

# Information Sheet on Ramsar Wetlands (RIS)

*Categories approved by Recommendation 4.7, as amended by Resolution VIII.13 of the Conference of the Contracting Parties.*

Note for compilers:

1. The RIS should be completed in accordance with the attached *Explanatory Notes and Guidelines for completing the Information Sheet on Ramsar Wetlands*. Compilers are strongly advised to read this guidance before filling in the RIS.
2. Once completed, the RIS (and accompanying map(s)) should be submitted to the Ramsar Bureau. Compilers are strongly urged to provide an electronic (MS Word) copy of the RIS and, where possible, digital copies of maps.

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**1. Name and address of the compiler of this form:**

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FOR OFFICE USE ONLY.

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Designation date

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Site Reference Number

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**2. Date this sheet was completed/updated:**

January 14, 2005

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**3. Country:**

United States

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**4. Name of the Ramsar site:**

Grassland Ecological Area (GEA)

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**5. Map of site included:**

Refer to Annex III of the *Explanatory Note and Guidelines*, for detailed guidance on provision of suitable maps.

**a) hard copy** (required for inclusion of site in the Ramsar List): *yes* X -or- *no*

**b) digital (electronic) format** (optional): *yes* X -or- *no*

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**6. Geographical coordinates** (latitude/longitude):

36°55' to 37°20' N Latitude, and 120°35' to 121°00' W Longitude

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**7. General location:**

Include in which part of the country and which large administrative region(s), and the location of the nearest large town. The GEA is located in western Merced County, California. Adjacent to the city of Los Banos (pop. 30,000), the GEA is 80 miles northwest of Fresno (pop. 400,000), and 50 miles south of Modesto (pop. 180,000). It lies within the San Joaquin River Basin in California's Central Valley and San Francisco Bay Eco-region, and is within the Central Valley Habitat Joint Venture of the North American Waterfowl Management Plan.

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**8. Elevation:** (average and/or max. & min.)

Elevation varies from 18 meters to 40 meters (asl) (approx. 60' to 130')

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**9. Area:** (in hectares)

Total Area: 65,000 hectares; 50 kilometers north to south, by 40 kilometers east to west; 160,000 acres, in a block approximately 30 miles long by 25 miles wide. Approximately 65%, or 109,000 acres, of the Grasslands Ecological Area is made up of wetlands; including managed wetlands and unmanaged wetland habitats such as sloughs, oxbows, riparian corridors, vernal pools, and low-lying floodplain subject to periodic inundation.

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**10. Overview:**

Provide a short paragraph giving a summary description of the principal ecological characteristics and importance of the wetland.

The Grassland Ecological Area (GEA) lies within the San Joaquin Valley and exists as the largest remaining contiguous block of freshwater wetlands remaining in California. It consists of federal, state, and privately owned seasonal, semipermanent, and permanent marshes, riparian corridors, vernal pool complexes, and grasslands.

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### 11. Ramsar Criteria:

Circle or underline each Criterion applied to the designation of the Ramsar site. See Annex II of the *Explanatory Notes and Guidelines* for the Criteria and guidelines for their application (adopted by Resolution VII.11).

1 • 2 • 3 • 4 • 5 • 6 • 7 • 8

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### 12. Justification for the application of each Criterion listed in 11. above:

Provide justification for each Criterion in turn, clearly identifying to which Criterion the justification applies (see Annex II for guidance on acceptable forms of justification).

#### 1) Representative or unique wetlands: Central Valley Seasonal Freshwater Marsh, Vernal Pools, and Riparian Corridor.

The Central Valley of California once consisted of over four million acres of wetlands, yet only five percent now remain, mostly due to drainage and conversion to agricultural use. The Grassland Ecological Area (GEA) is the largest remaining block of contiguous wetlands in the Central Valley, and is thus a unique and critical resource for wildlife. In addition, GEA is a prime example of a vernal pool complex, with an ecologically distinctive flora and fauna, which is an increasingly rare habitat type; ninety percent of California's vernal pools have been destroyed. Riparian habitat in California has been reduced to just 2 % of what it was a century ago; the GEA contains riparian habitat along 30 kilometers of the San Joaquin River and about 60 kilometers of other riparian habitat on tributaries to the San Joaquin River, a river used by Chinook Salmon and other anadromous fish. This segment of the river and associated floodplain are important to water quality as well.

