

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.

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

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Designation date

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Site Reference Number

2. Date this sheet was completed/updated:

April 2005

3. Country: USA

4. Name of the Ramsar site: Catahoula Lake

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* -or- *no*

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

6. Geographical coordinates (latitude/longitude):

31° 30' north 92° 06' west

7. General location:

Include in which part of the country and which large administrative region(s), and the location of the nearest large town.

Catahoula Lake is located on the western edge of the Mississippi River alluvium in the complex Red River backwater area. Located in LaSalle and Rapides Parishes in central Louisiana the lake is 20 miles northeast of Alexandria, Louisiana.

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

Mid-July to mid-November (summer pool stage): 27.5 msl, 2025 ha. Mid-November to January 31: 29.5 msl, 10,530 ha. February 1 to mid-July: 36.0 msl, 12150 ha, the latter the area of the Ramsar site.

9. Area: (in hectares)

10. Overview:

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

Catahoula Lake has long been recognized as an important waterfowl wintering area in Louisiana. This large, shallow, poorly drained wetland supports choice waterfowl food plants and has been referred to colloquially as the largest moist soil unit in North America. Subject to drastic water level fluctuations the lake provides habitat for hundred of thousands of ducks, geese, and shore/wading birds as well as aquatic habitat for both sport and commercial fishes. This unique 12,150 ha. (30,000 acre) wetland is owned by the State of Louisiana with management authority vested with the Louisiana Department of Wildlife and Fisheries. The lake is managed under a tri-party management plan with the co-operators including the U.S. Army Corps of Engineers, U.S. Fish and Wildlife Service, and the Louisiana Department of Wildlife and Fisheries.

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

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).

Criterion 1: Catahoula Lake is a unique wetland type due to the annual grass and sedge communities that flourish on the lake that are choice waterfowl foods which result in what has been referred to colloquially as the largest moist soil unit in North America. Furthermore, Catahoula Lake is the largest natural freshwater lake in Louisiana, covering more than 46 square miles (USGS 2002). Significant stands of wild chufa (*Cyperus sp.*) and millet (*Echinochloa sp.*), contribute to the biological diversity of the region. With the extensive loss of floodplain habitat due to flood control and development throughout North America, remaining floodplain ecosystems like Catahoula Lake are becoming increasingly valuable. Continued loss of these remaining floodplain lakes will result in the continued decline in fisheries in the associated rivers. It is vitally important to preserve the unique and important Catahoula Lake ecosystem (Ewing 2004).

Criterion 4: The lake supports a large variety of waterfowl, especially pintails (*Anas acuta*) and canvasbacks (*Aythya valisineria*), during a critical stage in their life cycle as a wintering ground. Other duck species that consistently utilize the lake during the winter are blue-wing teal (*Anas discors*), green-wing teal (*Anas crecca*), mallard (*Anas platyrhynchos*), gadwall (*Anas strepera*), wigeon (*Anas americana*), shoveler (*Anas chrypeata*), wood duck (*Aix sponsa*), and ring-necked (*Aythya collaris*). White-fronted geese (*Anser albifrons*) are abundant in October and November. Additionally, over 20 species of shorebirds and large numbers of wading birds such as wood storks (*Mycteria americana*), roseate spoonbills (*Platalea ajaja*), and multiple species of herons (*Ardea*, *Egretta*, and *Butorides*), egrets (*Ardea*, *Egretta*, and *Bubulcus*), and ibis (*Plegadis* and *Eudocimus*) utilize the lake during low-water periods in summer and fall. Sanctuary for waterfowl is provided by the nearby 2,430 ha. (6,000 ac.) Catahoula National Wildlife Refuge and by a 410 ha. (1,010 ac.) state refuge or rest area near the center of the lake.

Criteria 5 and 6: Catahoula Lake supports populations of waterfowl such as Northern Pintails (*Anas acuta*) and Canvasbacks (*Aythya valisineria*). A peak population estimate of 123,000 canvasbacks was recorded in 2003 on Catahoula Lake. The national breeding population estimate for canvasbacks was 500,000. Catahoula Lake has accounted for as much as 26% of the total canvasback population recorded nation wide in annual mid-winter waterfowl surveys. The 1% biogeographic population estimate (Wetlands International, 2002) is of 6200 individuals.

In recent years, the lake has supported 40,000-300,000 ducks from October to January. Population peaks in excess of 400,000 ducks were recorded in the late 1980's. Shorebirds and wading birds, numbering in the tens of thousands, utilize the lake in summer and fall.

