Staten Island Wildlife-Friendly Farming Demonstration

Project Information

1. **Proposal Title:**

   Staten Island Wildlife-Friendly Farming Demonstration

2. **Proposal applicants:**

   Ronald Stromstad, Ducks Unlimited, Inc.

3. **Corresponding Contact Person:**

   Christopher Sasso
   Ducks Unlimited, Inc.
   3074 Gold Canal Drive Rancho Cordova, CA 95670
   916 852-2000
   csasso@ducks.org

4. **Project Keywords:**

   Water Quality Assessment & Monitoring
   Waterfowl
   Wildlife-friendly Agriculture

5. **Type of project:**

   Implementation_Pilot

6. **Does the project involve land acquisition, either in fee or through a conservation easement?**

   No

7. **Topic Area**:

   Uplands and Wildlife Friendly Agriculture

8. **Type of applicant:**

   Private non-profit

9. **Location - GIS coordinates:**

   Latitude: 38.164

   Longitude: -121.515

   Datum:

   Describe project location using information such as water bodies, river miles, road intersections, landmarks, and size in acres.

The project is on Staten Island in the Sacramento-San Joaquin Delta Ecological Management Zone and the East Delta Ecological Management Unit. The island is bordered by the North Mokelumne and the South Mokelumne Rivers.

10. **Location - Ecozone:**

    11.2 Mokelumne River

11. **Location - County:**

    San Joaquin

12. **Location - City:**

    Does your project fall within a city jurisdiction?

    No

13. **Location - Tribal Lands:**

    Does your project fall on or adjacent to tribal lands?

    No

14. **Location - Congressional District:**

    11th

15. **Location:**

    California State Senate District Number: 5

    California Assembly District Number: 10

16. **How many years of funding are you requesting?**

    3

17. **Requested Funds:**
    a) Are your overhead rates different depending on whether funds are state or federal?

       No

       If no, list single overhead rate and total requested funds:

       Single Overhead Rate: 18.96

       Total Requested Funds: 1,507,459

    b) Do you have cost share partners already identified?

Yes

If yes, list partners and amount contributed by each:

CA Department of Water Resources $67,550

M&T Staten Ranch $471,364

c) Do you have potential cost share partners?

No

d) Are you specifically seeking non-federal cost share funds through this solicitation?

No

If the total non-federal cost share funds requested above does not match the total state funds requested in 17a, please explain the difference:

18. **Is this proposal for next-phase funding of an ongoing project funded by CALFED?**

Yes

If yes, identify project number(s), title(s) and CALFED program (e.g., ERP, Watershed, WUE, Drinking Water):

2001-G202 Staten Island Acquisition ERP

Have you previously received funding from CALFED for other projects not listed above?

Yes

If yes, identify project number(s), title(s) and CALFED program.

96-M22 Gorrill Dam Fish Screen Categroy III

95-M05 M&T/Parrott Pumping Station and Fish Screen Category III

2001-L205 Sutter Bypass West Side Construction ERP

19. **Is this proposal for next-phase funding of an ongoing project funded by CVPIA?**

    No

    Have you previously received funding from CVPIA for other projects not listed above?

    Yes

    If yes, identify project number(s), title(s) and CVPIA program.

    11332-0-J0 LWR Butte Creek Facilitation/ AFRP

    1133299J12 East West Diversion & Weir #5 AFRP

    113329J136 Weir #3 AFRP

    113320J004 Sutter Bypass East Side AFRP

20. **Is this proposal for next-phase funding of an ongoing project funded by an entity other than CALFED or CVPIA?**

    No

    Please list suggested reviewers for your proposal. (optional)

21. **Comments:**

Environmental Compliance Checklist

Staten Island Wildlife-Friendly Farming Demonstration

1. **CEQA or NEPA Compliance**
   a) Will this project require compliance with CEQA?

      Yes
   b) Will this project require compliance with NEPA?

      Yes
   c) If neither CEQA or NEPA compliance is required, please explain why compliance is not required for the actions in this proposal.

2. **If the project will require CEQA and/or NEPA compliance, identify the lead agency(ies).** *If not applicable, put "None".*

   CEQA Lead Agency: CA Department of Water Resources
   NEPA Lead Agency (or co-lead:) US Bureau of Land Management
   NEPA Co-Lead Agency (if applicable):

3. **Please check which type of CEQA/NEPA documentation is anticipated.**

   CEQA
   -Categorical Exemption
   XNegative Declaration or Mitigated Negative Declaration
   -EIR
   -none

   NEPA
   -Categorical Exclusion
   XEnvironmental Assessment/FONSI
   -EIS
   -none

   If you anticipate relying on either the Categorical Exemption or Categorical Exclusion for this project, please specifically identify the exemption and/or exclusion that you believe covers this project.

4. **CEQA/NEPA Process**
   a) Is the CEQA/NEPA process complete?

      No

      If the CEQA/NEPA process is not complete, please describe the dates for completing draft and/or final CEQA/NEPA documents.

      The process will begin at the survey and design phase. Final documents will be completed before the construction phase.

b) If the CEQA/NEPA document has been completed, please list document name(s):

5. **Environmental Permitting and Approvals** (*If a permit is not required, leave both Required? and Obtained? check boxes blank.*)

LOCAL PERMITS AND APPROVALS

Conditional use permit	
Variance	
Subdivision Map Act	
Grading Permit	Required
General Plan Amendment	
Specific Plan Approval	
Rezone	
Williamson Act Contract Cancellation	
Other	

STATE PERMITS AND APPROVALS

Scientific Collecting Permit	
CESA Compliance: 2081	
CESA Compliance: NCCP	
1601/03	
CWA 401 certification	
Coastal Development Permit	
Reclamation Board Approval	
Notification of DPC or BCDC	
Other	

FEDERAL PERMITS AND APPROVALS

ESA Compliance Section 7 Consultation	
ESA Compliance Section 10 Permit	
Rivers and Harbors Act	
CWA 404	
Other	

PERMISSION TO ACCESS PROPERTY

Permission to access city, county or other local agency land.
Agency Name:

Permission to access state land.
Agency Name:

Permission to access federal land.
Agency Name:

Permission to access private land.
Landowner Name:

6. **Comments.**

Land Use Checklist

Staten Island Wildlife-Friendly Farming Demonstration

1. **Does the project involve land acquisition, either in fee or through a conservation easement?**

   No

2. **Will the applicant require access across public or private property that the applicant does not own to accomplish the activities in the proposal?**

   No

3. **Do the actions in the proposal involve physical changes in the land use?**

   No

   If you answered no to #3, explain what type of actions are involved in the proposal (i.e., research only, planning only).

   Constructing new internal levees, install new pump station, and monitoring of water quality and wildlife use.

4. **Comments.**

Conflict of Interest Checklist

Staten Island Wildlife-Friendly Farming Demonstration

Please list below the full names and organizations of all individuals in the following categories:

- Applicants listed in the proposal who wrote the proposal, will be performing the tasks listed in the proposal or who will benefit financially if the proposal is funded.
- Subcontractors listed in the proposal who will perform some tasks listed in the proposal and will benefit financially if the proposal is funded.
- Individuals not listed in the proposal who helped with proposal development, for example by reviewing drafts, or by providing critical suggestions or ideas contained within the proposal.

The information provided on this form will be used to select appropriate and unbiased reviewers for your proposal.

Applicant(s):

Ronald Stromstad, Ducks Unlimited, Inc.

Subcontractor(s):

Are specific subcontractors identified in this proposal? No

Helped with proposal development:

Are there persons who helped with proposal development?

Yes

If yes, please list the name(s) and organization(s):

Rick Cooper BLM

Ramona Swenson Nature Conservancy

Comments:

None

Budget Summary

Staten Island Wildlife-Friendly Farming Demonstration

Please provide a detailed budget for each year of requested funds, indicating on the form whether the indirect costs are based on the Federal overhead rate, State overhead rate, or are independent of fund source.