#### 2) Importance to Endangered, Threatened or Otherwise Sensitive Species.

Several federally listed threatened (T) and endangered species (E) under the Endangered Species Act are known to occur either seasonally or year-round at GEA. Some of these are included in the IUCN Red List of Threatened Species (2004) as Vulnerable (VU) or Endangered (EN). As one of the largest remaining vernal pool complexes, the GEA is home to many rare species associated with this disappearing habitat including:

Conservancy fairy shrimp (*Branchinecta conservatio*, E, EN), Longhorn fairy shrimp (*Branchinecta longiantenna*, E, EN), Vernal pool fairy shrimp (*Branchinecta lynchi*, T, VU), Vernal pool tadpole shrimp (*Lepidurus packardii*, E, EN), California tiger salamander (*Ambystoma californiense*, T), and Colusa grass (*Neostapfia colusana*, T). Other endangered species using GEA include the San Joaquin kit fox (*Vulpes macrotis mutica*, E), Bald eagle (*Haliaeetus leucocephalus*, T), and Western snowy plover (*Charadrius alexandrinus nivosus*, T). Giant garter snakes (*Thamnophis gigas*, T, VU) have recently been documented within GEA.

#### 3) Importance in Maintaining Regional Ecological Diversity.

The GEA supports diverse habitats including seasonally flooded marshlands, semi-permanent marsh, riparian woodland habitat, wet meadows, vernal pools, native uplands and native grassland including valley Alkali Sacaton grassland (*Sporobolus airoides*). This high level of habitat diversity supports an array of wildlife diversity. In addition to its importance to waterfowl, the GEA supports numerous raptors, shorebirds, wading birds, and other wildlife; over 550 species of plants and animals have been identified in the GEA. Because of the substantial loss of Central Valley riparian and wetland habitat to agriculture and increasingly to development, the wetlands of GEA continue to become even more critically important for maintaining the region's ecological integrity and diversity. Urban development will continue to pose significant threats to California's wetlands as the Valley's human population is expected to triple by the year 2020. Yet the GEA is one bright spot of optimism because a substantial proportion of GEA wetlands is already protected in perpetuity.

#### Importance as Habitat for Endemic Plant or Animal Species.

Delta button celery (*Eryngium racemosum*) is endemic to Merced County, is found only along a 30 kilometer stretch of the San Joaquin River. It is a state endangered plant and a candidate species on the federal endangered species list. Populations within protected areas of the Grasslands Ecological Area, including on national wildlife refuges, provide the main refugia for its continued existence.

Tri-colored blackbirds (*Agelaius tricolor*), a colonial nesting species, is found in California's Central Valley; the GEA is one of their main nesting areas.

#### **4) Importance as Habitat for Critical Stage in the Biological Cycles of Plants and Animals.**

GEA is a critical wintering area for Pacific Flyway waterfowl, supporting up to one million individual birds. It provides wintering habitat for over 30,000 lesser Sandhill Cranes (*Grus canadensis*). It is also a vital stopover point for shorebirds, raptors, and songbirds in the fall and spring along their migration routes. With little wetland and riparian habitat remaining in California, the presence of GEA habitats has become increasingly critical and important for migratory birds. GEA was officially recognized in 1991 by the Western Hemisphere Shorebird Reserve Network as an international site of importance for shorebird use (<http://www.manomet.org/WHSRN/sites.php>). Shorebird counts are highest in March and April during spring migration when hundreds of thousands of birds utilize the GEA as a stopover point. In addition, tens of thousands of shorebirds make use of GEA habitats on a year-round basis as do several species of waterfowl and raptors. The natural riparian corridor provides fish passage and rearing habitat.