Criterion 7: Young fish are supported by the Catahoula Lake floodplain. Sport fish species associated with this habitat include: largemouth bass (*Micropterus salmoides*), white bass (*Morone chrysops*), yellow bass (*Morone mississippiensis*), crappie (*Pomoxis spp.*), bluegill (*Lepomis spp.*), red ear and other sunfish species (*Lepomis spp.*). Commercial fish species include: buffalo (*Ictiobus spp.*),

carp (*Cyprinus carpio*), catfish (*Ictalurus spp.* and *Ptyodictis olivaris*), gar (*Atractosteus spatula* and *Lepidosteus spp.*), freshwater drum (*Aplodinotus grunniens*) and shad (*Dorosoma spp.*). Other commercially important aquatic species supported by this habitat include crawfish (*Procambarus spp.*), turtles (*Chelydra*, *Macrolemys*, *Kinosternon*, *Sternotherus*, *Chrysemys*, *Deirochelys*, *Graptymes*, *Terrapene*, and *Trionyx spp.*), frogs (*Rana*, *Hyla*, and *Pseudacris spp.*) and alligators (*Alligator mississippiensis*).

Criterion 8: The detritus from decay of flooded vegetation provides food for aquatic invertebrates, insects, and other small organisms that in turn provide food for the newly hatched fish. This rich food source and the abundant cover provided by the flooded vegetation support high survival and rapid growth of young fish.

Catahoula Lake is extremely important as spawning and nursery habitat for a variety of fish species. "This important habitat provided by Catahoula Lake contributes to fisheries of adjacent waters in the floodplain including Little River, Old River, French Fork, Black River and numerous smaller lakes, bayous and sloughs. Studies have shown that floodplain lakes that undergo a natural "flood-pulse" are more productive than impoundments and oxbow lakes that are isolated from the river systems and have more stable water levels. In Catahoula Lake, as the lake dries up during the summer de-watering cycle, the drying process helps to firm bottom sediments so that when re-flooded, the bottom provides an excellent spawning substrate for bottom nesting fish species. Also, as the bottom is exposed to oxygen, bacteria and fungus in the soil convert inorganic nutrients in the soil to forms that can be utilized later by aquatic organisms. The exposed bottom also supports growth of vegetation that will supply both food and cover for aquatic organisms when flooded (Ewing 2004).

When floodwaters inundate the Catahoula Lake bed in the winter and spring, organic matter from decayed vegetative matter is introduced back into the rivers, contributing to the aquatic food chain of the rivers. In exchange, sediments from the rivers containing inorganic nutrients are deposited in the lake that can be used by the lake as a source of nutrients for the plant community. During the spring flood, vast numbers of fish from adjacent rivers and streams enter the flooded lake to spawn.

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: Eastern Temperate Forest

b) biogeographic regionalisation scheme (include reference citation): Ecological Regions of North America

Commission for Environmental Cooperation. Ecological Regions of North America: Toward a Common Perspective. Canada. Communications and Public Outreach Department of the CEC Secretariat. 1997.

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.

“Catahoula Lake is part of the Catahoula Fault Zone, therefore, it originated from a down thrust in the earth’s surface. The formation involved both a fault block and later alluvial deposition and erosion (Wills 1965)”. “Soils over much of the lake bed are of fine sedimentary materials that become very soft and easily penetrated when flooded. Pan-shaped deposits of sandy “outwash” occur at the mouth of drainages into the lake and for some distance into the lake bed along the edges of main channels. Stranded low sandy ridges parallel the perimeter of the lake. These sandy areas, which are quite firm, may be overlain by a few inches of silt. A hard clay pan exists at variable depths below the soil surface. The area that retains water throughout the year is extremely “oozy” and difficult to traverse by foot (Wills 1965)”. “Lake depths range from 4 to 5 feet during the low-water period, mid-July to October, to approximately 25 feet during the spring high-water period (Section 1135 Preliminary Restoration Plan 1997).” The Catahoula Lake Diversion Canal provides an outlet from the lake to the Black River downstream of the lock. Average maximum temperature for the area is 77°F, average minimum temperature is 56°F, and average yearly temperature is 66°F (The Weather Channel 2004). Average precipitation is 66 inches.

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).

“Catahoula Lake has a watershed of 2,672 square miles that extends generally northwestward from the lake to Ruston and the vicinity of Arcadia, Louisiana. This is an airline distance of some 80 miles with an average width of almost 33 miles. Little River drains an area of 2,555 square miles before entering the lake (Wills 1965).”

“The lake is bounded on the north by land that rises abruptly to a height of 20 to 30 feet above the high water stage and on the south by low land that is subject to annual overflow (Wills 1965)”.

Areas to the north and northwest of the lake are generally of the Libuse, Gore, and Vick soil series (Soil Conservation Service 1991). These soils are nearly level to moderately steep, moderately well drained to somewhat poorly drained soils that have a loamy surface layer and a loamy, a clayey or a loamey and clayey subsoil. Areas to the east and south are generally of the Alligator, Sharkey, and Libuse soil series. These soils are level, poorly drained and very poorly drained soils that have a clayey surface layer and clayey subsoil. Areas to the west of the lake are generally of the Una, Zenoria, or Guyton soil series (Soil Conservation Service 1980). These soils are level and nearly level, poorly drained soils that have a loamy surface layer and a clayey and loamy or loamy subsoil. These soils are subject to flooding.

