APPENDIX K

WETLAND HABITAT QUALITY ASSESSMENT DATA SHEETS FOR THE PROPOSED LIBERTY FUELS MINE
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WETLAND HABITAT QUALITY ASSESSMENT
DATA SHEETS

Prepared for:

NORTH AMERICAN COAL CORPORATION
P.O. BOX 399
JOURDANTON, TEXAS 78026

Prepared by:

BARRY A. VITTOR & ASSOCIATES, INC.
8060 COTTAGE HILL ROAD
MOBILE, ALABAMA 36695

October, 2009
Barry A. Vittor & Associates, Inc. conducted wetland surveys of the study area between the months of June and October, 2008. Vittor & Associates biologists documented the quality of wetland habitat at 53 individual locations within the study area. Due to the limited access to private lands during wetland surveys, the location of WRAP points were arbitrarily selected in the field and do not represent a true random sample.

The quality of each wetland habitat was evaluated using the Wetland Rapid Assessment Procedure (WRAP). The WRAP is a rating index that was developed by the South Florida Water Management District to assist in the regulatory evaluation of mitigation sites. In 2007, the Mobile, Alabama District Corps of Engineers (COE) began using the WRAP to evaluate the habitat quality of jurisdictional wetlands as defined by the 1987 Corps of Engineers Wetland Delineation Manual. The objectives of the WRAP are: 1. to establish an accurate, consistent, and timely regulatory tool; 2. to track trends over time (land use vs. wetland impacts); and 3. to offer guidance for environmental site plan development.

When determining wetland quality using the WRAP methodology the following 6 variables are assessed: Wildlife Utilization, Wetland Overstory/Shrub Canopy, Wetland Vegetative Ground Cover, Adjacent Upland Support/Wetland Buffer, Field Indicators of Wetland Hydrology, and Water Quality Input and Treatment Systems. For each wetland evaluated a score between 0 and 3 is assigned to each of the 6 parameters. A score of 3 indicates the evaluated parameter meets all the criteria required for a system to be classified as 100% functional, and a score of 0 represents no functionality. The evaluator has the option to score each parameter in half (0.5) increments; half increments are utilized on the point scale from 0.5 through 2.5. This allows the evaluator to assess the value of the system more accurately. After assigning a value to each of the 6 parameters the sum of all scores is then divided by 18 (the maximum combined score) to obtain a final rating, which is expressed numerically by a number between 0 and 1. A final rating score of 1 indicates that a wetland is functioning at 100% of its capacity; whereas, a final score of 0 indicates a wetland has no functional value. The Mobile District COE uses the final WRAP score to determine overall quality of a wetland. For the purpose of assessing ratios for mitigation banking and mitigating wetland impacts the Mobile District COE uses the following range of WRAP scores to describe overall quality of a wetland: high quality (0.75-1), medium quality (0.50-0.74), and low quality (0-0.49). Calculations of wetland quality were derived in the office after fieldwork was completed.

BVA categorized each of the 53 evaluated wetlands as one of the following vegetation/land use types: planted pine (PP), hardwood forest (H), pine-hardwood forest (PH), hardwood-pine forest (HP), bottomland forest (BF), shrub land (S), and fields (F). Wetlands that were classified as vegetation types PP, H, PH, HP, and BF are forested wetlands. Wetlands that possess vegetative cover dominated by herbaceous plant species were classified as fields (pastures, hay fields, “deer plots”, or any area cleared of forest cover and maintained in an herbaceous state), and scrub-shrub wetlands were designated as shrub land under the vegetation/land use types. The most common forested wetlands evaluated by BVA were Planted Pine and Bottomland Forest. Wetlands were frequently documented in fields during the survey due to the common occurrence of maintained pastureland in floodplains. Only two shrub land wetlands were evaluated during the WRAP surveys. Shrub land wetlands are uncommon inside the study area.

Wrap locations are depicted in the attached study area wetland map, and data sheets are attached.
Legend

- **Blue**: Study Area (~31,260 acres)
- **Red**: Power Plant Site (~1,650 acres)
- **Green**: Estimated Wetlands (~5,994 acres)
- **Dark Blue**: Creeks, Streams, Ponds, Lakes, and other Water Bodies.

# Locations of WRAP datasheets (53)
Wetland Rapid Assessment Procedure

[Check one]

☐ Existing Conditions  ☐ Proposed Conditions  (WRAP)

Application Number: [Redacted]  
Project Name: North American Coal  
Date: 06/23/08  
Evaluator: Matt Stowe  
Wetland Type: Bottomland Forest

Land Use:  
FLIUCS Code:  
Description:  

Wildlife Utilization (WU)  
2

Wetland Canopy (O/S)  
2.5

Wetland Ground Cover (GC)  
1.5

Habitat Support/Buffer

<table>
<thead>
<tr>
<th>Buffer type</th>
<th>(Score) X</th>
<th>(% of area)</th>
<th>Sub Totals</th>
</tr>
</thead>
<tbody>
<tr>
<td>&gt;300' average, consisting of &gt;75% nuisance species</td>
<td>1</td>
<td>100</td>
<td>1</td>
</tr>
<tr>
<td>TOTAL</td>
<td></td>
<td></td>
<td>1</td>
</tr>
</tbody>
</table>

Field Hydrology (HYD)

<table>
<thead>
<tr>
<th>Field Hydrology (HYD)</th>
<th>(Score) X</th>
<th>(% of area)</th>
<th>Sub Totals</th>
</tr>
</thead>
<tbody>
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<td>2</td>
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<table>
<thead>
<tr>
<th>Pretreatment Category (PT)</th>
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<tbody>
<tr>
<td>Undeveloped</td>
</tr>
<tr>
<td>Pine Plantation</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Pretreatment Category (PT)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Undeveloped</td>
</tr>
<tr>
<td>Pine Plantation</td>
</tr>
</tbody>
</table>

WRAP Score: 0.58

Wildlife Utilization (WU) 2

Evidence of wildlife utilization by large mammals. Adequate upland food sources and habitat.

Wetland Canopy (O/S) 2.5

* Evidence of natural recruitment.  
* Healthy canopy  
* No exotic species present  
* Less than 10% invasive species composition.

Wetland Ground Cover (GC) 1.5

<20% vegetated ground cover with <10% exotic species. Siltation occurring in the wetland. Canopy appeared healthy.

Habitat Support/Buffer 1.0

* >300' Buffer with > 75% nuisance species  
* Connected to offsite corridor

Field Hydrology (HYD) 2

Hydroperiod adequate enough to support a viable wetland. Plants appear to be healthy. Some areas exhibited evidence of siltation.

WQ Input & Treatment (WQ) 1.5

(LU) - Pine Plantation.  
(PT) - Undeveloped Pine Plantation.
**Wetland Rapid Assessment Procedure (WRAP)**

**Application Number**: [Blank]

**Project Name**: North American Coal

**Date**: 06/24/08

**Evaluator**: Matt Stowe

**Wetland Type**: Hardwood-Pine Forest

**Land Use**
- Forest Management

**FLUCS Code**
- Description: [Blank]

**Wildlife Utilization (WU)**

<table>
<thead>
<tr>
<th>Buffer Type</th>
<th>Habitat Support/Buffer</th>
<th>% of Area</th>
<th>Sub Totals</th>
</tr>
</thead>
<tbody>
<tr>
<td>&gt;300' average, consisting of &gt;75% nuisance species</td>
<td>1.0</td>
<td>100</td>
<td>1.0</td>
</tr>
</tbody>
</table>

**Wetland Canopy (O/S)**

- Less than 25% undesirable species.
- Canopy provides habitat.
- Soil subsidence has adversely impacted the canopy species

**Wetland Ground Cover (GC)**

<25% undesirable species composition, no recorded exotic species. Siltation occurring around edges of wetlands.

**Habitat Support/Buffer**

>300' but dominated by >75% nuisance species (*Pinus taeda*). Connected to offsite corridor.

**Field Hydrology (HYD)**

High levels of soil subsidence occur at the wetland boundary. Hydroperiod adequate to support viable wetland.

**WQ Input & Treatment (WQ)**

LU - Monoculture Pine Plantation – 100%
PT - Undeveloped Land/Planted Pine – 100%

---

**WRAP Score**: 0.33

**Land Use Category (LU)**

<table>
<thead>
<tr>
<th>Land Use Category</th>
<th>(Score) X</th>
<th>% of Area</th>
<th>Sub Totals</th>
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</thead>
<tbody>
<tr>
<td>Pine Plantation</td>
<td>1.5</td>
<td>100%</td>
<td>1.5</td>
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</tbody>
</table>

**Pretreatment Category (PT)**

<table>
<thead>
<tr>
<th>Pretreatment Category</th>
<th>(Score) X</th>
<th>% of Area</th>
<th>Sub Totals</th>
</tr>
</thead>
<tbody>
<tr>
<td>Undeveloped Pine Plantation</td>
<td>1.5</td>
<td>100%</td>
<td>1.5</td>
</tr>
</tbody>
</table>

**TOTAL**: 1.5

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Minimal evidence of utilization by wildlife. Wetland newly planted with *Pinus taeda* (lobolly). Minimal habitat or food source.
### Wetland Rapid Assessment Procedure

<table>
<thead>
<tr>
<th>Application Number</th>
<th>Project Name</th>
<th>Date</th>
<th>Evaluator</th>
<th>Wetland Type</th>
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<tbody>
<tr>
<td></td>
<td>North American Coal</td>
<td>06/26/08</td>
<td>Matt Stowe</td>
<td>Planted Pine</td>
</tr>
</tbody>
</table>