#### **5) Importance to Waterfowl or Water Birds in General.**

Based on Pacific flyway mid-winter waterfowl survey totals compared to peak counts within the GEA, 15-20% of the flyway use the GEA during many winters. The GEA is a critical area for Pacific Flyway waterfowl populations, including 19 duck species and 6 goose species. Over 60 million duck "use-days" and 3 million goose "use-days" occur annually in the GEA, with the annual peak population between 500,000 and one million ducks and geese. (A "use-day" is 1 bird present for 1 day, therefore 10 birds present for 10 days would be 100 "use days"). The GEA is also important as a wintering area for 30,000 lesser Sandhill cranes (*Grus Canadensis*), >1000+ of American white pelicans (*Pelecanus erythrorhynchos*) and hundreds of Double-crested cormorants (*Phalacrocorax auritus*), as well as tens of thousands of shorebirds annually. Up to a hundred thousand shorebirds use the GEA during migration, feeding on invertebrates in seasonal wetlands, acquiring the nutrients needed for breeding and to complete their migration. Hundreds of herons, ibis, and bitterns (of several species) nest within the GEA.

#### **6) Importance to Particular Species of Waterfowl.**

By comparing overall North American duck breeding population counts to aerial waterfowl surveys in the GEA over the past decade, we find that GEA supports significant proportions of several waterfowl species over the winter. In particular, GEA regularly winters over 11% of the entire North American populations of Gadwall (*Anas streper*, Peak Count 106,600), Northern pintail (*Anas acuta*, Peak Count 499,500), Green-winged teal (*Anas crecca*, Peak Count 329,300), Northern shoveler (*Anas chpeata*, Peak Count 188,000), and Canvasbacks (*Aythya valisineria*, Peak Count 29,700).

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#### **13. Biogeography** (required when Criteria 1 and/or 3 and /or certain applications of Criterion 2 are applied to the designation):

Name the relevant biogeographic region that includes the Ramsar site, and identify the biogeographic regionalisation system that has been applied.

##### **a) biogeographic region:**

It lies within the San Joaquin River Basin in California's Central Valley and San Francisco Bay Eco-region ("Mediterranean California", per CEC's *Ecological Regions of North America*).

##### **b) biogeographic regionalisation scheme** (include reference citation):

Commission for Environmental Cooperation. 1997. *Ecological Regions of North America*. CEC, Montreal.

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#### **14. Physical features of the site:**

Describe, as appropriate, the geology, geomorphology; origins - natural or artificial; hydrology; soil type; water quality; water depth, water permanence; fluctuations in water level; tidal variations; downstream area; general climate, etc.

The GEA lies within the southern part of California's Central Valley and is drained by the San Joaquin River and its tributaries. It is considered part of the San Joaquin Valley, which is actually not a valley but the bed of an ancient inland sea filled by alluvial sediments over thousands of years. The San Joaquin Valley meets the Sacramento Valley at Stockton, CA where their combined delta meets San Francisco Bay. The Valley is bordered on the east by the Sierra Nevada Range and on the west by the Coast Range. Topographical relief within the GEA is minimal and consists of gentle relief, often associated with swales. Hydrological patterns were historically influenced in the North Grasslands by flood flows caused by melting snow-pack carried by the San Joaquin River and other stream flows, and by rainfall. The wide flood plains and shallow water tables of the area promoted recharge of the shallow water table and supported thousands of acres of marshlands. The wetlands were primarily riparian in nature and consisted of a complex network of deep slough channels and shallow swales. Based on the severity and timing of flood flows, these wetlands provided a diverse complex of temporary, seasonal, semi-permanent and permanent wetland habitat types. The South Grasslands historically was a drier, alkali sink region more influenced by rainfall and local flooding than the North. South Grasslands' hydrological patterns provided predominantly temporary seasonal wetland habitats and tended to be more saline and alkaline in nature.