Much of the area to the east of the lake is part of the Catahoula National Wildlife Refuge. Most of the area to the south of the lake is part of the Dewey Wills Wildlife Management Area. Most of the area to the north and west of the lake are privately owned and used for forestry. The climate of the catchment is very similar to that of Catahoula Lake.

16. Hydrological values:

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

“Prior to construction of the Ouachita-Black Rivers Navigation Project [in the early 1970’s], Arkansas and Louisiana, flows from Catahoula Lake entered the Ouachita River via Little River immediately upstream of Jonesville, Louisiana. With the construction of the first lock and dam downstream of Jonesville, measures were included in the project to mitigate impacts on Catahoula Lake. A control structure was built on Little River to maintain the navigation pool and prevent the lake from being inundated. The Catahoula Lake Diversion Canal was constructed to provide a new outlet from the lake to the Black River downstream of the lock. A control structure was built at the upstream end of the diversion canal and a 12-foot-wide channel extension with a bottom grade elevation of 22 feet, National Geodetic Vertical Datum, was dredged into Catahoula Lake to allow manipulation of lake levels for fish and wildlife management purposes. Completion of the navigation project reduced and reversed flows in Little River at French Fork, silting in part of the channel (Section 1135 Preliminary Restoration Plan 1997).

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.

O, P, Ts, L

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 lake bed is characterized by uniform plant types occurring in concentric zones related to lake bed contour. The periphery of the lake supports woody plants, primarily water elm (*Planera aquatica*), swamp privet (*Foresteria acuminata*), and irregular occurrences of bald cypress (*Taxodium distichum*). The next zone is dominated by chufa (*Cyperus exculentus*) with the next lower zone being predominately sprangle top (*Leptochloa filiformis*) and teal grass (*Eragrostis hypnoides*). Dense stands of millet (*Echinochloa sp.*) occur around the marshy area of the lake and the permanently flooded zone supports bull tongue (*Sagittaria sp.*), mud plantain (*Heteranthera limosa*), and water hyssop (*Bacopa monnieri*). Catahoula Lake affords habitat for hundreds of thousands of ducks, geese, shorebirds, and wading birds as well as aquatic habitat for both sport and commercial fishes.

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.*

In LaSalle, Rapides, and Grant parishes, there are few natural stands of chufa or millet, none of which approach the size of those found on Catahoula Lake. (See annex species list)

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.*

Catahoula Lake provides wintering habitat for up to 200,000 northern pintail ducks, a species of special concern. The lake is also one of the most important wintering areas for canvasbacks, another species of special concern, in North America. A peak population estimate of 123,000 was recorded in 2003. (See annex species list)

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.

Catahoula Lake has received a large amount of waterfowl hunting pressure. “Indians occupying areas surrounding the lake hunted waterfowl on the lake. Also, there exists little doubt that from the coming of the first white man to the present, waterfowl have been hunted extensively on Catahoula Lake. “Old Timers” around the turn of the century reported that huge flocks of ducks and geese were abundant on the lake during the winter months (Wills 1965).” Today, Catahoula Lake is still an important area for waterfowl hunters. Hunter success the opening weekend of the second split of 2003 was 2.33 ducks/hunter. 76 hunter bags were checked. Ring-necked (48%), GWT (31%), and mallard (11%) were most common in bag. Hunter success and hunter bags checked increased compared to the previous year at this time. Furthermore, “Catahoula Lake provides excellent temporary habitat for sport and commercial fish by increasing available nutrients, establishing large nursery areas, and by initiating a favorable food chain...Annually, sport fisherman from all parts of the state take advantage of the high quality fishing found near the channel entrances and exits of the lake and connecting bayous (Wills 1965).”

22. Land tenure/ownership:

(a) within the Ramsar site: The entire lake bed is owned by State of Louisiana with state ownership being established at elevation 36’ msl.

(b) in the surrounding area: Much of the area to the east of the lake is part of the Catahoula National Wildlife Refuge. Most of the area to the south of the lake is part of the Dewey Wills Wildlife Management Area. Most of the area to the north and west of the lake are privately owned and used for forestry.

23. Current land (including water) use:

(a) within the Ramsar site: In addition to hunting and fishing, visitors to Catahoula Lake also participate in sight seeing and birding. There are also approximately 30 active oil and/or gas wells on the lake bed.