Independent of Fund Source

Year 1												
Task No.	**Task Description**	**Direct Labor Hours**	**Salary *(per year)***	**Benefits *(per year)***	**Travel**	**Supplies & Expendables**	**Services or Consultants**	**Equipment**	**Other Direct Costs**	**Total Direct Costs**	**Indirect Costs**	**Total Cost**
1	Cross Levee Construction	400	11200	3200	0	0	269000	0	16800	300200.0	56918	357118.00
2	Discharge Pump Construction	400	11200	3200	0	0	511000	0	16800	542200.0	102801	645001.00
3	Mapping	160	4480	1280	0	0	0	0	6720	12480.0	2366	14846.00
4	Crane and Waterfowl Monitoring	80	2240	640	0	0	16000	3000	3360	25240.0	4786	30026.00
5	Water Quality Monitoring	0	0	0	0	0	70534	0	0	70534.0	13373	83907.00
6	Project Management	200	8200	2200	0	0	0	0	8400	18800.0	1593	20393.00
		1240	37320.00	10520.00	0.00	0.00	866534.00	3000.00	52080.00	969454.00	181837.00	1151291.00

Year 2												
Task No.	**Task Description**	**Direct Labor Hours**	**Salary *(per year)***	**Benefits *(per year)***	**Travel**	**Supplies & Expendables**	**Services or Consultants**	**Equipment**	**Other Direct Costs**	**Total Direct Costs**	**Indirect Costs**	**Total Cost**
4	Crane and Waterfowl Monitoring	80	2320	662	0	0	16560	0	3698	23240.0	4406	27646.00
5	Water Quality Monitoring	0	0	0	0	0	117228	0	0	117228.0	22227	139455.00
6	Project Management	100	4250	1140	0	0	0	0	4623	10013.0	1898	11911.00
		180	6570.00	1802.00	0.00	0.00	133788.00	0.00	8321.00	150481.00	28531.00	179012.00

Year 3												
Task No.	**Task Description**	**Direct Labor Hours**	**Salary *(per year)***	**Benefits *(per year)***	**Travel**	**Supplies & Expendables**	**Services or Consultants**	**Equipment**	**Other Direct Costs**	**Total Direct Costs**	**Indirect Costs**	**Total Cost**
3	Mapping	40	1200	343	0	0	0	0	1680	3223.0	611	3834.00
4	Crane and Waterfowl Monitoring	80	2400	686	0	0	17140	0	4384	24610.0	4666	29276.00
5	Water Quality Monitoring	0	0	0	0	0	110028	0	0	110028.0	20861	130889.00
6	Project Management	100	4400	1180	0	0	0	0	5480	11060.0	2097	13157.00
		220	8000.00	2209.00	0.00	0.00	127168.00	0.00	11544.00	148921.00	28235.00	177156.00

Grand Total=1507459.00

Comments.
None

Budget Justification

Staten Island Wildlife-Friendly Farming Demonstration

Direct Labor Hours. Provide estimated hours proposed for each individual.

Project Manager: Year 1 - 200 hrs; Year 2 - 100 hrs; Year 3 - 100 hrs Staff Engineer and Biologist: Year 1 - 880 hrs.; Year 2 - 80 hrs.; Year 3 - 80 hrs. GIS Specialist: Year 1 - 160 hrs.; Year 2 - 0 hrs.; Year 3 - 40 hrs.

Salary. Provide estimated rate of compensation proposed for each individual.

Project Manager: Year 1 - $41.00/hr.; year 2 - $42.50/hr.; Year 3 - $44.00/hr. Staff Engineer, Biologist, and GIS Specialist: Year 1 - $28.00/hr.; Year 2 - $29.00/hr.; Year 3 - $30.00/hr.

Benefits. Provide the overall benefit rate applicable to each category of employee proposed in the project.

Project Manager - 26.83% Staff Engineer, GIS Specialist and Biologist - 28.57%

Travel. Provide purpose and estimate costs for all non-local travel.

None

Supplies & Expendables. Indicate separately the amounts proposed for office, laboratory, computing, and field supplies.

Included in other Direct Costs

Services or Consultants. Identify the specific tasks for which these services would be used. Estimate amount of time required and the hourly or daily rate.

Costs associated with infrastructure construction (Tasks 1 and 2), crane and waterfwol monitoring (Task 4), and water quality monitoring (Task 5) will be in the form of contract let by DU to local contractors, a cooperative agreement with the Bureau of Land Management, and a cooperative agreementwith the Department of Water Resources, respectively.

Equipment. Identify non-expendable personal property having a useful life of more than one (1) year and an acquisition cost of more than $5,000 per unit. If fabrication of equipment is proposed, list parts and materials required for each, and show costs separately from the other items.

None

Project Management. Describe the specific costs associated with insuring accomplishment of a specific project, such as inspection of work in progress, validation of costs, report preparation, giving presentatons, reponse to project specific questions and necessary costs directly associated with specific project oversight.

Project Management will include all management tasks required by granting entity including reporting, invoicing, and state/federal terms and conditions; Negotiating and servicing all subcontracts; Supervision of all subcontractors and consultants; Landowner/agency relations; Project access; Coordination with agencies

Other Direct Costs. Provide any other direct costs not already covered.

Direct Cost Rate: Year 1: $42.00/hr.; Year 2: $46.23 (est.); Year 3: $54.80 (est.) Direct expenses are those expenses directly attributable to project related hourly charges. The rates are comprised of costs for salaries, benefits, office space, general insurance, support staff, office supplies, and other various direct expenses incurred at the regional offices and conservation department at the home office.

Indirect Costs. Explain what is encompassed in the overhead rate (indirect costs). Overhead should include costs associated with general office requirements such as rent, phones, furniture, general office staff, etc., generally distributed by a predetermined percentage (or surcharge) of specific costs.

The Indirect Overhead costs primarily consists of home office costs and general support functions. The costs includes but are not limited to the following categories: Home Office salaries wages and fringe benefits; Accounting and finance; Operations & maintenance; General office expenses and supplies; Software and equipment rental/lease; Membership dues and subscriptions; Postage; Printing; Communications; Insurance; Conferences fees and travel; Legal; and, Information services.

Executive Summary

Staten Island Wildlife-Friendly Farming Demonstration

Staten Island is located in northern San Joaquin County, between the North and South Forks of the Mokelumne River. The project lies within the Sacramento-San Joaquin Delta Ecological Management Zone and the East Delta Ecological Management Unit. An unsurpassed opportunity exists for a pilot/demonstration project on Staten Island to (1) support and improve wildlife-friendly agriculture that will foster recovery of at-risk native species such as greater sandhill crane and (2) to investigate the effects of different agricultural management practices on wildlife populations and water quality. Staten Island is recognized nationally as an important site in California for wintering waterfowl and is unsurpassed in the Delta as wintering habitat for greater and lesser sandhill cranes (Littlefield and Ivey 2000). There are few if any places in the Delta where the opportunity to have positive impacts on wintering waterfowl and sustainable agriculture exists at such a large scale. This is Phase II of a joint (Ducks Unlimited Inc., Bureau of Land Management and The Nature Conservancy) three phase conservation initiative for Staten Island that is designed to ensure permanent protection, maintain agriculture, and provide optimal management for the Island. Phase I, which was funded in a separate proposal by the TNC, involves land acquisition and baseline monitoring. Phase III will be the development and implementation of restoration and monitoring plans to address uncertainties and guide future management actions to promote wildlife-friendly agriculture. This proposal has two basic components. The first consists of an infrastructure construction component consisting of low interior cross levees and a high volume discharge pump to improve water management capability on the Island. These features will allow the Preserve to increase the quality, quantity and duration of flooded habitat for greater sandhill cranes (state-listed species) and northern pintail (federal species of concern) while maintaining its agricultural base. The second is a project-monitoring component, which will evaluate water management practices effects on habitat use by target species and on water quality, specifically dissolved carbon being discharged from the Island. The ecological and biological goals of the project are to · Facilitate the recovery of the greater sandhill crane: ERP Goal 1 · Increase the diversity of habitat in the East Delta and provide connectivity to Woodbridge Ecological Preserve and Stone Lakes NWF Refuge: ERP Goal 4 · Evaluate the effects of water management and waterfowl use on carbon and nutrient levels in the discharge water: ERP Goal 6

Proposal

Ducks Unlimited, Inc.

Staten Island Wildlife-Friendly Farming Demonstration

Ronald Stromstad, Ducks Unlimited, Inc.

A. Project Description: Project Goals and Scope of Work

Ducks Unlimited, Inc. (DU) requests $1,507459.00 to develop a 9,200 acre demonstration project for wildlife-friendly farming practices on Cosumnes River Preserve's Staten Island area. Staten Island is located in northern San Joaquin County, between the North and South Forks of the Mokelumne River. The project lies within the Sacramento-San Joaquin Delta Ecological Management Zone and the East Delta Ecological Management Unit.