Due to flood-control and irrigation projects during the past century the entire hydrology of the Central Valley has been dramatically altered by a massive system of dams, canals, and water diversion structures; and most of the valley's wetlands are now managed by the controlled application of water. Currently, the hydrology of a wetland within the GEA is regulated using a series of canals and control structures. With the passage of the Central Valley Project Improvement Act in 1992, the public and private wetlands of the Grasslands were provided an adequate water supply to maintain this critical natural resource. Most wetlands in the GEA are seasonal in nature, flooded from fall until spring; some year-round wetlands are maintained for resident wildlife and breeding birds. The quality of the water delivered via this artificial system is adequate, though some salinity is an ongoing issue. The quantity of water delivered is generally adequate, but is decreased in drought years and when responsible agencies are unable to afford a supply that provides optimal management. However, an adequate supply is assured by law.

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#### **15. Physical features of the catchment area:**

Describe the surface area, general geology and geomorphological features, general soil types, general land use, and climate (including climate type).

The GEA lies within the San Joaquin Valley and is drained by the San Joaquin River and its tributaries. Streams that originate in the Sierra Nevada provide 95% of the runoff entering the Central Valley. The wetlands within the GEA are primarily seasonal in nature, but temporary, semi-permanent and permanent wetlands can also be found throughout the area.

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#### **16. Hydrological values:**

Describe the functions and values of the wetland in groundwater recharge, flood control, sediment trapping, shoreline stabilization, etc.

The wide floodplains and shallow water tables of the area promoted recharge of the shallow water table and supported thousands of acres of marshlands.

Management mimics historical flood patterns with pulses of high water flow throughout the winter and in the spring. Flooding can recharge groundwater, ease flooding concerns downstream, and filter contaminants from the water

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#### **17. Wetland Types**

##### **a) presence:**

Circle or underline the applicable codes for the wetland types of the Ramsar "Classification System for Wetland Type" present in the Ramsar site. Descriptions of each wetland type code are provided in Annex I of the *Explanatory Notes & Guidelines*.

**Marine/coastal:** A • B • C • D • E • F • G • H • I • J • K • Zk(a)

**Inland:** L • M • N • O • P • Q • R • Sp • Ss • Tp • Ts • U • Va •  
Vt • W • Xf • Xp • Y • Zg • Zk(b)

**Human-made:** 1 • 2 • 3 • 4 • 5 • 6 • 7 • 8 • 9 • Zk(c)

**b) dominance:**

List the wetland types identified in a) above in order of their dominance (by area) in the Ramsar site, starting with the wetland type with the largest area.

- Ts - Seasonal marsh - 40 %
- 4 - Seasonally flooded grazing land - 20 %
- W - Seasonal shrub marsh - 15%
- Xf - Riparian seasonally flooded forest -10%
- Tp - Permanent marsh - 5 %
- Ss - Vernal pools - 5 %
- L – Delta - 1 %
- M – River - 1 %
- N - Intermittent stream - 1 %
- P - Seasonal lake - 1 %
- R - Alkali flats - 1 %

**18. General ecological features:**

Provide further description, as appropriate, of the main habitats, vegetation types, plant and animal communities present in the Ramsar site.

The area consists of a number of different communities including riparian cottonwood/willow forest, riparian oak woodlands, freshwater marshes, vernal pools, alkali sinks, and native alkali grasslands. It is a dynamic landscape, with temporal variation seasonally and yearly, as well as spatial variation across the expanse of lands. It serves as critical habitat for waterfowl in the winter, it serves as a migratory corridor for Neotropical songbirds, shorebirds, and raptors in the fall and spring, and it serves as year-round habitat for a variety of resident species. It is one of only a few small remnants of a formerly vast Central Valley wetland complex and is therefore critical to protect, enhance, and expand.