#### Land Use

- **Forest Management**

#### Wildlife Utilization (WU)

<table>
<thead>
<tr>
<th>Buffer type</th>
<th>(Score)</th>
<th>% of area</th>
<th>Sub Totals</th>
</tr>
</thead>
<tbody>
<tr>
<td>&gt;300', consisting of &gt;75% nuisance species</td>
<td>1.0</td>
<td>100</td>
<td>1.0</td>
</tr>
<tr>
<td>TOTAL</td>
<td></td>
<td></td>
<td>1.0</td>
</tr>
</tbody>
</table>

#### Wetland Canopy (O/S)

| Wetland Canopy (O/S) | 1.5 |

#### Wetland Ground Cover (GC)

| Wetland Ground Cover (GC) | 1.0 |

#### Habitat Support/Buffer

<table>
<thead>
<tr>
<th>Habitat Support/Buffer</th>
<th>(Score) X</th>
<th>% of area</th>
<th>Sub Totals</th>
</tr>
</thead>
<tbody>
<tr>
<td>&gt;300', &amp; &gt;75% nuisance species</td>
<td>1.0</td>
<td>100</td>
<td>1.0</td>
</tr>
<tr>
<td>TOTAL</td>
<td></td>
<td></td>
<td>1.0</td>
</tr>
</tbody>
</table>

#### Field Hydrology (HYD)

| Field Hydrology (HYD) | 2.0 |

#### WQ Input & Treatment (WQ)

| WQ Input & Treatment (WQ) | 1.9 |

### WRAP Score

- **Wildlife Utilization (WU)** 1.5
- **Wetland Canopy (O/S)** 1.5
- **Wetland Ground Cover (GC)** 1.0
- **Habitat Support/Buffer** 1.0
- **Field Hydrology (HYD)** 2.0
- **WQ Input & Treatment (WQ)** 1.9

**WRAP Score** 0.49

**Tracks and visual observation provide evidence of utilization of the wetland and adjacent uplands by white-tailed deer and songbirds. Frequent human disturbance. Limited adjacent upland habitat.**

**Wetland Canopy (O/S) 1.5**

- <25% undesirable cover
- no exotics present
- minimal evidence of recruitment of native species

**Wetland Ground Cover (GC) 1.0**

~50% undesirable cover. Cover slightly impacted by humans. Frequent human activity (recreation).

**Habitat Support/Buffer 1.0**

>300' buffer; however, buffer consists of >75% nuisance species (*Pinus taeda*). Connected to offsite wildlife corridor.

**Field Hydrology (HYD) 2.0**

Wetland hydrology is adequate, but ditches are present and adversely affect hydrology. Little evidence of soil subsidence.

**WQ Input & Treatment (WQ) 1.9**

(LU) 60% Monocultured Pine Plantation 40% Natural undeveloped
(PT) 40% Natural Undeveloped 60% Planted Pine
**WETLAND RAPID ASSESSMENT PROCEDURE**

**Application Number**

**Project Name**
North American Coal

**Date**
7/9/2008

**Evaluator**
D.K.

**Wetland Type**
Planted Pine

**Land Use**

**Description**

**Wildlife Utilization (WU)**
2

**Wetland Canopy (O/S)**
1

**Wetland Acreage**

**Wetland Ground Cover**
1

**Habitat Support Buffer**

**Buffer Type**

**Score**

**X (%) of area**

**Sub Totals**

1-30' buffer 1 100 1

2

1

**Field Hydrology (HYD)**

2

1.75

**WQ Input & Treatment**

* The value of WQ is obtained by adding the TOTAL scores of Land use Category and Pretreatment category then dividing by 2

**Land use Category (LU)**

**LU Category**

**Score**

**X (%) of area**

**Sub Totals**

Planted Pine 1.5 75 1.125

Nat Undevelop 2.5 25 0.625

**PT Category**

**Score**

**X (%) of area**

**Sub Totals**

Planted Pine 1.5 75 1.125

Nat Undevelop 2.5 25 0.625

1.75

**PT Total**

**WRAP Score**

0.49

**Field Notes:**

**Wildlife Utilization (WU)**
Utilized by mammals, birds, macroinvertebrates, amphibians and reptiles. Adequate adjacent upland food sources. Minimal human intervention. Adequate cover and habitat.

**Wetland Canopy (O/S)**
~50% undesirable species.

**Wetland Ground Cover**
~50% undesirable species. Chinese privet present in the understory, cover significantly impacted by humans.

**Habitat Support/Buffer**
Upland buffer has been recently clear-cut and provides little food or cover. Wetland buffer is connected to off-site corridors.

**Field Hydrology (HYD)**

**WQ Input & Treatment**
Surrounding land use can best be described as a mix between natural undeveloped land and silvicultural practices. Pre-treatment of water is a mix between natural undeveloped lands and run-off from pine plantation.
WETLAND RAPID ASSESSMENT PROCEDURE

Application Number

Project Name
North American Coal

Date
7/10/2008

Evaluator
D.K.

Wetland Type
Bottomland Forest

Land Use

Wildlife Utilization (WU)

Description

Wetland Acreage

Wetland Canopy (O/S)

2

Wetland Ground Cover

Habitat Support Buffer

Buffer Type (Score) X (% of area)= Sub Totals

>30<300',<50 undesirable species
1.5 100 1.5

Total 1.5

Field Hydrology (HYD)

WQ Input & Treatment *

2 2.25

* The value of WQ is obtained by adding the TOTAL scores of Land use Category and Pretreatment category then dividing by 2

WQ Input & Treatment

Land use Category (LU)

LU Category (Score) X (% of area)= Sub Totals

Planted Pine 1.5 50 0.75
Natural 2.5 50 1.25
Undeveloped

LU Total 2.00

WRAP Score

0.65

Field Notes:

Wildlife Utilization (WU)
Utilized by mammals, birds, macroinvertebrates, amphibians and reptiles. Adequate adjacent upland food sources. Moderate human intervention. Adequate cover and habitat.

Wetland Canopy (O/S)

Wetland Ground Cover
<25% Undesirable species. Cover impacted by recent clear-cut.

Habitat Support/Buffer
Upland buffers consist of forested hardwoods and planted pine, ~50% of the buffer consists of undesirable loblolly pine.

Field Hydrology (HYD)

WQ Input & Treatment
Surrounding land use can best be described as ongoing silvicultural operations. Pre-treatment of water is a mix between undeveloped bottomland hardwood forest and berms that minimize erosion.
**Wetland Rapid Assessment Procedure (WRAP)**

**Application Number:**

**Project Name:** North American Coal

**Date:** 7/10/2008

**Evaluator:** D.K.

**Wetland Type:** Planted Pine

**Land Use**

**Description**

**Wetland Acreage**

**Wildlife Utilization (WU)**

2

**Wetland Canopy (O/S)**

1

**Wetland Ground Cover**

Wetland ground cover

**Habitat Support Buffer**

<table>
<thead>
<tr>
<th>Buffer Type</th>
<th>Score</th>
<th>% of Area</th>
<th>Sub Totals</th>
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</thead>
<tbody>
<tr>
<td>300’ w/ 75%</td>
<td>1</td>
<td>100</td>
<td>1</td>
</tr>
<tr>
<td>nuisance species</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td></td>
<td>1</td>
</tr>
</tbody>
</table>

**Field Hydrology (HYD)**

2

**WQ Input & Treatment**

1.38

*The value of WQ is obtained by adding the TOTAL scores of Land use Category and Pretreatment category then dividing by 2.*

**Land use Category (LU)**

<table>
<thead>
<tr>
<th>LU Category</th>
<th>Score</th>
<th>% of Area</th>
<th>Sub Totals</th>
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<tbody>
<tr>
<td>Planted Pine</td>
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<td>50</td>
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</tr>
<tr>
<td>Improved</td>
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<td></td>
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</tr>
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<td>pasture</td>
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<td>0.25</td>
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<tr>
<td>LU Total</td>
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<td></td>
<td>1.38</td>
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**Pretreatment Category (PT)**

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<th>PT Category</th>
<th>Score</th>
<th>% of Area</th>
<th>Sub Totals</th>
</tr>
</thead>
<tbody>
<tr>
<td>Planted Pine</td>
<td>1.5</td>
<td>75</td>
<td>1.125</td>
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<tr>
<td>grass swales</td>
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<td>25</td>
<td>0.25</td>
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<tr>
<td>PT Total</td>
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<td>1.38</td>
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</table>

**WRAP Score**

0.47

**Field Notes:**

**Wildlife Utilization (WU)**

Utilized by mammals, birds, macroinvertebrates, amphibians and reptiles. Adequate adjacent upland food sources. Minimal human intervention. Adequate cover and habitat.

**Wetland Canopy (O/S)**

~50% Undesirable cover. Minimal signs of natural recruitment. Healthy canopy with no sign of disease.

**Wetland Ground Cover**

~50% undesirable species. Cover significantly impacted by humans.

**Habitat Support/Buffer**

Upland buffers consist of improved pasture and planted pine.