The ecological and biological goals of the project are to

- Facilitate the recovery of the greater sandhill crane: ERP Goal 1
- Increase the diversity of habitat in the East Delta and provide connectivity to Woodbridge Ecological Preserve and Stone Lakes NWF Refuge: ERP Goal 4
- Evaluate the effects of water management and waterfowl use on carbon and nutrient levels in the discharge water: ERP Goal 6

1. Problem

1) Wetlands Loss, Wildlife Declines, and Wildlife-Friendly Agriculture

Delta wetlands and the wildlife populations that depend on them have significantly declined as a result of the development of agricultural islands. The loss of wetlands has been a major factor in the decline of waterfowl and sandhill cranes that depend on the Delta for wintering habitat. In many places, agricultural lands planted in annual grain and row crops have become surrogate habitat for wildlife (CALFED 1999a). Waterfowl and cranes now use rice, corn, alfalfa, and other grains (Collins and Paullin 1988, Elphick and Oring 1998, Elphick 2000, Littlefield and Ivey 2000). However, these croplands are now being converted to much less compatible land uses, such as perennial crops and urban development. The conversion has been dramatic; in south Sacramento County alone the acreage of vineyards has increased five-fold in the past five years, from 5,000 acres to 25,000 acres (TNC in preparation). Neither urbanization nor permanent crop agriculture is compatible with maintenance of Delta ecosystem functions and values. The ERP vision for the Delta calls for increasing the area of Delta corn fields and pastures flooded in winter and spring to provide high-quality foraging habitat for wintering and migrating waterfowl, greater sandhill cranes, shorebirds, and associated wildlife (CALFED 1999a).

An unsurpassed opportunity exists on Staten Island to (1) support and improve wildlife-friendly agriculture that will foster recovery of at-risk native species such as greater sandhill crane (ERP Goal 1) and (2) investigate the effects of different agricultural practices on wildlife populations and water quality. The seasonally flooded agricultural fields of Staten Island provide important habitat for waterfowl and sandhill cranes wintering in the Delta. The wildlife habitat objectives of this proposal are to:

- Develop an efficient and cost effective water management infrastructure on Staten Island to maintain and improve sustainable agriculture and wildlife-friendly farm practices. This will increase habitat availability by allowing 2,500-5,000 acres of corn to be flooded for a longer duration then is presently possible.
- Determine the effect of winter flooding strategies on target bird species, namely greater sandhill crane (state listed threatened species) and northern pintail (federal species of concern).

2) Water Quality and Productivity

The effects of the discharge from seasonally flooded agricultural fields on Delta water quality and food web productivity are unknown. The discharge from flooded fields can affect food-web productivity by affecting the carbon and nutrient loads delivered to the estuary (CALFED 1999a). Drinking water quality is another issue. Island drainage in the Delta contributes large amounts of dissolved organic carbon (DOC). This augments carbon being transported from the watersheds of the Sacramento and San Joaquin rivers. The molecular structure of the carbon from island drains is also of a very reactive type (DWR Municipal Water Quality Investigations Program five-year report 1994.) At treatment plants, DOC reacts with disinfectants such as chlorine to form suspected carcinogens (CALFED Organic Carbon Workshop 1999). Algal blooms stimulated by nutrients can clog intake facilities (D. Peterson, DWR pers. comm.) and cause taste and odor problems (K Kerri, CSUS Water Treatment Plant Operation –Field Study Guide 1996).

Staten Island is considered a medium to low density peat island. But its current location in relation to one of the preferred CALFED alternatives – the through-Delta alternative – elevates the importance of studying the discharge from this island. The water quality objective of this proposal is to:

- Determine the effect of winter flooding on the quantity and quality of organic carbon and nutrients seasonally discharged from the managed wetlands into the Delta channels.

2. Justification

Conceptual Model

1) Wetlands Habitat and Agricultural Practices

Understanding the habitat requirements of greater sandhill cranes and waterfowl and the key processes that support or impair suitable habitat is critical for designing an effective restoration project (Figure 1). The Delta's wetlands are a critical link in the life cycle of waterfowl on the Pacific Flyway and sandhill cranes. Historically, the wetlands and flooded fields provided winter foraging and roosting habitat for these migratory birds. But development of Delta islands disrupted the hydrological and sediment processes necessary to sustain the wetlands. Agricultural practices also destroyed wetlands habitat by replacing native vegetation with a variety of crops. In some cases, waterfowl and cranes have adapted to take advantage of grain crop fields and irrigated pasture (Littlefield and Ivey 2000). Depending on the hydrologic regime used to flood these lands (Fredrickson and Reid 1990, Fredrickson 1991) and the crop type, birds can use agricultural lands as surrogate wetland habitat for feeding and/or roosting.

Littlefield and Ivey (2000) reviewed the conservation status and habitat needs for greater sandhill cranes wintering in the Delta. The Central Valley population winters in the Central Valley and breeds in NE California, Oregon, Washington, and British Columbia. The Delta is one of the two most important wintering sites, and Staten Island is a major use area in the Delta for both roosting and feeding. The presence of secure roost sites is key to the use of an area by sandhill cranes. Cranes typically roost overnight in open shallow water areas of wetlands or flooded agricultural fields. During the day, they forage in grain fields, and loaf or occasionally feed in grasslands, pasture, alfalfa, and lake edges.

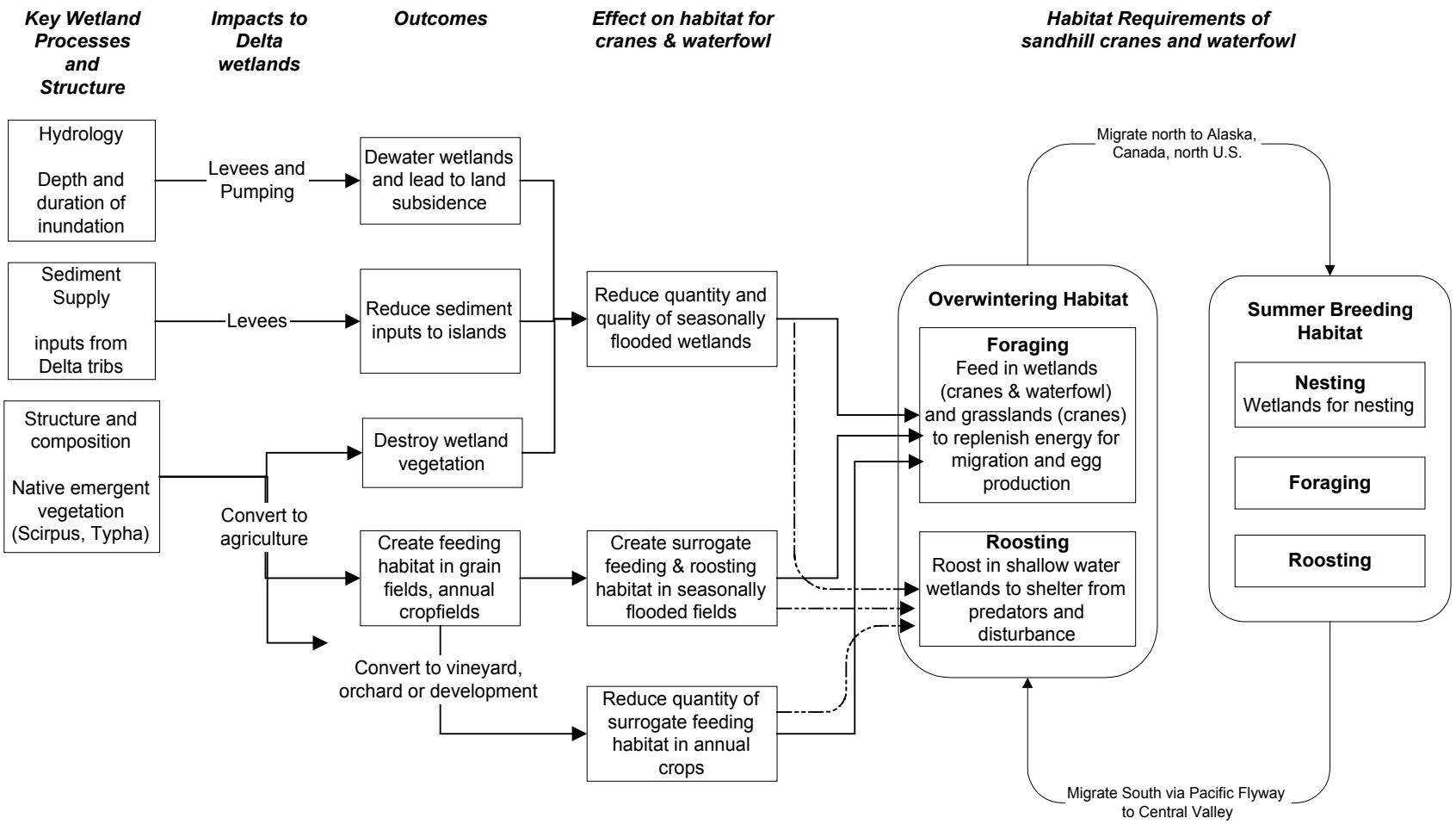
Waterbird surveys of the Cosumnes River Preserve were initiated by Ducks Unlimited in 1989 and have been conducted by Preserve staff and volunteers ever since (CRP survey data). The most abundant duck species to winter in this region are mallard and northern pintail; other common species include northern shoveler, American wigeon, and gadwall. Staten Island is recognized nationally as the most important wintering grounds in the Pacific Flyway for tundra swans and white-fronted geese (F. Reid, Ducks Unlimited, pers. comm.) Snow geese and Canada geese, however, are less abundant here than in the Sacramento Valley (Sacramento Valley National Wildlife Refuges survey data). Waterfowl use agricultural fields for foraging principally, as well as some roosting. The distribution of birds can be patchy as flocks track changing food availability. The pattern of night habitat use is unclear, although observations suggest that ducks will fly to fields at night to forage, possibly an adaptation avoid daytime hunting or disturbance (Jorde and Owen 1988).