**19. Noteworthy flora:**

Provide additional information on particular species and why they are noteworthy (expanding as necessary on information provided in 12. Justification for the application of the Criteria) indicating, e.g., which species/communities are unique, rare, endangered or biogeographically important, etc. *Do not include here taxonomic lists of species present – these may be supplied as supplementary information to the RIS.*

Vegetative communities within GEA are diverse and include some relatively uncommon habitats such as vernal pools, sand dunes, alkali sacaton grasslands, and alkali sink scrub. Floral associations are unique such as the alkali grasslands community of Alkali sacaton (*Sporobolus airoides*), Salt grass (*Distichus spicata*), and Iodine bush (*Allenrolfea occidentalis*); the Alkali sink community of iodine bush, Seep-weed (*Suaeda frutescens*), Alkali heath (*Frankenia salina*), and *Atriplex* spp.; and the vernal pool communities which include Goldfields (*Lasthenia* spp.), Tidy tips (*Layia* spp.), Popcorn flower (*Plagiobothrys* spp.), Purple owls-clover (*Castilleja exserta*), and Downingia (*Downingia* spp.).

Rare plants include Palmate-bracted bird's beak (*Cordylanthus palmatus*), Hispid bird's beak (*C. mollis hispidus*), Delta button celery (*Eryngium racemosum*), and Colusa grass (*Neostapsia colusana*).

**20. Noteworthy fauna:**

Provide additional information on particular species and why they are noteworthy (expanding as necessary on information provided in 12. Justification for the application of the Criteria) indicating, e.g., which species/communities are unique, rare, endangered or biogeographically important, etc., including count data. *Do not include here taxonomic lists of species present – these may be supplied as supplementary information to the RIS.*

A large portion of the entire Pacific Flyway waterfowl (Anatidae) population, up to 1 million birds, winters in the GEA. This includes extensive use by Northern Pintails (*Anas acuta*), a species which has shown very significant declines over the past decade. In addition, the GEA has been recognized internationally as one of 57 Western Hemisphere Shorebird Reserve Network sites as of May 2004. It serves as a vital spring and fall migration stopover for several hundred thousand shorebirds which pause during their long international journeys to feed in the invertebrate-rich shallow wetlands. The Grasslands also host many sensitive or rare species including the Aleutian Canada goose (*Branta canadensis leucopareia*), San Joaquin kit fox, Tule elk, Bald eagle, Peregrine falcon, Swainson's hawk (*Buteo swainsoni*), and Tri-colored blackbird (*Agelaius tricolor*). American bald eagles (*Haliaeetus leucocephalus*) and peregrine falcons (*Falco peregrinus*) are usually spotted in GEA every year.

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**21. Social and cultural values:**

e.g., fisheries production, forestry, religious importance, archaeological sites, social relations with the wetland, etc. Distinguish between historical/archaeological/religious significance and current socio-economic values.

Yokut Indians once lived in the Central Valley, and cultural artifacts and signs have been found within the GEA. The area is a destination for duck hunters and bird watchers which provide healthy eco-tourism for the local economy.

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**22. Land tenure/ownership:**

(a) within the Ramsar site:

Federal Government: **U.S. Fish and Wildlife Service**  
San Luis National Wildlife Refuge  
Merced National Wildlife Refuge

State Government: **California Department of Fish and Game**  
North Grasslands Wildlife Area (Salt Slough, China Island, Gadwall)  
Volta Wildlife Area  
Los Banos Wildlife Area (Los Banos, Mud Slough)

**California Department of Parks and Recreation**  
Great Valley Grasslands State Park

Private organizations: **Grassland Resource Conservation District**  
See attached list for site names

(b) in the surrounding area:

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**23. Current land (including water) use:**

(a) within the Ramsar site:

Public lands are used for the protection of wildlife and for wildlife-oriented recreation including hunting, fishing, and wildlife observation. Private lands are primarily waterfowl hunting clubs and/or grazing lands. Surrounding uses include agriculture, grazing, and urban development (towns of Merced, Los Banos, Santa Nella, Dos Palos and Gustine). Agriculture products include cotton, corn, alfalfa, and fruit and nut orchards. Dairy and beef cattle, as well as sheep grazing occur throughout the GEA.