**Field Hydrology (HYD)**


**WQ Input & Treatment**

Surrounding land use can best be described as a mix between improved pasture and silvicultural practices. Pre-treatment of water is a mix between grass swales and berms that minimize erosion.
**WETLAND RAPID ASSESSMENT PROCEDURE (WRAP)**

**WRAP Location**
WRAP 7

<table>
<thead>
<tr>
<th>Application Number</th>
<th>Project Name</th>
<th>Date</th>
<th>Evaluator</th>
<th>Wetland Type</th>
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<tr>
<td></td>
<td>North American Coal</td>
<td>7/10/2008</td>
<td>D.K.</td>
<td>Bottomland Forest</td>
</tr>
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<table>
<thead>
<tr>
<th>Land Use</th>
<th>Description</th>
<th>Wetland Acreage</th>
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</thead>
</table>

<table>
<thead>
<tr>
<th>Wildlife Utilization (WU)</th>
<th>Wetland Canopy (O/S)</th>
<th>Wetland Ground Cover</th>
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</thead>
<tbody>
<tr>
<td>2.5</td>
<td>3</td>
<td>3</td>
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**Habitat Support Buffer**

<table>
<thead>
<tr>
<th>Buffer Type</th>
<th>(Score)</th>
<th>X (% of area)</th>
<th>Sub Totals</th>
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<tbody>
<tr>
<td>&gt;300'</td>
<td>2.5</td>
<td>75</td>
<td>1.88</td>
</tr>
<tr>
<td>&gt;300' w/ &gt;75% nuisance species</td>
<td>1</td>
<td>25</td>
<td>0.25</td>
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<tr>
<td><strong>Total</strong></td>
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<td><strong>2.13</strong></td>
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**Field Hydrology (HYD)**

<table>
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<th>WQ Input &amp; Treatment *</th>
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</thead>
<tbody>
<tr>
<td>2.26</td>
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* The value of WQ is obtained by adding the TOTAL scores of Land use Category and Pretreatment category then dividing by 2.

**Land use Category (LU)**

<table>
<thead>
<tr>
<th>LU Category</th>
<th>(Score)</th>
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<th>Sub Totals</th>
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<tbody>
<tr>
<td>Planted Pine</td>
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<td>0.375</td>
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<tr>
<td>Natural Undev</td>
<td>2.3</td>
<td>75</td>
<td>1.88</td>
</tr>
<tr>
<td><strong>Total</strong></td>
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<td><strong>2.26</strong></td>
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**Pretreatment Category (PT)**

<table>
<thead>
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<th>PT Category</th>
<th>(Score)</th>
<th>X (% of area)</th>
<th>Sub Totals</th>
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</thead>
<tbody>
<tr>
<td>Planted Pine</td>
<td>1.5</td>
<td>25</td>
<td>0.375</td>
</tr>
<tr>
<td>Natural Undev</td>
<td>2.3</td>
<td>75</td>
<td>1.88</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td></td>
<td><strong>2.26</strong></td>
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</table>

**WRAP Score**

<p>| |</p>
<table>
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<tr>
<th></th>
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</thead>
<tbody>
<tr>
<td><strong>0.85</strong></td>
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</table>

**Field Notes:**

**Wildlife Utilization (WU)**
Utilized by mammals, birds, macroinvertebrates, amphibians and reptiles. Adequate adjacent upland food sources. Minimal human intervention. Adequate cover and habitat.

**Wetland Canopy (O/S)**

**Wetland Ground Cover**
<10% Undesirable species with no exotics. Good habitat, minimal disturbance to ground cover.

**Habitat Support/Buffer**
Upland buffers consist of forested hardwoods and planted pine.

**Field Hydrology (HYD)**
Exhibits natural hydroperiod. Plants healthy. Berms present in some places. No subsidence.

**WQ Input & Treatment**
Surrounding land use can best be described as a natural undeveloped land and infrequent silvicultural practices. Pre-treatment of water is through natural undeveloped land and forested swales.
**WETLAND RAPID ASSESSMENT PROCEDURE**

**WRAP Location**
WRAP 8

<table>
<thead>
<tr>
<th>Application Number</th>
<th>Project Name</th>
<th>Date</th>
<th>Evaluator</th>
<th>Wetland Type</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>North American Coal</td>
<td>7/21/2008</td>
<td>D.K.</td>
<td>Planted Pine</td>
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<table>
<thead>
<tr>
<th>Land Use</th>
<th>Description</th>
<th>Wetland Acreage</th>
</tr>
</thead>
</table>

| Wildlife Utilization (WU) | 2 |

<table>
<thead>
<tr>
<th>Habitat Support Buffer</th>
<th>Buffer Type (Score)</th>
<th>X (% of area)</th>
<th>Sub Totals</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>&gt;300’ &amp; &gt;75%</td>
<td>1 100</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>nuisance</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Species</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Wetland Canopy (O/S)**

| Field Hydrology (HYD) | 1 |

| Wetland Ground Cover | 1 |

**WQ Input & Treatment**

* The value of WQ is obtained by adding the TOTAL scores of Land use Category and Pretreatment category then dividing by 2.

**Land use Category (LU)**

<table>
<thead>
<tr>
<th>LU Category (Score)</th>
<th>X (% of area)</th>
<th>Sub Totals</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pine</td>
<td>1.5</td>
<td>1.5</td>
</tr>
<tr>
<td>Plantation</td>
<td></td>
<td></td>
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</table>

**LU Total**

<table>
<thead>
<tr>
<th>PT Category (Score)</th>
<th>X (% of area)</th>
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</tr>
</thead>
<tbody>
<tr>
<td>Undeveloped</td>
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<td>1.5</td>
</tr>
<tr>
<td>Planted</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pine</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**PT Total**

**WRAP Score**
0.47

**Field Notes:**

- **Wildlife Utilization (WU)**
  Utilized by small and large mammals, and a small number of songbirds. Cover is adequate, but poor upland food sources exist adjacent to the wetland.

- **Wetland Canopy (O/S)**
  >50% Undesirable species exist in the pine dominated canopy. There are hydrology problems associated with the rowed pine trees.

- **Wetland Ground Cover**
  ~50% Undesirable species in the ground cover component. Maintained as a pine plantation, limited diversity of ground cover species.

- **Habitat Support/Buffer**
  >300’ buffer, but has a >75% nuisance species composition (pine plantation).

- **Field Hydrology (HYD)**
  Hydroperiod adequate, but rowed swales associated with the planted pine trees has an adverse affect on hydrology.

- **WQ Input & Treatment**
  (LU) - Surrounding land use is primarily planted pine monoculture. (PT) - Undeveloped planted pine.
**WETLAND RAPID ASSESSMENT PROCEDURE (WRAP)**

<table>
<thead>
<tr>
<th>Application Number</th>
<th>Project Name</th>
<th>Date</th>
<th>Evaluator</th>
<th>Wetland Type</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>North American Coal</td>
<td>7/25/2008</td>
<td>D.K.</td>
<td>Bottomland Forest</td>
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</table>

<table>
<thead>
<tr>
<th>Land Use</th>
<th>Description</th>
<th>Wetland Acreage</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

| Wildlife Utilization (WU) | 2 |

<table>
<thead>
<tr>
<th>Habitat Support Buffer</th>
<th>Wetland Canopy (O/S)</th>
<th>Wetland Ground Cover</th>
<th>WQ Input &amp; Treatment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Buffer Type (Score)</td>
<td>X (% of area)</td>
<td>Field Hydrology (HYD)</td>
<td>2.5</td>
</tr>
<tr>
<td>&gt;300'</td>
<td>2</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Total</td>
<td>2</td>
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<table>
<thead>
<tr>
<th>Land use Category (LU)</th>
<th>PT Category (Score)</th>
<th>X (% of area)</th>
<th>Sub Totals</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nat Undeveloped</td>
<td>2.5</td>
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<td>2.5</td>
</tr>
<tr>
<td>LU Total</td>
<td>2.50</td>
<td></td>
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</tbody>
</table>

| PT Total | 2.5 |

**WRAP Score**

| 0.72 |

**Field Notes:**

**Wildlife Utilization (WU)**
Utilized by small and large mammals, songbirds and reptiles. Cover and adjacent upland food sources are adequate and human intervention is minimal.

**Wetland Canopy (O/S)**
<10% Invasive canopy species are present. The canopy is healthy and there is strong evidence of natural recruitment. Canopy provides habitat.

**Wetland Ground Cover**
<25% Undesirable species composition in the herbaceous layer. Cover is slightly impacted by human activities.

**Habitat Support/Buffer**
>300' buffer on average. There is a <10% exotic species component in the adjacent land. Site is connected to wildlife corridors.

**Field Hydrology (HYD)**
Hydroperiod adequate, but swales and adjacent roads may have an adverse affect on hydrology.

**WQ Input & Treatment**
(LU) - Natural Undeveloped Land  (PT) - Natural Undeveloped Land
# WETLAND RAPID ASSESSMENT PROCEDURE (WRAP)

**WRAP Location**

WRAP 10

<table>
<thead>
<tr>
<th>Application Number</th>
<th>Project Name</th>
<th>Date</th>
<th>Evaluator</th>
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<tbody>
<tr>
<td></td>
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<td>7/22/2008</td>
<td>D.K.</td>
<td>Planted Pine</td>
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<thead>
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<th>Land Use</th>
<th>Description</th>
<th>Wetland Acreage</th>
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</table>

<table>
<thead>
<tr>
<th>Wildlife Utilization (WU)</th>
<th>Wetland Canopy (O/S)</th>
<th>Wetland Ground Cover</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.5</td>
<td>1</td>
<td>1</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Habitat Support Buffer</th>
<th>Field Hydrology (HYD)</th>
<th>WQ Input &amp; Treatment *</th>
</tr>
</thead>
<tbody>
<tr>
<td>Buffer Type (Score) X (% of area)= Sub Totals</td>
<td></td>
<td>* The value of WQ is obtained by adding the TOTAL scores of Land use Category and Pretreatment category then dividing by 2</td>
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<tr>
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<thead>
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<tr>
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<td>LU Total 1.50</td>
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<tr>
<td>PT Total 1.5</td>
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</table>

**WRAP Score**

0.50

**Field Notes:**

- **Wildlife Utilization (WU)**
  Utilized by small and large mammals. No sign of reptiles or amphibians were observed. Limited adjacent upland food source.