2) Water Quality and Productivity

Flooding of agricultural fields typically occurs in fall, and the water is pumped off in winter, usually beginning in January and ending in March. The increased residence time of water on agricultural fields can result in changes in water quality. For example, water pumped from the fields could have different concentrations of carbon and nutrients compared to Delta channel water, due to decomposition of corn stubble, waste from wildlife, and/or nutrient cycling and food web dynamics in the managed wetlands. Carbon and nutrients introduced from managed wetlands may affect food-web productivity in the Delta as well as drinking water quality.

Uncertainty exists about how actions in the watershed affect Delta food-web productivity; CALFED recommends monitoring carbon exchange between restored shallow-water and open water. Monitoring of carbon inputs is also a priority for the CALFED Water Quality Program Plan, which has identified organic carbon as a problem for drinking water (CALFED 1999b). Studies on Twitchell Island by the USGS and at DWR's MWQI SMARTS facility have failed to simulate the actual seasonally flooded wetland land use proposed by this project. Current CALFED ERP funded studies on organic carbon are focused on tidally influenced wetlands, and the qualitative aspects of nutrients and carbon. To date there has been little quantitative work done examining carbon and nutrient loading from in-situ seasonally flooded wetlands and agricultural fields. This project will further our understanding of water quality in the Delta (ERP Goal 6).

Figure 1 - Conceptual Model of Agricultural Development and Populations of Sandhill Cranes and Waterfowl



Hypotheses being tested

1) Wildlife-Friendly Agriculture

Our conceptual understanding of the life history needs of greater sandhill cranes and migratory waterfowl leads us to hypothesize that maintaining and improving the quantity and quality of managed wetland habitat on agricultural lands will lead to increased survival and improved condition of the wintering birds. Birds in better condition should have improved survival during the spring migration to the northern breeding grounds and better reproductive success (LaGrange and Dinsmore 1988). We expect this will result in an increase in populations. Factors beyond the Delta, such as availability of breeding habitat or mortality from predation or disease, may also limit population growth. Protection of wintering habitat nevertheless is essential for the long-term survival of these species on the Pacific Flyway (Weller 1988).

The ERP Strategic Plan identified several areas of scientific uncertainty for which more information is needed to achieve restoration goals. Beyond the riparian area, CALFED is seeking improved understanding of how agricultural practices can be enhanced or modified to improve ecological conditions and species health. While it is clear that much Delta farming can benefit wildlife, there are no large-scale operations dedicated to investigating optimum models for agricultural-wildlife compatibility. Staten Island provides an opportunity to refine wildlife-friendly agriculture practices, which will restore functional equivalents of wetlands habitat (ERP Goal 4) and lead to recovery of at-risk native species such as greater sandhill crane (state listed threatened species) and northern pintail (federal species of concern) (ERP Goal 1).

The proposed project will evaluate the effect of different management practices on habitat use by birds on Staten Island. Improvements to irrigation infrastructure will allow us to alter the flooding regime (depth and duration) in selected fields, such as retaining water on the southern fields for up to a month longer than is currently possible. Our hypotheses are that the number of sandhill cranes and waterfowl on Staten Island (1) is greater in flooded than non-flooded fields, and (2) will increase over time under the improved flooding regime.

2) Water Quality and Productivity

Uncertainty exists about how actions in the watershed affect Delta food-web productivity; CALFED recommends monitoring carbon exchange between restored shallow-water habitat and open water. Monitoring of carbon inputs is also a priority for the CALFED Water Quality Program Plan, which has identified organic carbon as a problem for drinking water (CALFED 1999b). Studies on Twitchell Island by the USGS and at DWR's MWQI SMARTS facility have failed to simulate the actual seasonally flooded wetland land use proposed by this project. Current CALFED ERP funded studies on organic carbon are focused on tidally influenced wetlands, and the qualitative aspects of nutrients and carbon. To date there has been little quantitative work done examining carbon and nutrient loading from in-situ seasonally flooded wetlands and agricultural fields. This project will further our understanding of water quality in the Delta (ERP Goal 6).

We hypothesize that (1) organic carbon and nutrient loads in water pumped onto agricultural fields in the fall will be different than loads in water discharged to the Delta in latter winter-spring, and (2) the flooding and management regime for the proposed wetlands will produce a discharge of carbon and nutrients significantly different in quality and quantity than from the current land use practices on Staten island, as well as on other Delta islands.

Project Type

Based on the available literature and the experiences and lessons learned at the Cosumnes River Preserve, we believe a pilot/demonstration project is appropriate. Staten Island provides an excellent opportunity to support sandhill cranes and waterfowl and to further refine wildlife-friendly agricultural practices. Staten Island is already recognized as an important site in California for wintering waterfowl and is unsurpassed in the Delta as wintering habitat for greater and lesser sandhill cranes (Littlefield and Ivey 2000). The Island provides extraordinarily valuable feeding and roosting habitat due to its immense size (9,200 acres), compatible agricultural practices (1,500-2,500 acres in seasonally-flooded corn), and minimal disturbance (access is limited). There are few if any places in the Delta where the opportunity to have positive impacts on wintering waterfowl and sustainable agriculture exists at such a large scale.

Adaptive Management

Staten Island will be managed to contribute to meeting the waterfowl objectives for the Cosumnes River Preserve through the management of its agricultural fields as seasonal wetlands (Collins and Paullin 1988). The Preserve has a proven track record with wildlife-friendly agricultural practices, and is experienced in creating seasonal wetlands on its 1,000 acre organic rice operation and monitoring habitat use by wintering waterfowl and cranes. An underlying objective of our involvement with Staten Island is to make wildlife-friendly farming more economically viable, thereby reducing the threat of conversion to less suitable land uses.

Evaluating the effectiveness of our restoration actions, and adjusting our management practices accordingly, is integral to the approach at the Cosumnes River Preserve. The application of wetland habitat management practices to agricultural crops will require adaptive approaches to develop an economically efficient operation and a highly desirable habitat for target species such the threatened greater sandhill crane, northern pintail, and other waterfowl species. The Staten Island project would use the adaptive management approach to adjust and refine wetland habitat management, sustainable delta agriculture practices, and discharge of organic carbon. Results of monitoring programs examining habitat use by birds and water quality conditions will feed back into our management strategies, which can include adjustments in water inundation duration, water depths, use of seasonal and permanent wetlands on the Island, crop rotation, and trying new crops such as rice.