(b) in the surroundings/catchment:

Surrounding uses include agriculture, grazing, and urban development (towns of Merced, los Banos, Santa Nella, Dos Palos and Gustine). Agriculture products include cotton, corn, alfalfa, and orchards.

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**24. Factors (past, present or potential) adversely affecting the site's ecological character, including changes in land (including water) use and development projects:**

In the past, destruction/conversion of wetlands in the Central Valley of California has been primarily for agricultural production. Today, less than 5 % of the original wetland acreage remains. It is therefore crucial to protect the remaining fragments of habitat, GEA being the largest.

Of recent concern to the integrity of the wetlands has been the availability of adequate water supplies, both in regards to quantity and quality of water. With inadequate supplies in the 1980's, public and private wetlands were forced to use agricultural drain water, laden with selenium and high concentrations of other toxins. In 1983 substantial bird die-offs and deformities occurred at Kesterson Reservoir, the terminus location for most of this agricultural drain water. The extent of the problem at the reservoir was alarming and exemplified the dangers of using poor quality water for wildlife. With the passage of the Central Valley Project Improvement Act in 1992, the public and private wetlands of the Grasslands were assured an adequate water supply.

Currently and in the near future, the largest threat to remaining wetlands is urban development. The Central Valley is expected to triple its human population by the year 2030, and Merced County specifically is expected to grow rapidly, especially once the slated University of California campus is constructed. The USFWS therefore made this area a priority for easements during the 1980's and '90's and progress has been swift in protecting these lands. The next priority areas for protection within the GEA include the corridor between North and South Grasslands, the vernal pool complexes of the east, and the open space buffer along the entire area.

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**25. Conservation measures taken:**

List national category and legal status of protected areas, including boundary relationships with the Ramsar site; management practices; whether an officially approved management plan exists and whether it is being implemented.

Approximately one third of the area is in public ownership. Some recent land acquisitions have been restored from agricultural land back to wetlands. In addition, approximately 75% of the private lands are under perpetual conservation easement. The U.S. Fish and Wildlife Service holds the development rights on these lands ensuring that they remain as native, wetland habitats and that major topographical alterations do not occur.

Protected areas and other important site designations include:

National Wildlife Refuge Lands and Conservation Easements  
Bureau of Reclamation  
California Department of Fish and Game Lands and Conservation Easements  
California State Parks

Western Hemisphere Shorebird Reserve Network  
Important Bird Area (Audubon Society)  
USDA/Wetland Reserve Program easements

In addition, the Fish and Wildlife Service, Natural Resource Conservation Service, California Department of Fish and Game, and private organizations such as Ducks Unlimited and California Waterfowl Association are extremely active in the area. These organizations work cooperatively to continually protect, enhance, and restore habitat in GEA. Each year many such projects are undertaken to improve habitat on hundreds or thousands of acres

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**26. Conservation measures proposed but not yet implemented:**

e.g. management plan in preparation; official proposal as a legally protected area, etc.

Several other properties are currently being appraised for Fish and Wildlife Service conservation easements.

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**27. Current scientific research and facilities:**

e.g., details of current research projects, including biodiversity monitoring; existence of a field research station, etc.

The Grasslands Ecological Area has served as a research site for many Masters and Doctoral projects by students from such universities as U.C. Davis, U.C. Santa Cruz, Humboldt State Univ., and Sacramento State Univ. Recent studies have included those on waterfowl habitat selection and brood ecology, shorebird habitat selection, vernal pool invertebrate population dynamics, and songbird response to management practices.

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**28. Current conservation education:**

e.g. visitors' centre, observation hides and nature trails, information booklets, facilities for school visits, etc.

The Grassland Environmental Education Center is located near the town of Gustine and provides hands-on learning experiences for local school children. School groups come for the day and learn about wetlands, indoor learning exercises and lab work, and spend time outdoors identifying wetland flora and fauna.