(b) in the surroundings/catchment: Hunting and fishing are common in the surrounding catchment. In the Dewey Wills Wildlife Management Area, picking mayhaw berries is common. Camping, hiking, and horseback riding are common. There are several oil and/or gas wells in the catchment. Timber management is practiced on both private and public lands.

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

(a) within the Ramsar site: In the past, lead shot deposition was a problem on the lake bed in areas where hunters frequented. The lead shot ban for waterfowl hunting in 1987 has significantly reduced this problem. Currently the Louisiana State Lands Office is disputing claims from private land owners that contend they own part of the lake bed at high elevations. Occasionally there have been proposals by some groups to permanently impound the lake and commercially develop the shore. Although there has not been a spill in the past several years, the oil and gas wells pose a possible threat to the wetland.

“Completion of the [Ouachita-Black Rivers] navigation project reduced and reversed flows in Little River at French Fork, silting in the natural channel. Following construction of the Ouachita-Black Rivers navigation project and initiation of operation of the Catahoula Lake Diversion Canal in 1972, woody plant growth invasion of Catahoula Lake accelerated dramatically. This woody vegetation has begun to spread across the mudflats, where it forms a thick canopy of interlocking branches that minimize the penetration of sunlight. This prevents the growth of key waterfowl food plants and has resulted in the loss of thousands of acres of significant habitat for wading birds, shorebirds and waterfowl. The reduced channel capacity had caused uneven drawdown of the lake levels upstream of the area, adversely impacting management of the lake for waterfowl. The alteration of the natural hydrology and the associated increase in sedimentation continues to impact lake level management creating growing conditions that are advantageous to the spread of undesirable woody vegetation (Section 1135 Preliminary Restoration Plan 1997).”

(b) in the surrounding area: Factors in the surrounding area that affect the site's ecological character are those that affect sedimentation rates such as dredging and timber harvesting.

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.

- Oil companies operating on and near the lake upgrade their facilities, install pollution control devices, and upgrade spill contingency plans.
- Efforts to stem the woody plant growth invasion of the lake have been made over the years. However, these efforts have been slow because of rapid expansion of the problem acreages, lack of acceptable/effective herbicide treatment and the lack of funding for mechanical eradication (Section 1135 Preliminary Restoration Plan 1997).
- In conjunction with the Louisiana Department of Wildlife and Fisheries, the U.S. Army Corps of Engineers dredged approximately 3 miles of the historic French Fork channel. The dredging started at an existing channel at the northern edge of the State Migratory Bird Refuge and extended to French Fork, a distance of about 3 miles. As much as 50,000 cubic yards of material were dredged.

- Sanctuary for waterfowl is provided by the nearby 2,430 ha. (6,000 ac.) Catahoula National Wildlife Refuge and by a 410 ha. (1,010 ac.) state refuge or rest area near the center of the lake.
- The entire lake bed is owned by State of Louisiana with state ownership being established at elevation 36' msl. Management authority of this wetland up to elevation 34' msl is vested with the Louisiana Department of Wildlife and Fisheries. The lake has been managed as a "wetland" under a tri-party management plan since the 1970's with the cooperators including the U.S. Army Corps of Engineers, U.S. Fish and Wildlife Service, and the Louisiana Department of Wildlife and Fisheries.

26. Conservation measures proposed but not yet implemented:

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

There are not any management plans proposed but not yet implemented.

27. Current scientific research and facilities:

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

No research facilities are available on Catahoula Lake; however, limited facilities are available at the Catahoula Lake National Wildlife Refuge and at the Dewey Wills Wildlife Management Area, both immediately adjacent to the lake.

In conjunction with the Louisiana Department of Wildlife and Fisheries, the U.S. Geological Survey is conducting research to determine whether changes in lake-bottom vegetation may be related to drawdown management.

In conjunction with the Louisiana Department of Wildlife and Fisheries, Ducks Unlimited is scheduled to map the lake-bottom vegetation zones using satellite data and ground truthing.

28. Current conservation education:

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

The Louisiana Department of Wildlife and Fisheries educates teachers and school children about Catahoula Lake through classroom presentations and workshops. Catahoula National Wildlife Refuge has an observation tower, walking trail, information kiosk, and handicap walking trail to allow visitors to enjoy and become educated about Catahoula Lake. Furthermore, refuge personnel conduct presentations for the public.

29. Current recreation and tourism:

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

Depending on the time of year, Catahoula Lake may be used for hunting, fishing, hiking, sight seeing, and birding. Catahoula National Wildlife Refuge had 11,000 visitors during 2003. Several thousand more people visited Catahoula Lake to hunt and fish.

30. Jurisdiction:

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

Louisiana Department of Wildlife and Fisheries

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.

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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.

Commission for Environmental Cooperation. Ecological Regions of North America: Toward a Common Perspective. Canada. Communications and Public Outreach Department of the CEC Secretariat. 1997.

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