3. Approach

The approach will be to enhance an existing farm irrigation infrastructure to create an ability to better manage and control water for greater sandhill crane and northern pintail habitat. The improved capability will allow managers to flood more acreage for longer duration and have greater diversity of flooded habitat than currently exists. The project will require the construction over three miles of interior cross levee (3 to 4 feet in height), the construction of one discharge pump station and the installation of one high capacity water control structure to improve water level management capability on the entire Island. The cross levees will create multiple management units (Figure 3) where water levels will be independently controlled. This control will allow for the management of water levels from zero to eighteen inches in most fields. On these large units a tremendous diversity of foraging and roosting habitat can be manipulated to maximize the benefits for target species. The proposed discharge pump along with the island's cross levee will effectively split the Island into two separate water management units, with approximately 3200 acres on the south and 6000 acres on the north. The north and south units can be drained independently from one another and in a shorter time period due to the increased pump discharge capacity. This will allow up to 45 days of additional flood duration during the critical use period of February 1 to March 15.

The project would measure the effectiveness of improvements by the amount of flooded habitat inundated, the quality of habitat relative to the target species and the diversity of habitat. The management actions would be monitored to determine the effect on waterfowl use patterns and on amounts of dissolved carbon in water discharged from the system. With the construction of a new discharge pump station the Island would have two discharge points to monitor water quality. This will create the opportunity to conduct a comparative analysis of discharge water between different crops, flooding depths and duration.

Task 1: Cross levee construction

Over three miles of low cross levees would be constructed on the island to improve water management on the island. This will improve the ability to irrigate crops, control weeds and create a diversity of winter habitat for waterfowl for a longer period of time in the winter with reduced cost. There are four segments of levee to be improved or constructed to accomplish this objective. These segments (A, B, C, and D) are illustrated on Figure 3 and will require approximately 32,400 cubic yards of fill material and 722 cubic yards of road base material to achieve the desired levee elevations.

Task 2: Discharge Pump Construction

One high capacity pump station and control structure will be constructed at the site indicated on Map 2. This station will improve the water management of the Island by splitting it into two water management units. Each management unit would have an independent capability to manage water levels. The north unit would be approximately 6000 acres and the south unit would be 3200 acres. The project would consist of constructing a metal pump station platform, installing four pumps with motors capable of pumping at 100 hp each, extending 2000 feet of ditch to the pump station and installing a

large gate valve to separate the two management units. This includes pump stand fabrication and installation, motor and pump construction and installation, and all electrical wiring, installation and hook up.

Task 3: Mapping
The subtasks to compile all relevant existing data on Staten Island into a single GIS relational database include (1) assemble and review available information, (2) create digital map layers (1:24,000) including base map, topography, soils, infrastructure, and habitat, and (3) input data into GIS system.

Task 4: Crane and Waterfowl Monitoring
BLM Cosumnes River Preserve staff, in cooperation with Ducks Unlimited, will conduct waterfowl and habitat monitoring. The team will develop a final monitoring plan, conduct annual monitoring from September to March, assess monitoring data annually, and prepare a monitoring report.

Task 5: Water Quality Monitoring
Water quality monitoring will be conducted by DWR Municipal Water Quality Investigations Program (MWQI), which is interested in the effects of island discharge on Delta carbon loading. The program will develop a final monitoring plan, conduct annual monitoring from September to March, assess monitoring data annually, and prepare a monitoring report.

Task 6: Project management
Project management will include preparing cooperative agreements, providing project oversight, inspection, submitting quarterly reports to CALFED, providing annual presentations on project status, preparing final report, and providing ongoing liaison with CALFED and local stakeholders.

4. Feasibility

DU has been an active partner in Cosumnes River Preserve since its inception. DU has the capability, through the use of cooperative agreements, to actively participate with government agencies and other non-profits, which will benefit public land management. The Bureau of Land Management's role on the Preserve for the last five years has been to facilitate site management, restoration, and wildlife-friendly farming practices for the Preserve partners. The Nature Conservancy, one of the Preserve's partners, will be active in the implementation of the restoration. This project provides long-term benefits for the partners' efforts at Cosumnes River Preserve.

The proposed project will be carried out entirely on property owned by the Nature Conservancy, which is under active cultivation for agriculture. The construction of the pump station platform, installation of water control structures and construction of cross levees will be completed on lands that have been heavily modified as a result of reclamation efforts in the Delta. No significant impacts to the environment are expected as a result of the project. The project will require normal permitting and inspection process associated with improvements to agricultural property. BLM will complete the

appropriate NEPA process and review for each component of the project. Because the monitoring does not include any direct action, the actions are categorically excluded under NEPA.

5. Performance Measures (Monitoring and Assessment Plans, Table 1)

1) Wildlife-Friendly Agriculture

BLM will monitor the number and diversity of bird species utilizing seasonally flooded and non-flooded agricultural lands during the prolonged flood period created by this project. Surveys will be conducted twice monthly during the flooding season when birds are expected to be using the fields (September-March). Counts will be made of each management unit during the day (to document daytime foraging) and night (to document crane roosting and waterfowl roosting and feeding). Night vision equipment will be used for night surveys. A complete count of greater sandhill cranes and northern pintail will be attempted, and other species will be counted (i.e. other ducks, other cranes, unknown cranes, shorebirds, etc.). Crop type and water depths of each surveyed field will be recorded.

This survey will be conducted in the winter before construction to obtain baseline data, and will be repeated annually for two more years to examine the effects of the new flooding regime. We will also compare Staten Island data with results from other areas of the Preserve that may be monitored, such as the rice fields and managed wetland ponds.

2) Water Quality

DWR MWQI Program will conduct water quality monitoring of the intake water, water within the managed field units, and water discharged from the pump stations to the Mokelumne River. Water quantity measurements will be taken initially at the existing pump station the first year along with water quality measurements to establish a baseline-loading estimate. Water quantity and quality measurements will be taken at the old and new pump stations during the second year. A third year of measurements will be taken 3-5 years after pump installation.

Sampling will occur September through March. Dissolved oxygen, pH, temperature, electrical conductivity, and turbidity will be taken as field measurements. Total and dissolved organic carbon, UVA 254, nitrogen, phosphorus, and total dissolved solids analyses will be conducted at the DWR Bryte lab facility in West Sacramento.

The quality of intake water from the Mokelumne will be measured weekly. Twelve grab samples will be taken monthly from the same flooded field units that are surveyed for waterfowl and crane use. At the pumps, refrigerated auto-samplers will collect discharge samples daily, and the samples will be processed weekly. Adaptive management of the water quality sampling will allow adjustment of frequency of analyses based on the rate of change of quality. Initially, daily samples from the discharge will be run. If the rate of change is high, a real-time carbon analyzer may be used in place of the auto-samplers for year two.

Discharge volume will be measured by impeller-type continuous flow meters installed on each of the four discharge pipes located at the existing and new pump stations. These will be read weekly. Additional records of pump operation will be kept in coordination with the island managers to more accurately relate flow to quality to develop loading estimates.

Table 1. Performance Measure Plan

Performance Measure	Metric	Target	Baseline
1) Waterfowl use of habitat	Species and number of individuals of each species	Increased use of habitat	Number of birds using habitat prior to restoration
2) Crane use of habitat	Number of cranes	Increased use of habitat	Number of birds using habitat prior to restoration
3) Shorebird use of habitat	Species and number of individuals of each species	Increased use of habitat	Number of birds using habitat prior to restoration
4) Water quality	Dissolved oxygen, pH, temperature, electrical conductivity, turbidity, total and dissolved organic carbon, UVA 254, nitrogen, phosphorus, and total dissolved solids	No change in or improved water quality relative to pre-restoration discharge	Water quality prior to restoration

6. Data Handling and Storage

All waterfowl monitoring data will be collected, handled, and stored by DU and the Cosumnes River Preserve Wetlands Manager (BLM). All water quality data will be collected, handled and stored by DWR. The Cosumnes River Preserve (BLM) will maintain the comprehensive database and, and, as appropriate, will provide documents upon request.

7. Expected Products and Outcomes

The improved infrastructure will be a product of the proposal. The beneficial outcome of this product will be increased duration (30-45 days) of flooded habitat, increased diversity of habitat, and an increase in quantity of habitat. Findings from the bird and water quality monitoring efforts will be summarized in a written report which will provide guidance for decision makers throughout the Delta.

8. Work Schedule

The work schedule is summarized in Figure 4. The project milestones will consist of establishing baseline data in 2002-2003, design and construction of new infrastructure in 2003, and the completion of a two year post-project monitoring schedule in spring 2005. Waterfowl use and habitat monitoring would be conducted each year. Water quality would be measured 2002-2003 (baseline), 2003-2004 and one additional time between 2004-2005 to correspond with any adaptive management change to the management of the Island. Each of the tasks 1 – 5 could be separated and phased in at different times if necessary. The monitoring schedule and design would have to be adjusted if the pump station was not constructed in the first year. The water quality monitoring component is separable from the project in whole or in part (e.g. grab samples from flooded fields). The third year of water quality monitoring could be postponed indefinitely based on the information found in the first two years sampling.