In 1998 Los Banos hosted the first annual Wild on Wetlands Weekend. This event is cosponsored by the various public and private agencies in the area as well as Merced College. The purpose of the event is to educate the public on the importance of wetlands in general, and the GEA specifically. Participants choose from several informative workshops and field trips according to their interests. Topics include threatened and endangered species of the area, a panel of agency representatives discussing wetland management, botany of Central Valley, bat behavior, and several workshops on species identification; field trips include those to view and learn about tule elk, wildflowers, vernal pool invertebrates, and ornithology.

In addition, the National Wildlife Refuges, State Parks, and the State Wildlife Areas provide year-round access and wildlife interpretation to visitors. Many informative panels and pamphlets are available to visitors to provide information on the natural resources of the area. Local teachers will often bring in school groups for independent or guided tours of these areas. Finally, each winter and spring the USFWS hosts a large-scale volunteer riparian restoration effort (201 volunteer-days in 1998). The public becomes actively and personally involved in the ecological restoration of their surrounding resources. In this effort, they learn much about restoration techniques and the importance of riparian and wetland environments to wildlife.

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**29. Current recreation and tourism:**

State if the wetland is used for recreation/tourism; indicate type(s) and their frequency/intensity.

The GEA provides diversity and abundance of recreational opportunities including waterfowl and upland game bird hunting, fishing, wildlife observation, and wildlife photography. Public lands are open year-round and receive heavy public use. In addition, many of the private lands are hunting clubs and consequently are intensively used during waterfowl hunting season. Over 100,000 people are estimated to visit the GEA each year. Merced County, where the GEA is located, usually has the greatest county harvest of waterfowl in the United States.

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**30. Jurisdiction:**

Include territorial, e.g. state/region, and functional/sectoral, e.g. Dept of Agriculture/Dept. of Environment, etc.

The GEA is within the territorial jurisdiction of the State of California and Merced County. In addition, the US Fish and Wildlife Service has jurisdiction over the migratory bird and threatened and endangered species resources within the GEA. Functional or management authority within the GEA is based upon ownership of the particular parcel of land within the GEA. State Parks, California Fish and Game, and the Fish and Wildlife Service manage their own individual areas. The Grasslands Water District and Resource Conservation District coordinate and advise the private duck club owners on management of their private lands.

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**31. Management authority:**

Provide the name and address of the local office(s) of the agency(ies) or organisation(s) directly responsible for managing the wetland. Wherever possible provide also the title and/or name of the person or persons in this office with responsibility for the wetland.

For Federal lands:            Kim Forrest

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For State Lands: John Beam / Bill Cook  
Department of Fish and Game  
18110 Henry Miller Av  
Los Banos, CA 93635  
Tel: 209-826-0463 / Fax: 209-826-1761  
E-mail: jbeam@dfg.ca.gov and losbanos@dfg.ca.gov

Or

Dennis Imhoff  
Department of Parks and Recreation  
31426 W. Highway 152, Gonzaga Rd  
Gustine, CA 95322-9737  
Tel: 209-826-1196 / Fax: 209-826-0284  
E-mail: dimho@parks.ca.gov

Private landowners In care of:  
Grasslands RCD  
22759 S. Mercy Springs Rd  
Los Banos, CA 93635  
Don Marciochi  
Tel: 209-826-5188 / Fax: 209-826-4984

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### 32. Bibliographical references:

scientific/technical references only. If biogeographic regionalisation scheme applied (see 13 above), list full reference citation for the scheme.

Mid-winter Annual Waterfowl Survey; US Fish and Wildlife Service Reports

Commission for Environmental Cooperation. 1997. *Ecological Regions of North America*. CEC, Montreal.

Bi-weekly Aerial Waterfowl Census, CA Fish and Game Reports

1997 Heronry Summary, US Fish and Wildlife Service Report (Attach. A)

“Important Bird Area” Nomination: Data for Bird Populations (Attach. B)

1998 Point Reyes’ Report: Shuford et al.; Shorebird Survey (Attach. C)

IUCN 2004. *2004 IUCN Red List of Threatened Species*. < <http://www.iucnredlist.org>>.

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