- **Wetland Canopy (O/S)**
  >50% Undesirable species composition. Minimal sign of recruitment, intensively maintained as pine monoculture.

- **Wetland Ground Cover**
  ~50% Undesirable species. Routinely managed as pine monoculture, low species diversity.

- **Habitat Support/Buffer**
  >300' buffer on average. Contains some desirable species. Site is connected to wildlife corridors.

- **Field Hydrology (HYD)**
  Hydroperiod adequate, plants appear healthy and disease free. Some subsidence was observed.

- **WQ Input & Treatment**
  (LU) - Pine Plantation (PT) - Undeveloped Pine Plantation
**WETLAND RAPID ASSESSMENT PROCEDURE**

(WRAP)

<table>
<thead>
<tr>
<th>Application Number</th>
<th>Project Name</th>
<th>Date</th>
<th>Evaluator</th>
<th>Wetland Type</th>
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<table>
<thead>
<tr>
<th>Land Use</th>
<th>Description</th>
<th>Wetland Acreage</th>
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<tbody>
<tr>
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<table>
<thead>
<tr>
<th>Wildlife Utilization (WU)</th>
<th>Wetland Canopy (O/S)</th>
<th>Wetland Ground Cover</th>
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</thead>
<tbody>
<tr>
<td>1.5</td>
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<td>1</td>
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<table>
<thead>
<tr>
<th>Habitat Support Buffer</th>
<th>Field Hydrology (HYD)</th>
<th>WQ Input &amp; Treatment *</th>
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<tbody>
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<td>Buffer Type (Score)</td>
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</tr>
<tr>
<td>&gt;30-300'</td>
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<table>
<thead>
<tr>
<th>Total Sub Totals</th>
<th>Total Sub Totals</th>
<th>Total Sub Totals</th>
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</thead>
<tbody>
<tr>
<td>1.5</td>
<td>2</td>
<td>1.5</td>
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<table>
<thead>
<tr>
<th>Land use Category (LU)</th>
<th>Pretreatment Category (PT)</th>
</tr>
</thead>
<tbody>
<tr>
<td>LU Category (Score)</td>
<td>PT Category (Score)</td>
</tr>
<tr>
<td>Fine Plantation 1.5</td>
<td>Pine Plantation 1.5</td>
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</table>

<table>
<thead>
<tr>
<th>LU Total</th>
<th>PT Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.5</td>
<td>1.5</td>
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</table>

**WRAP Score**

0.47

**Field Notes:**

**Wildlife Utilization (WU)**
Utilized by small and large mammals, aquatic fishes, amphibians, reptiles. Limited upland food source.

**Wetland Canopy (O/S)**
>50% Undesirable species composition. Limited sign of recruitment was observed. Intensively maintained as pine monoculture.

**Wetland Ground Cover**
~50% Undesirable cover. Routinely managed as pine monoculture, low species diversity and biomass.

**Habitat Support Buffer**
<30>300' buffer on average. Provides cover, limited food source.

**Field Hydrology (HYD)**
Hydroperiod adequate, plants appear healthy and disease free. Soil subsidence observed, adversely affecting hydrology.

**WQ Input & Treatment**
(LU) - Pine Plantation (PT) - Undeveloped Pine Plantation

* The value of WQ is obtained by adding the TOTAL scores of Land use Category and Pretreatment category then dividing by 2.
### WETLAND RAPID ASSESSMENT PROCEDURE (WRAP)

<table>
<thead>
<tr>
<th>Application Number</th>
<th>Project Name</th>
<th>Date</th>
<th>Evaluator</th>
<th>Wetland Type</th>
<th>WRAP Location</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>North American Coal</td>
<td>6/12/2008</td>
<td>David Knowles</td>
<td>Bottomland Forest</td>
<td>WRAP 12</td>
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<table>
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<table>
<thead>
<tr>
<th>Wildlife Utilization (WU)</th>
<th>Wetland Canopy (O/S)</th>
<th>Wetland Ground Cover</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>2</td>
<td>1.5</td>
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#### Habitat Support Buffer

<table>
<thead>
<tr>
<th>Buffer Type</th>
<th>(Score)</th>
<th>X (% of area)</th>
<th>Sub Totals</th>
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</thead>
<tbody>
<tr>
<td>&gt;30-300'</td>
<td>1.5</td>
<td>100</td>
<td>1.5</td>
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<tr>
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<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td><strong>Total</strong> 1.5</td>
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#### Field Hydrology (HYD)

<table>
<thead>
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<th>Field Hydrology (HYD)</th>
<th>WQ Input &amp; Treatment *</th>
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</thead>
<tbody>
<tr>
<td>2</td>
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* The value of WQ is obtained by adding the total scores of Land use Category and Pretreatment category then dividing by 2.

#### Land Use Category (LU)

<table>
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<tr>
<th>LU Category</th>
<th>(Score)</th>
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<tbody>
<tr>
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<td>Pasture</td>
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<table>
<thead>
<tr>
<th>PT Category</th>
<th>(Score)</th>
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</thead>
<tbody>
<tr>
<td>Wet detention w/ grass swales</td>
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<table>
<thead>
<tr>
<th>PT Total</th>
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#### WRAP Score

<table>
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<th>WRAP Score</th>
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</thead>
<tbody>
<tr>
<td>0.58</td>
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</table>

### Field Notes:

#### Wildlife Utilization (WU)

Evidence of use by mammals, birds, macroinvertebrates, amphibians and reptiles. Adequate adjacent upland food sources. Frequent human intervention. Adequate protective cover.

#### Wetland Canopy (O/S)

<10% invasive cover. Minimal recruitment of native species. Canopy provides good cover and habitat. Few snags, healthy canopy.

#### Wetland Ground Cover

<10% invasive species. Cover significantly impacted by livestock.

#### Habitat Support/Buffer

Upland buffer provides little cover. Wetland buffer does provide adequate cover. Portions of wetland are connected to off-site corridor.

#### Field Hydrology (HYD)

Wetland hydroped period adequate but has swales, ponds and reduced drainage.

#### WQ Input & Treatment

The water entering the system is directly effected by livestock pasture and cattle ponds. A natural wetland drain was previously altered and now feeds two cattle ponds before entering the Okatibbee floodplain.
**Field Notes:**

**Wildlife Utilization (WU)**
Abundant sign of mammals, birds, macroinvertebrates, amphibians and reptiles. Adequate adjacent upland food sources. Minimal human intervention. Adequate cover and habitat within wetland and adjacent upland buffer.

**Wetland Canopy (O/S)**
<10% invasive cover. Good habitat, strong evidence of natural recruitment. Healthy canopy with no sign of disease.

**Wetland Ground Cover**
<25% invasive species. Chinese privet present in the understory, cover slightly impacted by humans.

**Habitat Support/Buffer**
Wetland buffer >300' on average, 50% of buffer consists of ~50% undesirable plant species (loblolly pine). Upland buffer provides good cover and adequate food source. Wetland buffer is connected to off-site corridors and supports large mammals.

**Field Hydrology (HYD)**
Adequate hydroperiod. Silvicultural practices have produced some rutting in places and a significant amount of ditching has taken place and affected hydrology.

**WQ Input & Treatment**
Surrounding land use can best be described as a mix between natural undeveloped land and silvicultural practices. Pre-treatment of water is mostly natural undeveloped lands.
**WETLAND RAPID ASSESSMENT PROCEDURE**

- **Application Number**
- **Project Name**: North American Coal
- **Date**: 6/24/2008
- **Evaluator**: D.K. and D.N.
- **Wetland Type**: Bottomland Forest
- **Land Use**
- **Wildlife Utilization (WU)**: 2.75
- **Wetland Canopy (O/S)**: 3
- **Wetland Acreage**
- **Wetland Canopy (O/S)**
- **Wetland Ground Cover**: 2.5

### Habitat Support Buffer

<table>
<thead>
<tr>
<th>Buffer Type (Score)</th>
<th>X (%) of area=</th>
<th>Sub Totals</th>
</tr>
</thead>
<tbody>
<tr>
<td>&gt;300’ average</td>
<td>2.5</td>
<td>1.25</td>
</tr>
<tr>
<td>&gt;300’ w/ &gt;75% exotic species</td>
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<td>0.5</td>
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<tr>
<td><strong>Total</strong></td>
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<td><strong>1.75</strong></td>
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### Field Hydrology (HYD)

- **Field Hydrology (HYD)**: 2.5

### Land Use Category (LU)

<table>
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<tr>
<th>LU Category (Score)</th>
<th>X (%) of area=</th>
<th>Sub Totals</th>
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</thead>
<tbody>
<tr>
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<td><strong>LU Total</strong></td>
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<td><strong>2.25</strong></td>
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### WQ Input & Treatment *

- **WQ Input & Treatment**: 2.25

* The value of WQ is obtained by adding the TOTAL scores of Land use Category and Pretreatment category then dividing by 2

### WRAP Score

- **WRAP Score**: 0.82

### Field Notes:

**Wildlife Utilization (WU)**

Abundant mammals, birds, macroinvertebrates, amphibians and reptiles. Abundant adjacent upland food sources. Negligible human intervention. Abundant cover and habitat within wetland and adjacent upland buffer.

**Wetland Canopy (O/S)**

<10% invasive cover. Good habitat, strong evidence of natural recruitment. Healthy canopy with no sign of disease.

**Wetland Ground Cover**

<10% invasive species. Chinese privet present in the understory, cover slightly impacted by humans.

**Habitat Support/Buffer**

Upland buffer provides good cover and adequate food source. Wetland buffer is connected to off-site corridors and supports large mammals. >300’ width on average, 50% of buffer contains>75% exotic species.

**Field Hydrology (HYD)**

Healthy non-stressed plants, wetland exhibits a natural hydroporeperiod. Silviculture practices have produced some rutting in places and a small number of ditches are found throughout the Chickasawhay Creek floodplain.

**WQ Input & Treatment**

Surrounding land use can best be described as a mix between natural undeveloped land and silvicultural practices. Pre-treatment of water is mostly natural undeveloped lands.
Wetland Rapid Assessment Procedure

□ Existing Conditions □ Proposed Conditions (WRAP)

Application Number
Project Name
Date
Evaluator
Wetland Type
North American Coal
10/07/08
Stowe
Hardwood-Pine Forest

Land Use

FLUCCS Code

Description:

Wildlife Utilization (WU) 1.5

Wetland Canopy (O/S) 2

Wetland Ground Cover (GC) 2.5

Buffer type
Habitat Support/Buffer

(Score) (% of area) =Sub Totals

Field Hydrology (HYD) 2.5

WQ Input & Treatment (WQ)* 1.5

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<thead>
<tr>
<th>Buffer type</th>
<th>Habitat Support/Buffer</th>
<th>(Score)</th>
<th>(% of area)</th>
<th>=Sub Totals</th>
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<tbody>
<tr>
<td>&gt;300' average, consisting of &gt;75% nuisance species</td>
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<td>100</td>
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</tr>
<tr>
<td>TOTAL</td>
<td></td>
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</table>

Land use Category (LU)

Pine Plantation 1.5 100% 1.5

Pretreatment Category (PT)

Undeveloped Pine Plantation 1.5 100 1.5

WQ Score

(LU) TOTAL 1.5

PT TOTAL 1.5

Wildlife Utilization (WU) 1.5
- Evidence of large and small mammals; medium and small reptiles
- Adequate upland forage
- Minimal upland shelter

Wetland Canopy (O/S) 2
- Mature but somewhat sparse canopy
- Adequate roosting
- Desirable species present
- ~30% deadfall or snags

Wetland Ground Cover (GC) 2.5
- No exotic species observed
- ~25% nuisance species present
- Desirable wetland vegetation in area

Habitat Support/Buffer 1
- 2 yr – 3 yr old planted loblolly pine plantations which occupy 100% of the upland buffer

Field Hydrology (HYD) 2.5
- System is still able to maintain hydroperiod

WQ Input & Treatment (WQ) 1.5
- Land use = 100% loblolly pine plantation
- Pretreatment = 100% undeveloped loblolly pine plantation
Wetland Rapid Assessment Procedure

Application Number: 
Project Name: North American Coal
Date: 10/07/08
Evaluator: Everett/Stowe

Wetland Type: Bottomland Forest

Wildlife Utilization (WU) 2.5

- Abundant food shelter and roosting
- Evidence of mammals, reptiles and aquatic life.
- Desirable species
- Minimal human disturbance

Wetland Canopy (O/S) 2.5

- Desirable mature canopy
- Abundant roosting available
- Dense understory

Wetland Ground Cover (GC) 2

- ≈ 50% ground cover
- Desirable species
- Siltation

Habitat Support/Buffer 2

- 50% >300’
- 50% >300’, >75% undesirable species composition

Field Hydrology (HYD) 2

Large stream is channelized

WQ Input & Treatment (WQ) 2.25

- Land use = 50% natural undeveloped & 50% pine plantation
- Pretreatment = 50% natural undeveloped & 50% pine plantation

WRAP Score: 0.74
**Wetland Rapid Assessment Procedure**

- **Application Number**: [Blank]
- **Project Name**: North American Coal
- **Date**: 10/07/08
- **Evaluator**: Everett/Stowe
- **Wetland Type**: Bottomland Forest

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**Wildlife Utilization (WU)**: 2.5

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<th>Field Hydrology (HYD)</th>
<th>WQ Input &amp; Treatment (WQ)*</th>
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<tbody>
<tr>
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<tr>
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<td>(Score)</td>
<td>(Score)</td>
</tr>
<tr>
<td>(% of area)</td>
<td>(% of area)</td>
<td>(% of area)</td>
</tr>
<tr>
<td>&gt;300'</td>
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<tr>
<td>&gt;300', &lt;75% undesirable species composition</td>
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**Land use Category (LU)**

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<tbody>
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<td>Rangeland</td>
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</table>

**WRAP Score**

- **LU TOTAL**: 2.0
- **PT TOTAL**: 2.5

**Wildlife Utilization (WU)**: 2.5
- Abundant forage, habitat, and roosting available.
- Desirable species
- Diversity of species
- Minimal human disturbance

**Wetland Canopy (O/S)**: 2.5
- Mature canopy with ≈ 25% exotic species
- Good habitat for roosting
- Desirable species for forage

**Wetland Ground Cover (GC)**: 2.5
- 70% wetland coverage with ≈ 25% exotic species present

**Habitat Support/Buffer**: 2.75
- 75% >300' natural undeveloped
- 25% >300' rangeland

**Field Hydrology (HYD)**: 2
- Man made pond adversely affects hydrology.

**WQ Input & Treatment (WQ)**: 2.25
- Land use = 100% Rangeland
- Pretreatment = 50% wet detention & 50% rangeland
Wetland Rapid Assessment Procedure

Application Number: [Blank]
Project Name: North American Coal
Date: 10/08/08
Evaluator: Everett/Stowe
Wetland Type: Bottomland Forest

Land Use

FLUCCS Code

Description:

Wildlife Utilization (WU)

2

Weiland Canopy (O/S)

2

Wetland Ground Cover (GC)

Buffer type

Habitat Support/Buffer (Score) (% of area) ~Sub Totals

Field Hydrology (HYD)

2.5

WQ Input & Treatment (WQ)*

1.5

>300', >75% nuisance species composition

1.0 100% 1.0

TOTAL

1.0

Land use Category (LU)

(Pine Plantation 1.5 100% 1.5)

(Pine Plantation 1.5 100% 1.5)

PT TOTAL 1.5

WRAP Score

0.61

Wildlife Utilization (WU)
-Evidence of wildlife utilization
-Adequate habitat for roosting and forage

Weiland Canopy (O/S)
-Mature canopy with desirable species
-Sparse in areas due to timber harvest
-Adequate roosting available

Wetland Ground Cover (GC)
<25% exotic ground cover in wetland area

Habitat Support/Buffer
>300', >75% nuisance species composition

Field Hydrology (HYD)
-Some siltation occurring in small areas due to recent clear cut
-System still able to maintain hydrologic regime

WQ Input & Treatment (WQ)
-Land use = 100% loblolly pine plantation
-Pretreatment = 100% loblolly pine plantation
# Wetland Rapid Assessment Procedure

**WRAP 19**

**Application Number:**

**Project Name:** North American Coal

**Date:** 10/08/08

**Evaluator:** Everett/Stowe

**Wetland Type:** Bottomland Forest

---

## Wildlife Utilization (WU)

- **Score:** 2.5

## Wetland Canopy (O/S)

- **Score:** 2

## Wetland Ground Cover (GC)

- **Score:** 2.0

## Field Hydrology (HYD)

- **Score:** 3

---

<table>
<thead>
<tr>
<th>Buffer Type</th>
<th>Habitat Support/Buffer</th>
<th>陆域利用 (WU)</th>
<th>Wetland Canopy (O/S)</th>
<th>Wetland Ground Cover (GC)</th>
<th>Field Hydrology (HYD)</th>
<th>WQ Input &amp; Treatment (WQ)*</th>
</tr>
</thead>
<tbody>
<tr>
<td>&gt;300'</td>
<td>1</td>
<td>100%</td>
<td>1</td>
<td>1.5</td>
<td>3</td>
<td>1.5</td>
</tr>
</tbody>
</table>

**WQ Input & Treatment (WQ)*:**

- **LU:** Pine Plantation
- **PT:** Undeveloped Planted Pine

---

**WRAP Score:** 0.67

---

### Wildlife Utilization (WU)

- Evidence of diversity of wildlife including aquatic life
- Abundant wildlife forage
- Abundant roosting in canopy

### Wetland Canopy (O/S)

- 50% of canopy is immature but has potential
- 50% of canopy is mature and healthy with ≈ 25% of understory contains exotic species

### Wetland Ground Cover (GC)

- ≈ 30% Coverage with no exotics

### Habitat Support/Buffer

- >300' average, consisting of >75% nuisance species

### Field Hydrology (HYD)

- Hydrology is unaltered.
### Wetland Rapid Assessment Procedure

**Application Number**

- North American Coal

**Project Name**

- 10/08/08

**Evaluator**

- Everett/Stowe

**Wetland Type**

- Planted Pine

### Wildlife Utilization (WU)

- 1.0

### Wetland Canopy (O/S)

- 1.5

### Wetland Ground Cover (GC)

- 1

### Field Hydrology (HYD)

- 2.0

### WQ Input & Treatment (WQ)*

- 1.5

### Land Use Category (LU)

<table>
<thead>
<tr>
<th>Land Use Category</th>
<th>Score</th>
<th>% of Area</th>
<th>Sub Totals</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pine Plantation</td>
<td>1.5</td>
<td>100%</td>
<td>1.5</td>
</tr>
</tbody>
</table>

**LU TOTAL**: 1.5

### Pretreatment Category (PT)

<table>
<thead>
<tr>
<th>Pretreatment Category</th>
<th>Score</th>
<th>% of Area</th>
<th>Sub Totals</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pine Plantation</td>
<td>1</td>
<td>100%</td>
<td>1.5</td>
</tr>
</tbody>
</table>

**PT TOTAL**: 1.5

### Wetland Rapid Assessment Procedure

- **Wildlife Utilization (WU)**
  - Little habitat for birds and reptiles, deer tracks were observed in the wetland.
  - Limited adjacent upland food source.

- **Wetland Canopy (O/S)**
  - <25% undesirable cover.
  - Minimal sign of recruitment of native species.

- **Wetland Ground Cover (GC)**
  - ~50% undesirable cover.

- **Habitat Support/Buffer**
  - >300', consisting of >75% nuisance species.

- **Field Hydrology (HYD)**
  - System is culverted upstream under an old logging road.
  - Hydroperiod is adequate enough to maintain system.

- **WQ Input & Treatment (WQ)**
  - Land use = 100% pine plantation
  - W.Q. Pretreatment = 100% pine plantation
### Wetland Rapid Assessment Procedure

**Application Number**:  
**Project Name**: North American Coal  
**Date**: 10/08/08  
**Evaluator**: Everett/Stowe  
**Wetland Type**: Hardwood-Pine Forest

<table>
<thead>
<tr>
<th>Land Use</th>
<th>FLUCCS Code</th>
<th>Description</th>
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<tbody>
<tr>
<td></td>
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### Wildlife Utilization (WU) 2.5

<table>
<thead>
<tr>
<th>Buffer type</th>
<th>Habitat Support/Buffer (Score) X (% of area) = Sub Totals</th>
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</thead>
<tbody>
<tr>
<td>&gt;30&lt;300', &gt;75% undesirable species composition</td>
<td>1 100% 1 TOTAL</td>
</tr>
</tbody>
</table>

### Wetland Canopy (O/S) 2.5

- Adequate roosting and forage
- Negligible evidence of human disturbance
- Uplands consist of ≈ 2 yr old planted pine

### Wetland Ground Cover (GC) 2.5

- <25% Undesirable species present

### Habitat Support/Buffer 1

- >30<300' Buffer consists of >75% undesirable species composition

### Field Hydrology (HYD) 3.0

- Non altered hydrology

### WQ Input & Treatment (WQ)* 1.5

- (LU) pine plantation
- (PT) undeveloped pine plantation

### Land use Category (LU) X (% of area) = Sub Totals

<table>
<thead>
<tr>
<th>Pine Plantation</th>
<th>1.5</th>
<th>100%</th>
<th>1.5</th>
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</table>

### Pretreatment Category (PT) X (% of area) = Sub Totals

<table>
<thead>
<tr>
<th>Pine Plantation</th>
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<th>100%</th>
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**WRAP Score**: 0.72
### Wetland Rapid Assessment Procedure

**Application Number**

**Project Name**

**Date**

**Evaluator**

**Wetland Type**

<table>
<thead>
<tr>
<th>Land Use</th>
<th>FLUCCS Code</th>
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<table>
<thead>
<tr>
<th>Wildlife Utilization (WU)</th>
<th>Wetland Canopy (O/S)</th>
<th>Wetland Ground Cover (GC)</th>
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<tbody>
<tr>
<td>2.5</td>
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</tbody>
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<table>
<thead>
<tr>
<th>Buffer type</th>
<th>Habitat Support/Buffer</th>
<th>(Score) X</th>
<th>(% of area)</th>
<th>Sub Totals</th>
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<tbody>
<tr>
<td>&gt;300' Pine Plantation</td>
<td>1.0</td>
<td>50%</td>
<td>0.5</td>
<td>2.0</td>
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<tr>
<td>&gt;300' Hardwood</td>
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### Pretreatment Category (PT)

<table>
<thead>
<tr>
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<th>(% of area)</th>
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<tbody>
<tr>
<td>Nat Undeveloped</td>
<td>2.5</td>
<td>100%</td>
</tr>
<tr>
<td>PT TOTAL</td>
<td>2.5</td>
<td></td>
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</tbody>
</table>

### WRAP Score

0.81

### Wildlife Utilization (WU)

- Connected to wildlife corridor
- Abundant shelter, forage, and roosting

### Wetland Canopy (O/S)

<10% Invasive canopy, Evidence of recruitment of native species present.

### Wetland Ground Cover (GC)

<25% Undesirable species

### Habitat Support/Buffer

>300' average buffer. 50% of buffer is comprised of planted loblolly, the remaining 50% is hardwood

### Field Hydrology (HYD)

Natural wetland hydroperiod

### WQ Input & Treatment (WQ)

- Land use = Natural Undeveloped
- W.Q. Pretreatment = Natural Undeveloped
### Wetland Rapid Assessment Procedure

**Application Number**
- [ ] Check one
- **Existing Conditions**
- **Proposed Conditions**

**Project Name**
- North American Coal

**Date**
- 10/09/08

**Evaluator**
- Everett/Stowe

**Wetland Type**
- Bottomland Forest

#### Land Use

<table>
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<tr>
<th>FLUCS Code</th>
<th>Description</th>
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<tr>
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#### Wildlife Utilization (WU)

<table>
<thead>
<tr>
<th>Buffer type</th>
<th>(Score) X</th>
<th>(% of area)</th>
<th>=Sub Totals</th>
</tr>
</thead>
<tbody>
<tr>
<td>&gt;300'</td>
<td>2.5</td>
<td>100%</td>
<td>2.5</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>TOTAL 2.5</td>
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</table>

#### Wetland Canopy (O/S)

<table>
<thead>
<tr>
<th>Field Hydrology (HYD)</th>
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</thead>
</table>

#### Wetland Ground Cover (GC)

<table>
<thead>
<tr>
<th>WQ Input &amp; Treatment (WQ)*</th>
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</thead>
<tbody>
<tr>
<td></td>
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</tbody>
</table>

#### Habitat Support/Buffer

<table>
<thead>
<tr>
<th>Land use Category (LU)</th>
<th>(Score) X</th>
<th>(% of area)</th>
<th>=Sub Totals</th>
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<tbody>
<tr>
<td>Nat. Undevel.</td>
<td>2.5</td>
<td>100%</td>
<td>2.5</td>
</tr>
<tr>
<td>PT TOTAL</td>
<td>2.5</td>
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#### Pretreatment Category (PT)

<table>
<thead>
<tr>
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<th>(% of area)</th>
<th>=Sub Totals</th>
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</thead>
<tbody>
<tr>
<td>Nat. Undeveloped</td>
<td>2.5</td>
<td>100%</td>
<td>2.5</td>
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</tbody>
</table>

### WRAP Score

0.83

#### Wildlife Utilization (WU)

- Evidence of utilization by large mammals, aquatic macro-invertebrates, reptiles, amphibians and birds was observed.
- Abundant shelter, forage, and roosting is available to wildlife.
- Minimal human intervention to wildlife.

#### Wetland Canopy (O/S)

- Good habitat
- Canopy comprised of >90% desirable canopy species.
- Strong evidence of natural recruitment

#### Wetland Ground Cover (GC)

<10% Invasive species composition, no exotic species present.
There is minimal disturbance to ground cover.

#### Habitat Support/Buffer

>300' buffer on average. The wetland is connected to a wildlife corridor.

#### Field Hydrology (HYD)

Exhibits natural hydroperiod.

#### WQ Input & Treatment (WQ)

- Land use = Natural Undeveloped Land
- W.Q. Pretreatment = Natural Undeveloped Land
**Wetland Rapid Assessment Procedure**

**Application Number**

<table>
<thead>
<tr>
<th>Land Use</th>
<th>FLUTCCS Code</th>
<th>Description</th>
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</table>

**Wildlife Utilization (WU)**

<table>
<thead>
<tr>
<th>Buffer type</th>
<th>Habitat Support/Buffer (Score) X (% of area)</th>
<th>=Sub Totals</th>
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<tbody>
<tr>
<td>&gt;50' &lt;300'</td>
<td>1 X 80%</td>
<td>0.8</td>
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<tr>
<td>&gt;300', consisting of &gt;75% nuisance species</td>
<td>1 X 20%</td>
<td>0.2</td>
</tr>
<tr>
<td>TOTAL</td>
<td></td>
<td>1.0</td>
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</tbody>
</table>

**Wetland Canopy (O/S)**

| Wetland Canopy (O/S) | 2.5 |

**Wetland Ground Cover (GC)**

| Wetland Ground Cover (GC) | 2.5 |

**Field Hydrology (HYD)**

| Field Hydrology (HYD) | 2.5 |

**WQ Input & Treatment (WQ)**

| WQ Input & Treatment (WQ)* | 1.5 |

### Land Use Category (LU)

<table>
<thead>
<tr>
<th>Land use Category</th>
<th>(Score) X (% of area)</th>
<th>=Sub Totals</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pine Plantation</td>
<td>1.5 X 100%</td>
<td>1.5</td>
</tr>
</tbody>
</table>

**WRAP Score**

| (LU) TOTAL | 1.5 |

**Pretreatment Category (PT)**

<table>
<thead>
<tr>
<th>Pretreatment Category</th>
<th>(Score) X (% of area)</th>
<th>=Sub Totals</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pine Plantation</td>
<td>1.5 X 100%</td>
<td>1.5</td>
</tr>
</tbody>
</table>

**Wildlife Utilization (WU) 2.5**

- Evidence of utilization by large mammals, aquatic macro-invertebrates, reptiles, amphibians and birds was observed.
- Abundant shelter, forage, and roosting

**Wetland Canopy (O/S) 2.5**

- Minimal human disturbance
- <=25% invasive species

**Wetland Ground Cover (GC) 2.5**

- Wetland has a desirable diversity of vegetative ground cover.
- No exotics observed

**Habitat Support/Buffer 1.0**

- 80% >30’ <300’; 20% >300’, consisting of >75% nuisance species

**Field Hydrology (HYD) 2.5**

- Exhibits natural hydroperiod.

**WQ Input & Treatment (WQ) 1.5**

- Land use = Pine Plantation
- W.Q. Pretreatment = Pine Plantation
### Wetland Rapid Assessment Procedure

- **Application Number**: [Blank]
- **Project Name**: North American Coal
- **Date**: 10/09/08
- **Evaluator**: Everett/Stowe
- **Wetland Type**: Pine-Hardwood Forest

#### Wildlife Utilization (WU)
- **Score**: 0.5
- **Description**: Minimal utilization of wetland and adjacent uplands by wildlife species. Minimal roosting and forage in wetland. Uplands have been replanted in loblolly pine.

#### Wetland Canopy (O/S)
- **Score**: 1.5
- **Description**: Herbicide use has affected canopy species adjacent to clear-cut uplands. Immature canopy has potential. <25% Undesirable cover.

#### Wetland Ground Cover (GC)
- **Score**: 1.5
- **Description**: ~50% Undesirable ground cover, there is a sparse canopy and thick understory. ~No exotic species recorded in ground cover but 20% nuisance species were present.

#### Habitat Support/Buffer
- **Score**: 0.5
- **Description**: <300’ average buffer width. Surrounding wetland has been cleared, sprayed, and replanted with undesirable species. The wetland is connected to offsite corridor.

#### Field Hydrology (HYD)
- **Score**: 2.5
- **Description**: Hydroperiod is adequate, but soil subsidence was observed.

#### WQ Input & Treatment (WQ)
- **Score**: 1.5
- **Description**: - Land use = Pine Plantation
- **W.Q. Pretreatment = undeveloped clear cut**

#### Land Use Category (LU)
<table>
<thead>
<tr>
<th>Land use Category</th>
<th>(Score) X</th>
<th>(% of area)</th>
<th>=Sub Totals</th>
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</thead>
<tbody>
<tr>
<td>Pine Plantation</td>
<td>1.5</td>
<td>100%</td>
<td>1.5</td>
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</table>

#### Habitat Support/Buffer Table

<table>
<thead>
<tr>
<th>Buffer type</th>
<th>(Score)</th>
<th>% of area</th>
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</thead>
<tbody>
<tr>
<td>&lt;300’</td>
<td>0.5</td>
<td>100%</td>
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</tbody>
</table>

**TOTAL**: 0.5

#### Pretreatment Category (PT)
- **Score**: 1.5

### WRAP Score
- **Score**: 0.44
**Wetland Rapid Assessment Procedure**

**Application Number**

**Date**

10/09/08

**Evaluator**

Everett/Stowe

**Wetland Type**

Field

**Land Use**

**FLCCS Code**

**Description**

**Wildlife Utilization (WU)**

2

**Wetland Canopy (OS)**

2

**Wetland Ground Cover (GC)**

1

**Buffer type**

**Habitat Support/Buffer**

(Score) X

(% of area)

~Sub Totals

>30' <300'

2

100%

2

**Field Hydrology (HYD)**

2.0

**WQ Input & Treatment (WQ)**

1.13

**TALLY**

2

**Land use Category (LU)**

(Score) X

(% of area)

~Sub Totals

**Rangeland**

2.0

50%

1

**Improved Pasture**

1

50%

0.5

**Grass swales**

1

50%

0.5

**Cattle pasture**

0.5

50%

0.25

**WRAP Score**

0.56

**PT TOTAL**

0.75

**Wildlife Utilization (WU)**

Evidence of utilization by large mammals, aquatic macro-invertebrates, amphibians and reptiles. Adjacent upland food source and cover are adequate.

**Wetland Canopy (OS)**

<25% Undesirable canopy species composition. Evidence of recruitment of native species.

**Wetland Ground Cover (GC)**

~50% Undesirable cover (wet pasture)

**Habitat Support/Buffer**

2.0

* >30' <300' buffer on average.

* Connected to offsite corridor.

**Field Hydrology (HYD)**

2.0

Hydroperiod adequate, but affected by ditching.

**WQ Input & Treatment (WQ)**

1.13

- Land use = 50% rangeland and 50% improved pasture

- W.Q. Pretreatment = 50% grass swales, 50% cattle pasture(cattle feces in wetland)
## Wetland Rapid Assessment Procedure

<table>
<thead>
<tr>
<th>Application Number</th>
<th>Project Name</th>
<th>Date</th>
<th>evaluator</th>
<th>wetland Type</th>
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<tbody>
<tr>
<td></td>
<td>North American Coal</td>
<td>10/09/08</td>
<td>Everett/Stowe</td>
<td>Planted Pine</td>
</tr>
</tbody>
</table>

### Wetland Ground Cover (GC)
- **Score**: 1.0
- **Description**: >50% undesirable species

### Wetland Canopy (O/S)
- **Score**: 0.0
- **Description**: No desirable species in the canopy. Canopy is comprised entirely of loblolly pine.

### Wetland Utilization (WU)
- **Score**: 0.5
- **Description**: Sparse adjacent upland food source. Little habitat for birds, mammals and reptiles.

### Buffer type

<table>
<thead>
<tr>
<th>Habitat Support/Buffer</th>
<th>(Score)</th>
<th>X</th>
<th>(% of area)</th>
<th>Sub Totals</th>
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<tbody>
<tr>
<td>&gt;300', consisting of</td>
<td>1</td>
<td>100%</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>&gt;75% nuisance species</td>
<td>1</td>
<td>100%</td>
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<tr>
<td>TOTAL</td>
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### Land Use Category (LJC)

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</thead>
<tbody>
<tr>
<td>Pine Plantation</td>
<td>1.5</td>
<td>100%</td>
<td>1.5</td>
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<tr>
<td>Undeveloped</td>
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<td>100%</td>
<td>1.5</td>
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### Field Hydrology (HYD)
- **Score**: 2.5
- **Description**: Wetland hydroperiod is adequate.

### WQ Input & Treatment (WQ)
- **Score**: 1.5
  - Land use = Pine Plantation
  - W.Q. Pretreatment = undeveloped pine plantation

### WRAP Score
- **Score**: 0.36
Wildlife Utilization (WU) 1
- Minimal evidence of wildlife.
- Limited adjacent upland food source.

Wetland Canopy (O/S) 0
No desirable canopy species were observed.

Wetland Ground Cover (GC) 0.5
- >75% undesirable cover.
- Intensively maintained pasture.

Habitat Support/Buffer 1
- >300' average buffer that consists of >75% nuisance species.
- Connect to offsite wildlife corridor.

Field Hydrology (HYD) 1.5
- Plants are healthy and exhibit no sign of water stress.
- Succession of wetland plant species into transitional/upland species.

WQ Input & Treatment (WQ) 0.75
- Land use = Improved pasture
- Pre-treatment of water is obtained with grass swales; however, water entering wetland is contaminated by cattle feces.
Wildlife Utilization (WU) 2 - Evidence of utilization by small, medium and large mammals was observed.
- Minimal human intervention was observed.
- Adequate protective cover is available to wildlife.

Wetland Canopy (O/S) 1.5 - Canopy provides habitat to wildlife.
- Canopy is mature, but sparse. Evidence of recruitment of native species was observed.

Wetland Ground Cover (GC) 1.5 - 50% undesirable cover as a result of a thin canopy.

Habitat Support/Buffer 2
>30-300' buffer on average.
Buffer provides cover and food source to wildlife.

Field Hydrology (HYD) 1.5
Wetland hydroperiod is adequate; however, drainage is reduced due to fill in the wetland near a small road crossing.

WQ Input & Treatment (WQ) 2.5
- Land use = 100% natural undeveloped
- W.Q. Pretreatment = 100% natural undeveloped
### WETLAND RAPID ASSESSMENT PROCEDURE

**WRAP Location**

WRAP 30

<table>
<thead>
<tr>
<th>Application Number</th>
<th>Project Name</th>
<th>Date</th>
<th>Evaluator</th>
<th>Wetland Type</th>
</tr>
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<tbody>
<tr>
<td></td>
<td>North American Coal</td>
<td>10/9/2008</td>
<td>D.K. and J.E.</td>
<td>Field</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Land Use</th>
<th>Description</th>
<th>Wetland Acreage</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
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<table>
<thead>
<tr>
<th>Wildlife Utilization (WU)</th>
<th>Wetland Canopy (O/S)</th>
<th>Wetland Ground Cover</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.5</td>
<td>1.5</td>
<td>1.5</td>
</tr>
</tbody>
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<table>
<thead>
<tr>
<th>Habitat Support Buffer</th>
<th>Field Hydrology (HYD)</th>
<th>WQ Input &amp; Treatment *</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2</td>
<td>1</td>
</tr>
</tbody>
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*The value of WQ is obtained by adding the TOTAL scores of Land use Category and Pretreatment category then dividing by 2

<table>
<thead>
<tr>
<th>Land use Category (LU)</th>
<th>(Score) X (% of area)= Sub Totals</th>
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<table>
<thead>
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<th>(Score)</th>
<th>X</th>
<th>(% of area)=</th>
<th>Sub Totals</th>
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<tbody>
<tr>
<td>Improved</td>
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<td>100</td>
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</tr>
<tr>
<td>Pasture</td>
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**LU Total**

1.00

<table>
<thead>
<tr>
<th>Pretreatment Category (PT)</th>
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<table>
<thead>
<tr>
<th>PT Category</th>
<th>(Score)</th>
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<th>(% of area)=</th>
<th>Sub Totals</th>
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</thead>
<tbody>
<tr>
<td>Grass swales</td>
<td>1</td>
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</tbody>
</table>

**PT Total**

1

**WRAP Score**

0.47

**Field Notes:**

**Wildlife Utilization (WU)**

Deer, turkey, reptiles and amphibians utilize the wetland. There is frequent human disturbance to the wetland and surrounding land. Limited cover and upland food source availability.

**Wetland Canopy (O/S)**

<25% Undesirable canopy species are present. Immature canopy, has potential.

**Wetland Ground Cover**

<25% Undesirable species composition in the herbaceous layer. Cover is impacted by human activities. Maintained as pasture.

**Habitat Support/Buffer**

>300' buffer on average. Buffer provides limited cover and adequate food source.

**Field Hydrology (HYD)**

Hydroperiod adequate, but swales and a culvert placed under the road running through the wetland adversely affect hydrology.

**WQ Input & Treatment**

(LU) - Improved Pasture (PT) - Grass swales
**WETLAND RAPID ASSESSMENT PROCEDURE**

**WRAP Location**
WRAP 31

<table>
<thead>
<tr>
<th>Application Number</th>
<th>Project Name</th>
<th>Date</th>
<th>Evaluator</th>
<th>Wetland Type</th>
</tr>
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<tbody>
<tr>
<td></td>
<td>North American Coal</td>
<td>10/9/2008</td>
<td>D.K. and J.E.</td>
<td>Bottomland Forest</td>
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</tbody>
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<table>
<thead>
<tr>
<th>Land Use</th>
<th>Description</th>
<th>Wetland Acreage</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Wildlife Utilization (WU)</th>
<th>Wetland Canopy (O/S)</th>
<th>Wetland Ground Cover</th>
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</thead>
<tbody>
<tr>
<td>2.5</td>
<td>2</td>
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**Habitat Support Buffer**

<table>
<thead>
<tr>
<th>Buffer Type</th>
<th>(Score)</th>
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<th>Sub Totals</th>
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</thead>
<tbody>
<tr>
<td>&gt;300' w/</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>&gt;75% nuisance sp.</td>
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<td></td>
<td></td>
</tr>
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**Field Hydrology (HYD)**

<table>
<thead>
<tr>
<th>Field Hydrology (HYD)</th>
<th>Sub Totals</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2</td>
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</table>

**WRAP Score**

<table>
<thead>
<tr>
<th>WRAP Score</th>
<th>0.61</th>
</tr>
</thead>
</table>

**Field Notes:**

**Wildlife Utilization (WU)**

Deer, turkey, reptiles and amphibians utilize the wetland. Adequate upland food source and cover present. Connected to wildlife corridor.

**Wetland Canopy (O/S)**

<25% Undesirable canopy species are present. Canopy provides habitat. Evidence of native recruitment. Healthy canopy with few snags.

**Wetland Ground Cover**

<25% Undesirable species composition in the herbaceous layer. Cover is slightly impacted by human activities, a maintained road cuts through the wetland swale.

**Habitat Support/Buffer**

>300' buffer on average w/ >75% nuisance species. Buffer provides adequate cover and food source. Portions connected to off-site corridors.

**Field Hydrology (HYD)**

Hydroperiod adequate, but rutted in areas near roads. Little evidence of subsidence.

**WQ Input & Treatment**

*The value of WQ is obtained by adding the TOTAL scores of Land use Category and Pretreatment category than dividing by 2*

**Pretreatment Category (PT)**

<table>
<thead>
<tr>
<th>PT Category</th>
<th>(Score)</th>
<th>X (% of area)</th>
<th>Sub Totals</th>
</tr>
</thead>
<tbody>
<tr>
<td>Undeveloped</td>
<td>1.5</td>
<td>100</td>
<td>1.5</td>
</tr>
<tr>
<td>Pine</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Plantation</td>
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<table>
<thead>
<tr>
<th>LU Category</th>
<th>(Score)</th>
<th>X (% of area)</th>
<th>Sub Totals</th>
</tr>
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<tbody>
<tr>
<td>Pine Plantation</td>
<td>1.5</td>
<td>100</td>
<td>1.5</td>
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**LU Total**

1.50

<table>
<thead>
<tr>
<th>LU Total</th>
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</thead>
</table>

**(LU) - Pine Plantation**

**(PT) - Undeveloped Pine Plantation**
**WETLAND RAPID ASSESSMENT PROCEDURE (WRAP)**

**WRAP Location**
WRAP 32

<table>
<thead>
<tr>
<th>Application Number</th>
<th>Project Name</th>
<th>Date</th>
<th>Evaluator</th>
<th>Wetland Type</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>North American Coal</td>
<td>10/10/2008</td>
<td>D.K. and J.E.</td>
<td>Field</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Land Use</th>
<th>Description</th>
<th>Wetland Acreage</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Wildlife Utilization (WU)**

<table>
<thead>
<tr>
<th>Habitat Support Buffer</th>
<th>Buffer Type (Score)</th>
<th>X (% of area)=</th>
<th>Sub Totals</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.5</td>
<td>&gt;300', &gt;75%</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>nuisance spec</td>
<td>1</td>
<td>0.5</td>
</tr>
<tr>
<td></td>
<td>Natural</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Undeveloped</td>
<td>2.5</td>
<td>1.25</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>1.75</td>
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**Wetland Canopy (O/S)**

<table>
<thead>
<tr>
<th>Field Hydrology (HYD)</th>
<th>Wetland Canopy (O/S)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1</td>
</tr>
</tbody>
</table>

**Wetland Ground Cover**

<table>
<thead>
<tr>
<th>Wetland Ground Cover</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
</tr>
</tbody>
</table>

**Field Hydrology (HYD)**

1.5

* The value of WQ is obtained by adding the TOTAL scores of Land use Category and Pretreatment category then dividing by 2

**Pretreatment Category (PT)**

<table>
<thead>
<tr>
<th>PT Category</th>
<th>(Score)</th>
<th>X (% of area)=</th>
<th>Sub Totals</th>
</tr>
</thead>
<tbody>
<tr>
<td>Livestock</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pasture</td>
<td>0.5</td>
<td>50</td>
<td>0.25</td>
</tr>
<tr>
<td>Natural</td>
<td>2.5</td>
<td>50</td>
<td>1.25</td>
</tr>
<tr>
<td>Undeveloped</td>
<td>2.5</td>
<td>50</td>
<td>1.25</td>
</tr>
<tr>
<td>LU Total</td>
<td></td>
<td></td>
<td>1.50</td>
</tr>
</tbody>
</table>

**WRAP Score**

0.51

**Field Notes:**

**Wildlife Utilization (WU)**
Utilized by deer, songbirds, reptiles and amphibians. Limited adjacent upland food source. Area is used as livestock pasture, cows were present in the wetland at the time of survey.

**Wetland Canopy (O/S)**
Has been cleared up to the edge of the floodplain. Some desirable species in canopy; immature but has potential. Environmental impacts in place, dead trees were observed in the wetland.

**Wetland Ground Cover**
50% Undesirable ground cover; routinely managed as wet pasture for livestock grazing.

**Habitat Support/Buffer**
50% has buffer of >300', but has >75% nuisance species. The remaining 50% is >300' and is natural undeveloped land

**Field Hydrology (HYD)**
Dammed pond has adversely affected hydrology. Dead trees were observed in the wetland.

**WQ Input & Treatment**
(L.U) - 50% Livestock Pasture, 50% Nat. Undeveloped (PT) - 50% Livestock Pasture, 50% Natural Undeveloped
WETLAND RAPID ASSESSMENT PROCEDURE
(WRAP)

Application Number:  
Project Name: North American Coal  
Date: 10/10/2008  
Evaluator: D.K. and J.E.  
Wetland Type: Planted Pine

Land Use:  
Description:  
Wetland Acreage:  

Wildlife Utilization (WU)  
1

Habitat Support Buffer  
Buffer Type (Score) X (% of area)= Sub Totals  
>300’ with predominantly nuisance species 1 100 1 Total

Field Hydrology (HYD)  
Sub Totals 2

Wetland Canopy (O/S)  
1

Wetland Ground Cover  
1

WRAP Location  
WRAP 33

WRAP Score  
0.42

Field Notes:

Wildlife Utilization (WU)
Minimal evidence of wildlife, not adequate for songbirds. Sparse upland food source. Abuts well traveled paved road.

Wetland Canopy (O/S)
>75% Undesirable species composition. 100% dominated by rowed, planted loblolly pine. Negligible habitat support.

Wetland Ground Cover
>75% Undesirable species composition. Cover highly impacted, mostly nuisance species.

Habitat Support/Buffer
>300’, but has >75% nuisance species.

Field Hydrology (HYD)
Wetland hydrology adequate; however, heavy soil subsidence occurs in areas and hydrology is adversely affected by paved and dirt roads. Plants show no sign of water stress.

WQ Input & Treatment
(LU) - Planted loblolly pine (PT) - