming year.

Please see I.6 above for a full discussion of this subject. Monitoring activities will be major in 2004, as the first year of the biological effectiveness monitoring program (BEMP) has begun pursuant to the 2003 NBHCP.

6. Pertinent results of biological surveys and monitoring activities conducted in the preceding year.

Please refer to Appendices F, G and X for a complete reporting on this issue. Additionally, the Conservancy's monitoring efforts resulted in the trapping of the first giant garter snake actually in a constructed managed marsh complex on Conservancy land, in this case, on the Conservancy's Silva tract. Prior trappings on the Silva tract were made near the water outfall structure "R" in a drainage ditch that bordered the Conservancy's property. The August 13, 2003 discovery by U.S. Geological Survey scientists was actually inside the developed area. A press release which details the discovery appears in Appendix Z.Conservancy staff periodically observes covered species on Conservancy land in its periodic site inspection tours. Such observations are recorded and are presented on Appendix AA.

Figure 8. GGS Identified on Conservancy Preserve. Lisa Martin, a scientist with the U.S. Geological Survey, prepares the first giant garter snake (an immature male) identified on the Conservancy's BKS preserve, for measuring, weighing, health examination and tagging while Conservancy President David Christophel (left), and USGS principal investigator Glenn Wylie, PhD (right) look on.

7. Pertinent information from RD1000 and NCMWC as described in Section C.1.e above (Reporting/Revisions).

Reports from RD 1000 and Natomas Mutual Water Company follow in Appendix O.

8. Any other pertinent information regarding implementation by the permittees of the terms of the NBHCP and its associated permits or circumstances within the reserve system specifically or the plan area generally.

The Conservancy will be heavily involved in 2004 in implementing the first full year of the new 2003 NBHCP. This will require additional effort, especially with respect to monitoring, but also, numerous other activities. See Appendix V for more information on tasks and projects related to this monitoring implementation effort.

As further indications of Conservancy activities during the reporting year, copies of extracts of the adopted minutes of all Conservancy Board of Directors meetings can be found in Appendix P.

Figure 9a. Conservancy's On-Going Consultations. The Conservancy's on-going effort to consult with experts included a spring visit with giant garter snake biologists, and visits to a number of preserve sites, including the one featured above on the Lucich South tract. From left: Board member Mike Bradbury, USGS biologist Glenn Wiley, PhD, USGS biologist Mike Cassazza, Conservancy Board President Dave Christophel, USGS biologist Lisa Martin. Photo: The Natomas Basin Conservancy.

Figure 9b. Other coordination and communication meetings were held with local government officials. The photo above shows a 2003 on-site tour with Sacramento County Planning Department officials on the Conservancy's Silva tract. Photo: The Natomas Basin Conservancy.

IV. Annual Work Plan
Section IV.D.1

The work plan for the Conservancy's year 2003 effort can be found in Section I.6.l, "Management activities for the coming year."

TABLE OF APPENDICES

Glossary and Abbreviations

Annual Report	The Implementation Annual Report. The Conservancy is required under Section 5.2 of the Implementation Agreement and Section IV.G.4 of the 1997 Natomas Basin Habitat Conservation Plan to produce and deliver an implementation annual report no later than 60 days after the close of the calendar year. Items to be included in the report are specifically prescribed. Similar requirements come with the 2003 NBHCP except that the report is due 120 days after the close of the calendar year.
CDFG	California Department of Fish and Game.
Conservancy	The Natomas Basin Conservancy. A California non-profit public benefit corporation serving as "plan operator" of the Natomas Basin Habitat Conservation Plan.
Giant garter snake	(*Thamnophis gigas*) The giant garter snake is one of the largest garter snakes of the genus Thamnophis, with a total length up to 4.5 feet or greater. The garter snake in the Sacramento Valley and Delta regions has a dorsal ground color often dark brown to olive or nearly black, a complete dorsal strip varying in color from dull yellow to bright orange, and often orange on the ventral surfaces as well. Officially listed as a "threatened" species under federal and state authority, it is one of the two primary species protected under the NBHCP.
IA	The Natomas Basin Habitat Conservation Plan Implementation Agreement. (See NBHCP.)
MAPPOA	Metro Air Park Property Owners Association, permittee of the Metro Air Park Habitat Conservation Plan.
NBHCP	The 1997 Natomas Basin Habitat Conservation Plan and the 2003 Natomas Basin Habitat Conservation Plan. The NBHCP applies to the 53,341-acre interior of the Natomas Basin, located in the northern portion of Sacramento County and the southern portion of Sutter County. The Basin contains incorporated and unincorporated areas within the jurisdiction of the City of Sacramento, Sacramento County and Sutter County. The purpose of the NBHCP is to promote biological conservation along with economic development and the continuation of agriculture within the Natomas Basin. The NBHCP establishes a multi-species conservation program to mitigate the expected loss of habitat values and incidental take of protected species that would result from urban development, operation of irrigation and drainage systems, and rice farming. The goal of the NBHCP is to preserve, restore, and enhance habitat values found in the Natomas Basin while allowing urban development to proceed according to local land use plans. The NBHCP is a supporting document for federal Section 10(a)(1)(B) and State Section 2081 permit applications. Section 10(a)(1)(B) of the federal Endangered Species Act allows incidental take of endangered or threatened species subject to its permit requirements. Similarly, State Section 2081 of the California Fish and Game Code allows the California Department of Fish and Game to enter into management agreements that allows activities which may otherwise result in habitat loss or take of individuals of a state listed species.

Burrowing owl
(Athene cunicularia)

One of the NBHCP's "covered species" and seen on the Conservancy's Silva tract during 2003. Photo: George Samuel Oki

Managed marsh	Seasonal or perennial wetland managed for habitat values for the giant garter snake, a federally protected species, and other covered species. Such land must meet minimum requirements as described in the NBHCP which include, but are not limited to, an assured water supply that will serve the marsh from April through September of each year. The marsh will be a combination of open water, land with wetland vegetation, and other upland areas and may include a buffer area at the periphery. The Conservancy must develop detailed management plans pursuant to Chapter IV, Sections C.1 and D of the 1997 NBHCP for those Conservancy lands designated as managed marsh, in coordination with and subject to the approval of the CDFG and USFWS. Similar reporting is required for the 2003 NBHCP.
Permit	Or, incidental take permit. A permit issued by the USFWS under Section 10 (a)(1)(B) of the federal Endangered Species Act which authorizes the incidental take of a covered species which may occur as a result of urban development, rice farming and management activities with the permit area. Permit may also be used to collectively refer to Section 10 (a)(1)(B) permit, and the Section 2081, management authorization, of the State of California. See also "Take" below.
RD 1000	Reclamation District 1000.
Swainson's hawk	(*Buteo swainsoni*) The state-listed threatened Swainson's hawk is a medium sized buteo (25 to 35 ounces) and is distinguished from other buteos by long, narrow, pointed wings. Swainson's hawk plumage varies greatly. Light phase birds have buff white wing linings with darkly barred brown flight feathers; dark phase birds are dark brown with white undertail coverts, and intermediate reddish plumage occurs between phases. It is one of the two primary species covered in the NBHCP.
Take	"Taking" of Covered Species. The Endangered Species Act of 1973, as Amended, defines take as follows: "…to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct." Additional language from the Act prohibits present or threatened destruction, modification, or curtailment of…habitat and other actions. The Act should be consulted for further information.
TAC	Technical Advisory Committee. The TAC consists of six members, two each appointed from the City of Sacramento, the California Department of Fish and Game and the U.S. Fish and Wildlife Service.
USGS/BRD	United States Geological Service, Biological Resource Division. The Conservancy works with the Dixon, California office of USGS/BRD on giant garter snake matters.
USFWS	United States Fish and Wildlife Service.
Water Company	The Natomas Central Mutual Water Company is the purveyor of water to most of the Conservancy's mitigation land. The Conservancy owned 2,567 shares of stock in the Water Company at December 31, 2003.