B. Applicability to CALFED ERP Goals and Implementation Plan and CVPIA Priorities

1. ERP Goals

The ecological and biological goals of the project are to:

- Facilitate the recovery of the greater sandhill crane (ERP Goal 1)
- Increase the diversity of habitat in the East Delta and provide connectivity to Woodbridge Ecological Preserve and Stone Lakes NWF Refuge (ERP Goal 4)
- Evaluate the effects of water management and waterfowl use on carbon and -nutrient levels in water discharged to the Delta (ERP Goal 6)

2. Implementation Plan Priorities

REGIONAL IMPLEMENTATION - Delta and Eastside Tributaries Region

- Restore upland wildlife habitat and support wildlife-friendly agriculture (Priority 3)

The ERP Strategic Plan identified several areas of scientific uncertainty for which more information is needed to achieve restoration goals. Beyond the riparian area, CALFED is seeking improved understanding of how agricultural practices can be enhanced or modified to improve ecological conditions and species health. While it is clear that much Delta farming can benefit wildlife, there are no large-scale operations dedicated to investigating optimum models for agricultural-wildlife compatibility. This project provides an opportunity to refine wildlife-friendly agriculture practices, which will restore functional equivalents of wetlands habitat (ERP Goal 4) and lead to recovery of at-risk native species such as greater sandhill crane (state listed threatened species) and northern pintail (federal species of concern) (ERP Goal 1). This project will also aid in achieving CALFED Programmatic Action E011901 to cooperatively manage 40,000 to 75,000 acres of agricultural lands in the Delta Region (CALFED 2000).

This project will help achieve a number of strategic objectives regarding restoration or enhancement of CALFED priority species. Species addressed include *greater sandhill cranes*, *waterfowl*, *shorebirds,* and *wading birds* (CALFED 1999a).

2. Relationship to Other Ecosystem Restoration Projects

This proposal is an addition to the Cosumnes River Preserve's existing effort in wildlife-friendly farming and wetlands restoration effort. The project assists in achieving goals established by the Central Valley Habitat Joint Venture for this area of the Delta. The proximity of the Staten Island project to Woodbridge Ecological Preserve, the Stone Lakes National Wildlife Refuge, and the Cosumnes River Preserve wetlands and farmland complex provides links of habitat effectively creates the "East Delta Habitat Corridor" envisioned in the ERPP. The preservation of agricultural land and continued agricultural use of the property will maintain an important economic unit for the local community.

3. Requests for Next-Phase Funding

None

4. Previous Recipients of CALFED or CVPIA funding

See Appendix

5. System-Wide Ecosystem Benefits

The Staten Island Wildlife-Friendly Farm project complements the upstream conservation efforts of the Cosumnes River Project, the Woodbridge Ecological Preserve, and the Stone Lake National Wildlife Refuge, particularly in regard to the physical linking of patches of both terrestrial and aquatic habitat. Farmlands benefit the area by ensuring that disruptive activities and land uses will not occur in the vicinity of the existing and restored habitat lands, and by adapting the row and field crop agriculture to provide important surrogate habitat and food for native species, particularly migratory birds. Most importantly, the completion of this project will build upon wildlife-compatible farming efforts demonstrated elsewhere in the Cosumnes River Project area.

C. Qualifications

Ducks Unlimited is the nationally recognized authority on the restoration and enhancement of wetlands. Since 1937, DU has raised over $1 billion for restoration and enhancement of over 1 million acres of wetlands in North America. Qualified biologists and engineers on staff at DU's Western Regional Office (3074 Gold Canal Road, Rancho Cordova, California) are skilled in restoration activities such as cut and fill excavation, selection and installation of water control structures, and design and installation of pump stations. DU is skilled in construction management and is able to design the project,

provide bid packages to potential contractors, and ensure the project is completed to specifications. DU is very familiar with government contracting procedures.

- **Mr. James R. Well** brings an engineering and construction background to Ducks Unlimited, Inc. (DU). Educated at North Dakota State University (B.S. Civil Engineering), he has spent a career working in design, construction, and construction management of civil works in twelve central and western states. Mr. Well is currently employed by DU as the Manager of Contracting and Fiscal Services at the Western Regional Office. Mr. Well supervises three other engineers and manages the habitat restoration activities in California. Mr. Well can be reached at Ducks Unlimited, Inc.'s Western Regional Office, 3074 Gold Canal Drive, Rancho Cordova, CA 95670 (phone (916) 852-2000, fax (916) 852-2200, email jwell@ducks.org).

- **Dr. Christopher R. Sasso** is the regional biologist assigned to the Cosumnes River Preserve. Dr. Sasso received his Ph.D. in biology from the University of Miami in 1999, and currently oversees project development for Duck Unlimited's Valley/Bay CARE program in the Sacramento Valley. He administers programs with budgets in excess of $1 million. He is responsible for coordinating the engineering and design, project delivery and inspection, and budget tracking for all projects within this area. In addition, Dr. Sasso works extensively with many different agencies and groups on cooperative wetland restoration and enhancement projects. He also works with the agricultural community to enhance properties for wildlife benefits.

The Bureau of Land Management is responsible for the management of 270,000,000 acres of public land in the eleven western states. In California the BLM administers and directs management on over 14,000,000 acres. The BLM, Folsom Field Office administers lands along the Yuba, American, Cosumnes, Mokelumne, Stanislaus, Toulumne, and Merced rivers. The BLM has skills and the experience to work with federal, state, and county governments, local agencies, private landowners, and environmental interest groups on multiple issues related to water quality, agriculture, wildlife habitat development, recreation, water rights and hydropower. For the last five years the BLM has coordinated all site management for the Cosumnes River Preserve. During this time the Preserve has grown eight-fold to 40,000 acres, added three land owning partners to the partnership, and successfully implemented a wildlife-friendly farm program on the Preserve. The BLM was instrumental in the completion a non-levee flood control project on the Preserve. This project was cooperative effort between private landowners, the Army Corp of Engineers, Sacramento County and the BLM, which successfully returned 1,300 acres to the Cosumnes River floodplain.

- **Rick Cooper** has worked in natural resource management for 22 years with the Bureau of Land Management. He graduated from California State University Humboldt with a B.S. degree in Range Management in 1978. Mr. Cooper became the Preserve Manager of the Cosumnes River Preserve in 1995. Mr. Cooper has successfully led an interdisciplinary staff of Nature Conservancy and BLM

employees in achieving habitat management objectives for the Preserve. He has been effective working with local ranchers and farmers to integrate and implement wildlife-friendly agriculture on Preserve lands and has created an effective mechanism for the coordinated management of lands with nine different land owning partners.

Department of Water Resources- The Municipal Water Quality Investigations Program (MWQI) is found within the Water Quality Assessment Branch, in the Division of Planning and Local Assistance, California Department of Water Resources. The MWQI Program is overseen by a committee of the urban State Water Contractors and other technical experts in the field of drinking water quality. The Program has been conducting monitoring and research on source water quality in the Delta since 1982. The MWQI Program has generated the largest data set of Delta drinking water quality monitoring in existence. Approximately 12 staff members with expertise in water quality, toxicology, waste and drinking water treatment, agriculture, and technical support are drawn upon to conduct studies. 3 of these 12 people are dedicated field group members and work out of the Bryte facility. They have 2 mobile labs at their disposal, as well as equipment storage and sample processing capabilities.

Current studies include: ongoing weekly and monthly monitoring at key historic sites; an evaluation of pathogen monitoring methods within source waters; assessment of a real-time TOC analyzer at Hood; a watershed investigation at Barker Slough; a modeling assessment of carbon contributions from agricultural drains from Delta islands; and a 3 factorial experiment studying the flooding of peat soils varying water depth, peat depth, and water residence time. The Program is also represented on the CALFED Drinking Water Council and the Drinking Water Quality workgroup. The Program has also testified at the Delta Wetland Hearings.

Bryte Lab is also part of the Water Quality Assessment Branch. The lab is a fully certified ELAP lab by the Department Of Health Services. The lab uses the FLIMS (Field Lab Information Management System) to track samples and QA/QC information. Analytical results, along with QA information, are transferred to a relational database within the Branch to be accessed by project leaders.

D. Cost

1. **Budget –Online Forms**

2. **Cost-Sharing**
   (Cost Share Contribution $538,914.00)

This project includes an excellent cost share component. M&T Staten Ranch (former owner) and DWR-MWQI are making significant contributions to the project. M&T Staten Ranch will cost share by contributing winter habitat management (flooding), a diesel motor and pump to the pump station, the construction of 8,858 feet of 4 foot high

cross levee, and 60,000 cubic yards of fill material. DWR-MWQI contributes a mobile lab with fuel and supplies and two refrigerated auto-sampler and bottles.

M&T Staten Ranch Cost Share
($471,364.00)

Component	Cost
Management and Labor	$10,080.00
Construction 8858 foot levee	$364,284.00
Diesel pump and motor	$41,000.00
Fill	$56,000.00

DWR-MWQI
($67,550.00)

Component	Cost
Mobile Lab – fuel, supplies, reagents, meters	$32,550.00
Two refrigerated auto samplers	$35,000.00

E. Local Involvement

The San Joaquin County Board of Supervisors, the Administrative Officer, Planning Director, and Water Resources Director and the Delta Protection Commission have received notice of this proposal. DU will make a presentation to the Delta Protection Commission's Agriculture committee on October 23, 2001 regarding this project. Because of the potential benefit to Sacramento County of activities enabled by the proposed activities, we have also notified the Sacramento County counterparts.

The CALFED North Delta Improvements Group and the Mokelumne-Cosumnes Watershed Alliance (MCWA) will be important forums for ensuring local and interagency involvement in the activities made possible by this grant. Members of these groups have been informed of this proposal, and will be consulted and engaged as we move toward implementation of the activities proposed. Together, the North Delta Group and MCWA include all of the relevant Resource Conservation Districts, Reclamation Districts, and other major stakeholders. Through their regular meetings, we will ensure close coordination of this program with their plans and objectives.

In addition, the Cosumnes River Preserve carries out a regular program of outreach to decision-makers and community groups in the greater Sacramento region. Activities in this program include periodic presentations to or participation with the Galt Chamber of Commerce, the North Delta Conservancy, service clubs, historical societies, and other groups. These presentations serve to keep key constituencies informed of Preserve activities and to provide the vehicle for further involvement by those who seek it. Finally, the Preserve has a web page (www.cosumnes.org) with background information, maps, and descriptions of current programs.

F. Compliance with Standard Terms and Conditions

DU will be able to comply with standard terms and conditions contained in attachments D and E of the 2002 proposal solicitation package.

G. Literature Cited

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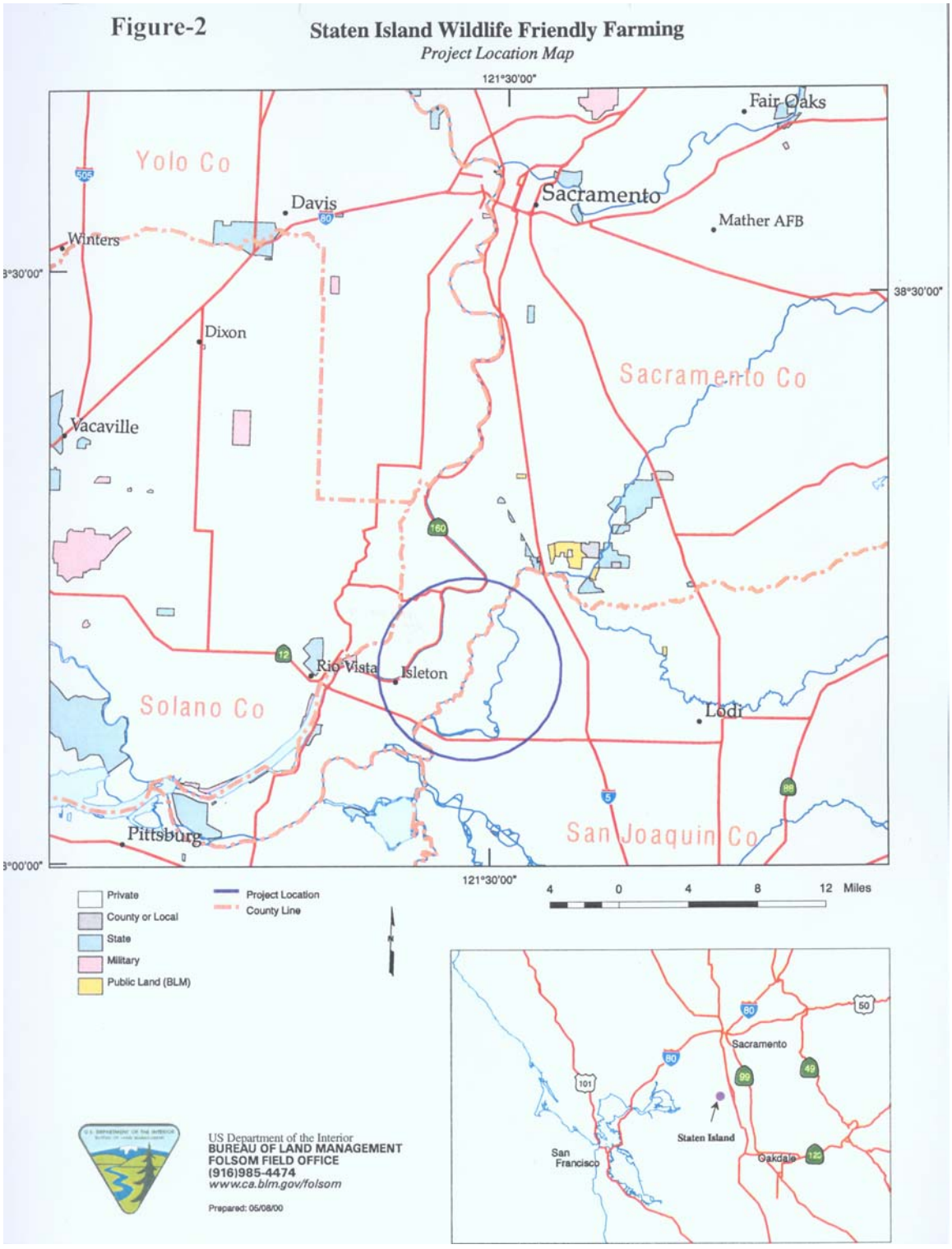


Figure-2
Staten Island Wildlife Friendly Farming
Project Location Map
121°30'00"
38°30'00"
Fair Oaks
Yolo Co
Davis
Sacramento
Mather AFB
Winters
Dixon
Sacramento Co
Vacaville
Rio Vista
Isleton
Solano Co
Lodi
Pittsburg
San Joaquin Co
Private
County or Local
State
Military
Public Land (BLM)
Project Location
County Line
4 0 4 8 12 Miles
US Department of the Interior
BUREAU OF LAND MANAGEMENT
FOLSOM FIELD OFFICE
(916)985-4474
www.ca.blm.gov/folsom
Prepared: 05/08/00
Sacramento
Staten Island
San Francisco
Oakdale

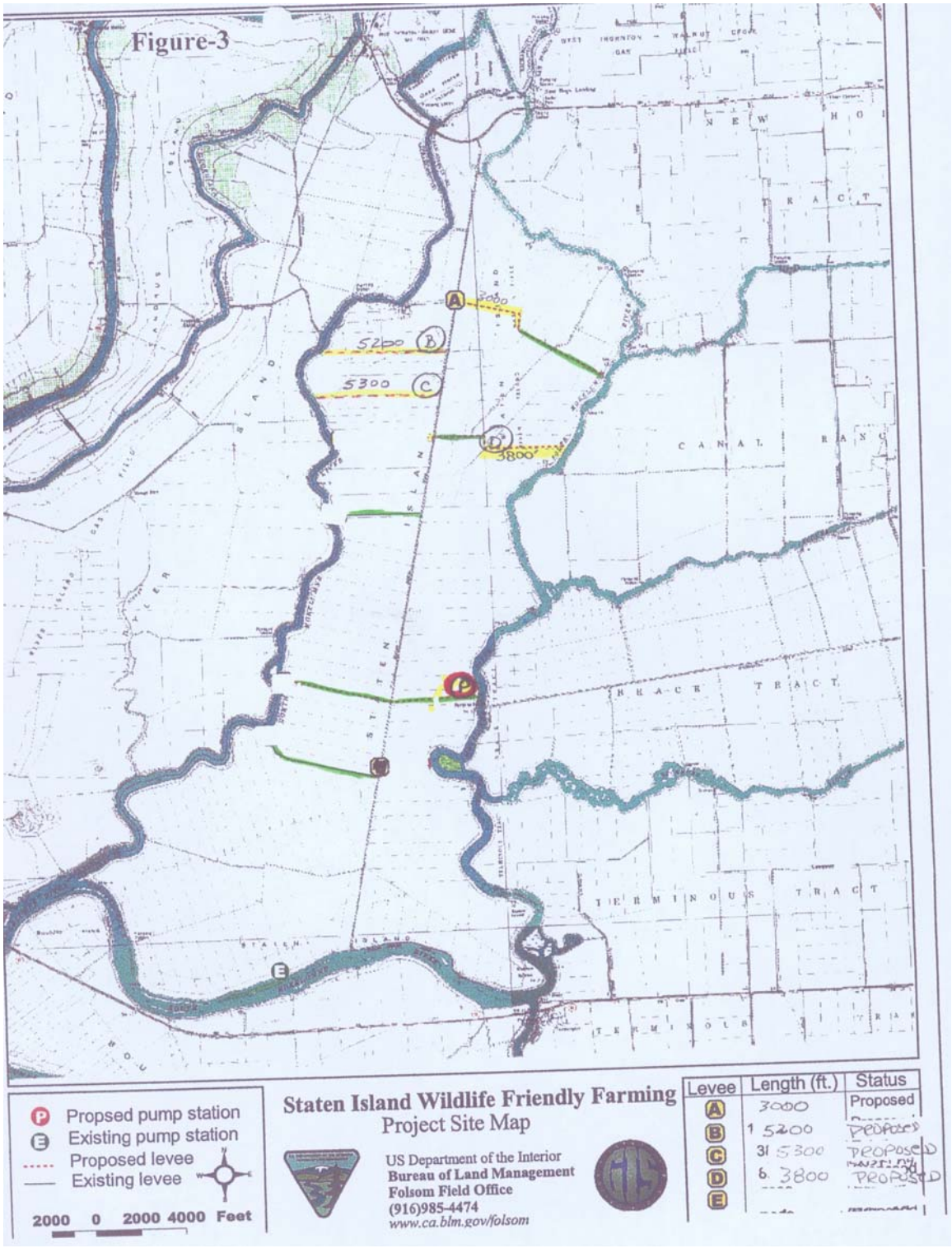
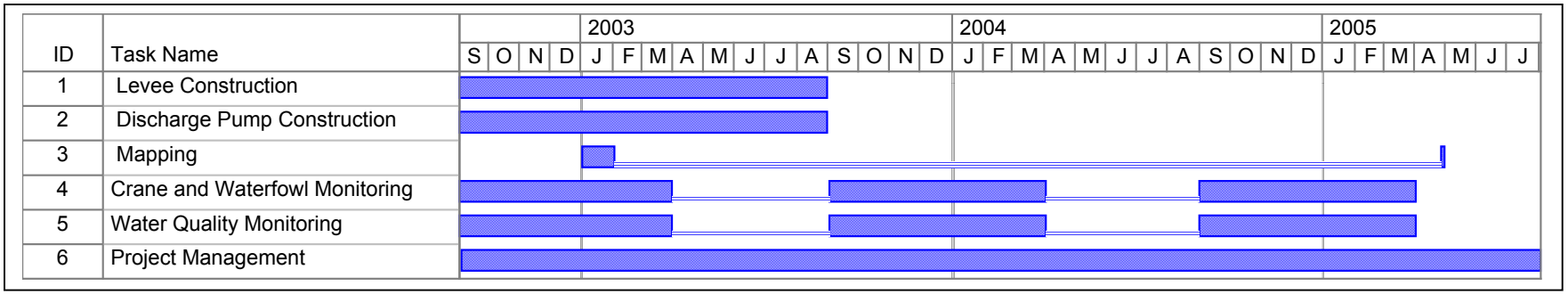


Figure-3
A
3000
B
5200
C
5300
D
3800
E
P Propsed pump station
E Existing pump station
Proposed levee
Existing levee
2000 0 2000 4000 Feet
Staten Island Wildlife Friendly Farming
Project Site Map
US Department of the Interior
Bureau of Land Management
Folsom Field Office
(916)985-4474
www.ca.blm.gov/folsom
Levee | Length (ft.) | Status
A | 3000 | Proposed
B | 5200 | Proposed
C | 5300 | Proposed
D | 3800 | Proposed
E

Figure 4


ID
Task Name
2003
2004
2005
S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J
1
Levee Construction
2
Discharge Pump Construction
3
Mapping
4
Crane and Waterfowl Monitoring
5
Water Quality Monitoring
6
Project Management

Appendix

Project Name:	CALFED Number:	Financial Status	Current Status
Lower Butte Creek Project: Phase II Preliminary Engineering and Environmental Analysis for Butte Sink Structural Modifications and Flow-through System	99-B02	Expenditure: $520,574.60 Income: $531,850.58 Ducks Unlimited Inc: $ 11,275.98	Ongoing Final design and Draft NEPA/CEQA complete
Gorrill Dam Fish Screen	96-M22	Expenditure: $1,548,907.86 Income: $1,523,047.43 Ducks Unlimited Inc: $ 25,860.43	Complete
M & T/Parrott, Pumping Station and Fish Screen	95-M05	Expenditure: $4,749,845.92 Income: $4,530,556.71 Ducks Unlimited Inc.: $ 219,289.21	Complete
Rancho Esquon/Adamas Dam Fish Screen	96-M21	Expenditure: $1,151,326.33 Income: $1,034,780.62 Ducks Unlimited Inc: $ 116,545.71	Construction complete Monitoring fish passage

Project Name:	CVPIA Number:	Financial Status	Current Status
Lower Butte Creek Project, Phase III – Butte Creek, Drumheller Exclusion Barrier Final Engineering, Permitting and Construction	1448-11332-9J006	Expenditure: $ 228,951.73 Income: $ 227,856.74 Ducks Unlimited Inc: $ 1,094.99	Construction complete Five Points design in progress
Lower Butte Creek Project, Phase II – Butte Creek, Butte Sink/Sutter Bypass Stakeholder Coordination/Facilitation	113329-9-J135	Expenditure: $ 67,151.50 Income: $ 62,263.44 Ducks Unlimited Inc: $ 4,888.06	Ongoing
Lower Butte Creek Project, Phase II – Butte Creek, Sutter Bypass East-West Diversion Dam Preliminary Engineering and Environmental Review	113329-9-J122	Expenditure: $ 298,286.93 Income: $ 250,000.00 Ducks Unlimited Inc: $ 48,286.93	Ongoing Final design and Draft NEPA/CEQA complete
Lower Butte Creek Project, Phase II – Butte Creek, Sutter Bypass Weir #5 Preliminary Engineering and Environmental Review	11332-9-J122	Expenditure: $ 298,286.93 Income: $ 250,000.00 Ducks Unlimited Inc: $ 48,286.93	Ongoing Final design and Draft NEPA/CEQA complete
Lower Butte Creek Project, Phase II – Butte Creek, Sutter Bypass Weir #3 Preliminary Engineering and Environmental Review	113329-9-J136	Expenditure: $ 298,286.93 Income: $ 250,000.00 Ducks Unlimited Inc: $ 48,286.93	Ongoing Final design and Draft NEPA/CEQA complete
Sutter Bypass, East Side	11332-0-J004	Expenditure: $ 56,633.43 Income: $ 55,370.43 Ducks Unlimited Inc: $ 1,263.00	
Lower Butte Creek, Butte Slough Phase II – Preliminary File	11332-0-J003	Expenditure: $ 1,618.50 Income: $ 0.00 Ducks Unlimited Inc: $ 1618.50	
(B)(22) Administration	1448-11300-97-J172	Expenditure: $1,330,118.00 Income: $1,330,118.00 Ducks Unlimited Inc: $ 0	
(B)(22) Administration	114209J	Expenditure: $ 960,624.46 Income: $ 960,624.46 Ducks Unlimited Inc: $ 0	
(B)(22) Administration	113007J043	Expenditure: $ 51,476.20 Income: $ 51,476.20 Ducks Unlimited Inc: $ 0	