LOUISIANA DEPARTMENT OF WILDLIFE & FISHERIES

OFFICE OF WILDLIFE
Coastal and Non-Game Resources

OFFICE OF FISHERIES
Inland Fisheries

2018 AQUATIC VEGETATION CONTROL PLAN

WHITE LAKE WETLANDS CONSERVATION AREA

The White Lake Wetlands Conservation Area (WLWCA) is owned by the State of Louisiana and managed by the Louisiana Department of Wildlife and Fisheries, Coastal and Non-Game Resources Division. The WLWCA is 71,905 acres located along the western boundary of Vermilion Parish. It is bounded on the south by White Lake. The northern boundary is 7.4 miles south of Gueydan at the south end of Hwy. 91, and the Louisiana Meridian is the eastern boundary. The WLWCA property is located within the lower Mermentau River Basin, and more specifically, the Lakes Sub-basin. The Gulf Intracoastal Waterway (GIWW) runs through the property and is generally turbid year round due to agricultural run-off. The Florence Canal also runs through the property and is fed by adjacent drainage and the GIWW. These waterways have an average salinity of 0.1-0.5 ppt. Droughts and storm surges periodically introduce salinities around 1-5ppt, but these events are usually short-lived and infrequent.

LDWF District 5 crews conduct herbicide applications in the Mermentau Basin to facilitate boating access, but on WLWCA, herbicide applications by District 5 personnel have not been conducted south of the Gulf Intercostal Waterway (GIWW).

Waterbody Information

Waterbody Type:

Freshwater marsh consisting of 6 management units (Figure 1)

- 2 units are impounded with active water control management
    - Units 2 and 4 can be drawn down and also flooded
        - Unit 2 has (2) 48" pumps that pump water out and (1) 30" screw-gate pipe that gravity flows water into the impoundment.
        - Unit 4 has (1) 36" pump that can pump water into and out of the impoundment. The pipes associated with this pump can allow passive flow into and out of the impoundment, but this is based on the water level in the Mermentau Basin.
- 1 unit is impounded with active and passive water control management
    - Unit 5 has a passive overflow pipe to drain excess water and has a pump to add water to the impoundment.
        - The 16" pump can only add water to the impoundment. There is currently no way to actively drain the impoundment.
- 1 unit is impounded with passive water control management
    - Unit 1 can be drawn down when basin water levels are average or below average, but must rely on rainfall to fill
        - There are two sets of 8' variable crest stop log weirs and (1) 65" guillotine gate that allow water to flow out of the impoundment. Water can be drawn down until it equalizes with the Mermentau Basin water level.
        - Water cannot be actively added to this unit.
- 1 unit is not impounded but does have passive water control management
    - Unit 3 can be somewhat drawn down when basin water levels are average or below average
- 1 unit is not impounded and has no management ability due to its connectivity with private marsh and lakes
    - Unit 6 is unmanaged and connected to various lakes (White Lake, Lake Le Bleu,

Turtle Lake, and Blackfish Lake)

Parish/Location:

Vermilion Parish, LA

Size (surface acres):

Freshwater Marsh: Approx. 52,000 acres
Agricultural Leased Property: 19,000 acres
Canals: Approx. 800 acres

Watershed:

Lies within the Lakes Sub-basin of the Mermentau River Basin.
Watershed Ratio: Unknown

Impoundment:

Units 1, 2, 4, and 5 are fully impounded

Water Control Structures:

The Mermentau Basin has five water control structures that affect WLWCA:

- Calcasieu Lock
- Catfish Point Control Structure
- Freshwater Bayou Lock
- Schooner Bayou Control Structure
- Leland Bowman Lock

Operation Procedures:
All are U.S. Army Corps of Engineers owned and operated

There are numerous water control structures throughout the WLWCA marsh (Figures 2-7).

Ownership:

State of Louisiana owns the WLWCA property. LDWF CNR division manages the habitat, fish, and wildlife resources.

Border waters or waters that pass through the property:

GIWW, White Lake, Florence Canal, Warren Canal/Ditch, Robins Canal, Blackfish Lake, Lake Le Bleu, Turtle Lake, and Clear Lake

Past Control Measures

Biological:

Giant salvinia weevils (*Cyrtobagous salviniae*) were stocked in the canals in Unit 2 in March, April and June of 2013. These weevils were released into approximately 20 acres of canal that were boomed off from the remaining canals. The weevils were allowed to thrive on giant salvinia in the boomed off area, and population estimates were monitored. Staff continually inspected WLWCA marsh for giant salvinia and created maps to note new locations. Throughout the spring and summer of 2014, weevils were distributed to those areas on WLWCA. In addition, WLWCA staff provided numerous batches of weevils to nearby landowners and leaseholders to improve the distribution of weevils in the lower Mermentau Basin. Since 2015, WLWCA staff monitored weevil populations and distributed weevils as necessary.

Chemical:

Herbicide applications began in the fall of 2012 and have continued at various levels through 2017. Herbicides and rates of application followed the LDWF Aquatic Herbicide Application Procedures.

In 2017, sporadic clumps of Giant Salvinia in Units 1, 2, 3, 4, and 5 were treated with glyphosate (0.75 gal/acre) and diquat (0.25 gal/acre) with Aqua King Plus (0.25 gal/acre) and Air Cover surfactants (12oz/acre). Herbicide was applied monthly to any areas of giant salvinia that did not have abundant weevils present. Approximately 40 acres of water hyacinth and Cuban bulrush were treated with glyphosate (0.75 gal/acre) and 2,4-D (0.5 gal/acre) in Units 1 and 2.

Physical:

Unit 2 is drawn down annually in the late spring to remove water from the marsh, ponds, and pools. Water remains in the canals and ditches throughout the year.

Nuisance Aquatic Vegetation Status

Fall 2017 Biomass Estimates:

Giant Salvinia (with introduced weevils from previous years) –
Unit 1: 50 acres
Unit 2: 100 acres
Unit 3: 100 acres
Unit 4: 10 acres
Unit 5: 5 acres

Water Hyacinth/ Cuban Bulrush –
Unit 1: 50 acres
Unit 2: 50 acres

Common Salvinia –
Unit 1: 10 acres

Filamentous Algae –
Unit 5: 30 acres

Fanwort & Bladderwort mixed –
Unit 1 (duck blind ponds and trails): 50 acres

Limitations:

- Impoundments do not allow easy access for boats with spray rigs
- Full drawdowns are only possible on 2 units
- With heavy rainfall, large areas of marsh become open water which could allow invasive aquatic vegetation to take over, in addition to the problem of becoming a moving target

Recommendations for 2018:

Biological Control

The highest potential for sustained long-term control of giant salvinia is in the establishment of the giant salvinia weevil. Giant salvinia weevils have not demonstrated the ability to rapidly increase range distribution. Therefore, transfers of weevil-infested material on WLWCA will continue. In addition, weevils may be provided to adjacent landowners if WLWCA weevil populations are sufficient for stocking other areas. Prolonged freezing temperatures in early 2018 may have decreased the abundance of giant salvinia weevils on WLWCA. Weevil counts throughout the property will be necessary to determine the need for reintroducing weevils.

Chemical Control

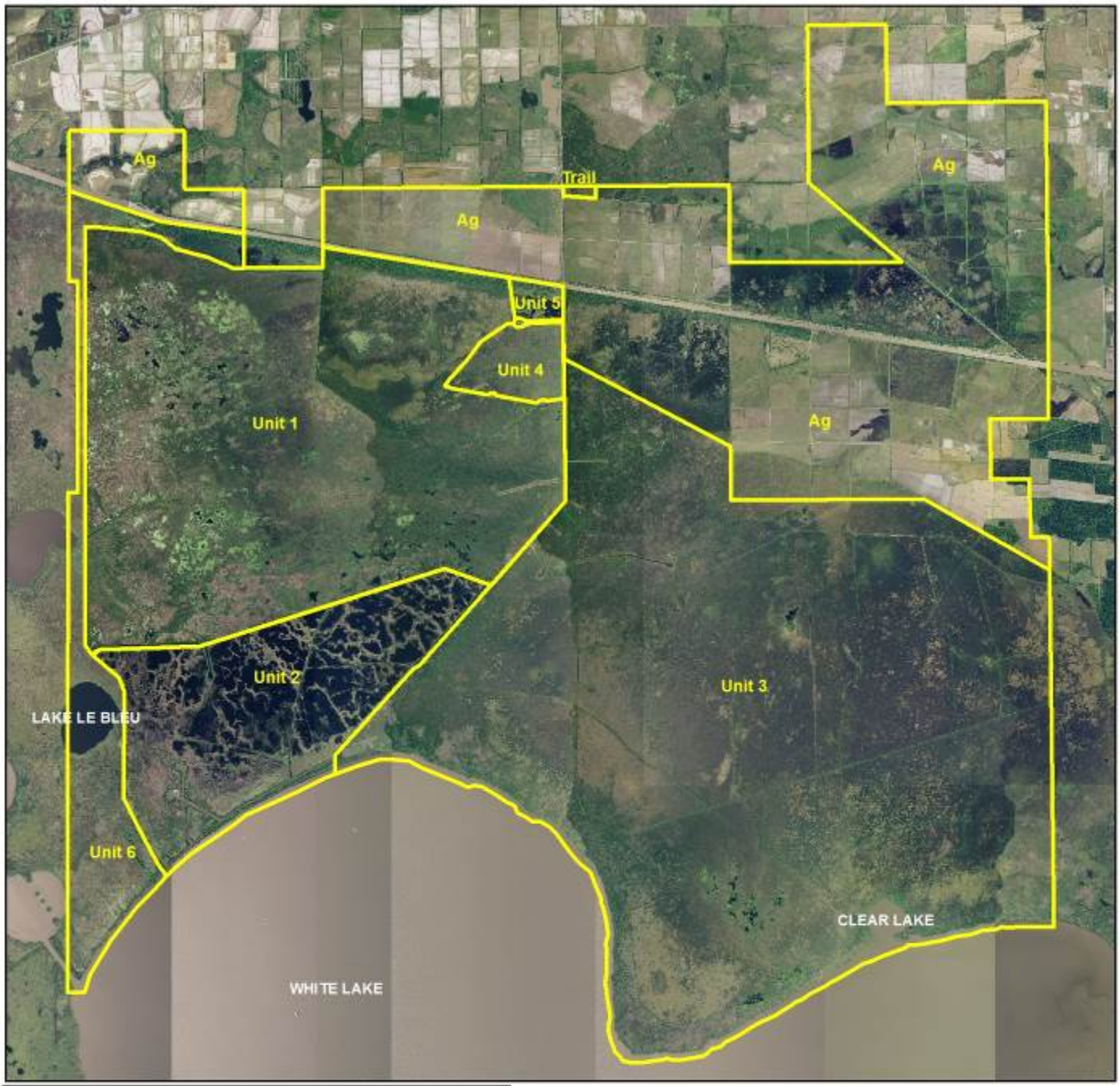
Herbicide applications will be a significant component of efforts to control the spread of giant salvinia, water hyacinth, and Cuban bulrush, and to maintain boating access in WLWCA. With an expected increase in control provided by biological control agents, the need for herbicides to control giant salvinia is expected to diminish over time.

In the summer of 2018, WLWCA staff will begin treating access areas infested with fanwort in Unit 1 with fluridone (Sonar Q) at a rate of 3 lbs/acre to generate a concentration of approximately 45 ppb. Additional applications will be conducted as necessary. WLWCA staff will also treat the water hyacinth-infested areas with 2,4-D (0.5 gal/acre) and a non-ionic surfactant (1 pint/acre). Glyphosate (0.75 gal/acre) may be added to the mixture if other nuisance vegetation is found mixed in with the water hyacinth. Additional applications will be conducted as necessary. These herbicide applications will occur in canals, trails and ponds that are accessible by small boats with outboard motors or surface drives. WLWCA staff will inspect algae accumulations in Unit 5 and treat as necessary with Cutrine-Plus (chelated copper) at a rate of 1.8 gal/acre-ft. In addition, WLWCA staff will treat salvinia-infested areas with mixtures of herbicide recommended by the LDWF Aquatic Plant Control Section.

Physical Control

Drawdown Unit 2 in the late spring to reduce giant salvinia in the marsh, ponds, and pools. This is a subsided impoundment, so the drawdown is accomplished with the use of (2) 48" pumps. The drawdown will begin in mid to late May and be completed in early June. The drawdown rate will be approximately ½ inch of water daily. The unit will be drawn down until water in the canal drops below marsh elevation. The majority of the impoundment will be dry, but some shallow standing water will remain in the deeper ponds. The standing water typically dries out over the summer as evaporation increases. Heavy tropical rainfall in the summer reduces drawdown capability because a significant amount of time is required to actively remove the accumulated water.

Figure 1. White Lake Wetlands Conservation Area Map



Ag - Agricultural Lands 18,656 Acres
(Uses - rice farming, soybean farming, crawfish farming, alligator trapping, cattle grazing, waterfowl hunting, rice field lottery hunts)

Unit 1 - Hunting Marsh - Fresh Marsh Impoundment 15,944 Acres
(Uses - marsh lottery hunts, group hunts, alligator trapping)

Unit 2 - Refuge - Fresh Marsh Impoundment 4,805 Acres
(Uses - waterfowl refuge, alligator trapping)

Unit 3 - Fresh Marsh Unimpounded 28,638 Acres
(Uses - alligator trapping, waterfowl hunting)

Unit 4 - 700 Acre Fresh Marsh Impoundment
(Uses - waterfowl & wading bird habitat)

Unit 5 - Bass Pond - Fresh Water Pond & Fresh Marsh Impoundment 157 Acres
(Uses - largemouth bass & crappie fishing)

Unit 6 - Fresh Marsh Unimpounded 3,005 Acres
(Uses - alligator trapping, refuge)

Trail - WLWCA Birding & Nature Trail

Date: 17 Oct'14
Source: USDA 2010 Imagery, LDWF

N

0 1 2 4 Miles

Figure 2. White Lake Wetlands Conservation Area, Unit 1.

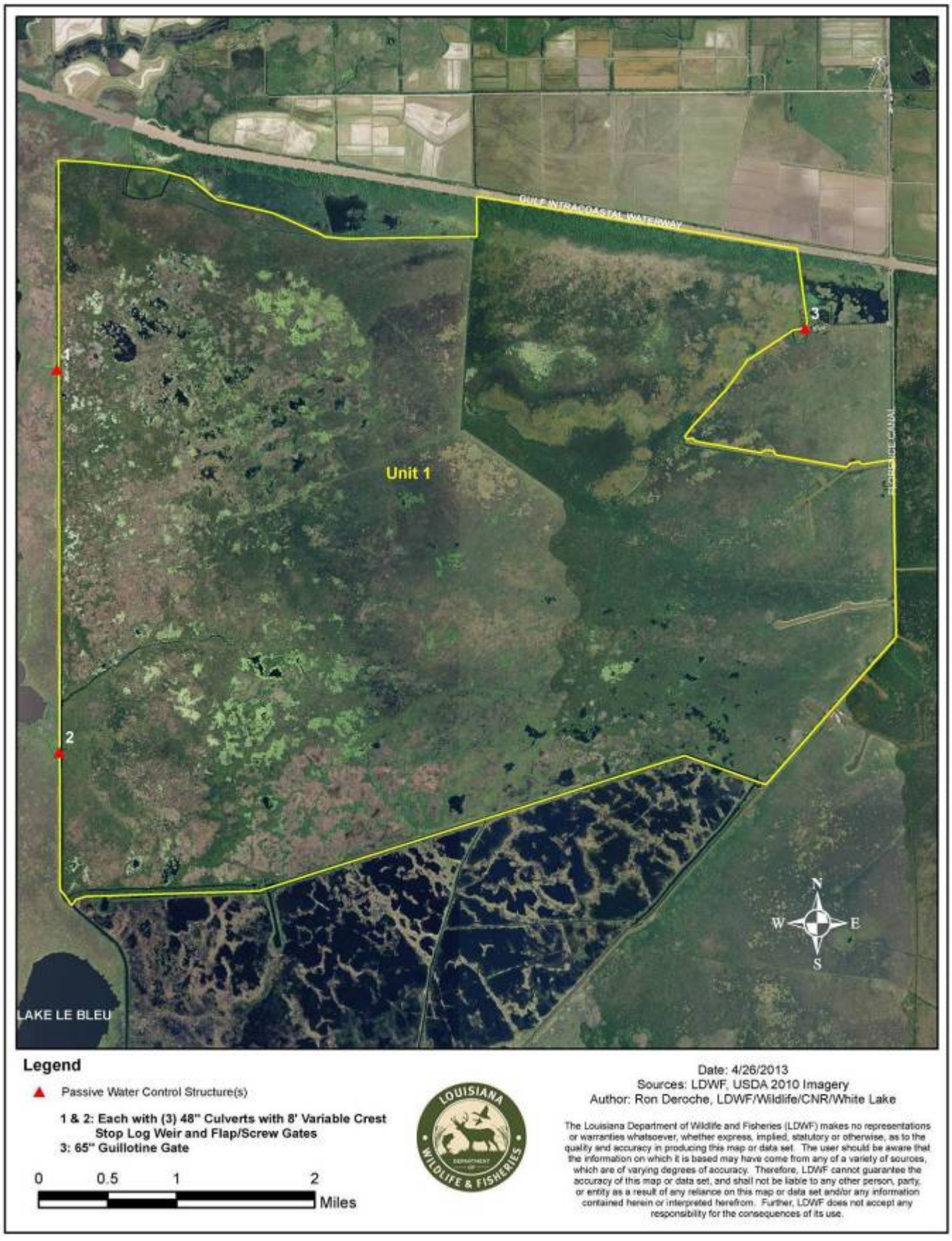
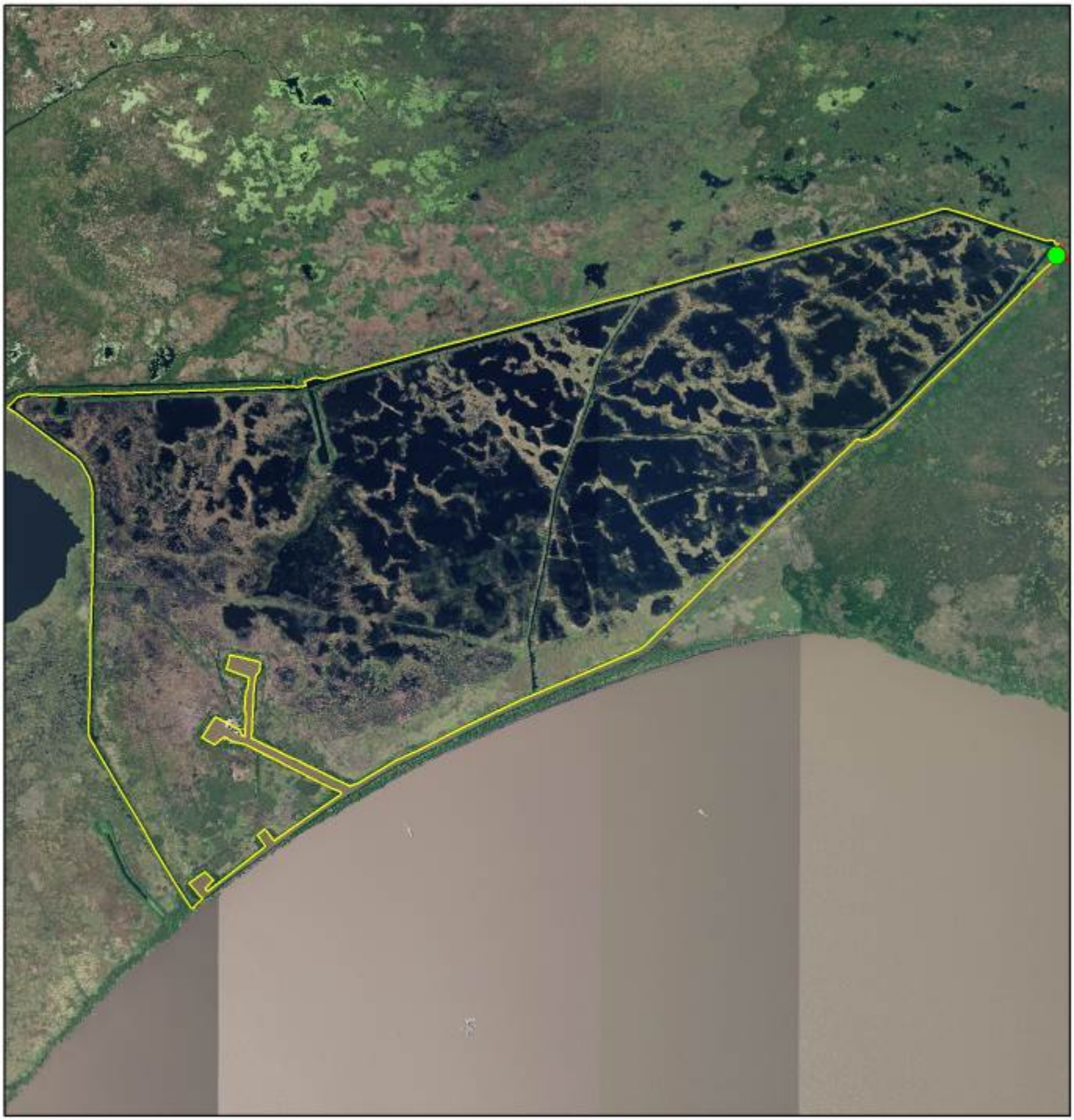


Figure 3. White Lake Wetlands Conservation Area, Unit 2.



Legend

- Active Water Control Structure(s)
- Passive Water Control Structure(s)

Active WC Structure(s):
(2) 48" Lo-Lift Pump-Off Units
(1) 36" Lo-Lift Pump-Off Units
Passive WC Structure(s):
(1) 48" Gravity Flow Intake Pipe with Screw Gate

N
W E
S

0 0.5 1 2 Miles

Date: 17 Oct'14
Source: USDA 2010 Imagery, LDWF

Figure 4. White Lake Wetlands Conservation Area, Unit 3.

Figure 5. White Lake Wetlands Conservation Area, Unit 4.

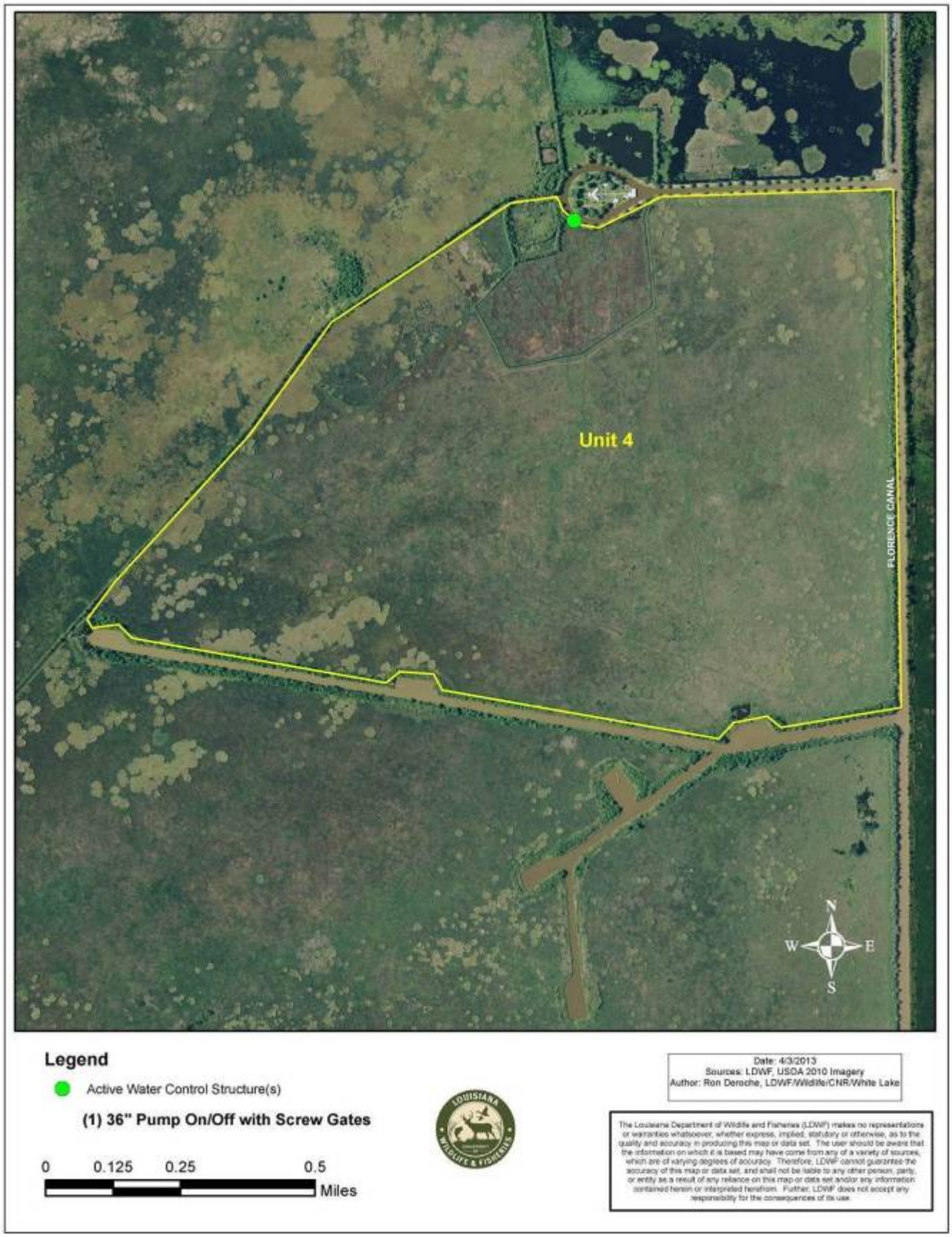


Figure 6. White Lake Wetlands Conservation Area, Unit 5.

Figure 7. White Lake Wetlands Conservation Area, Unit 6.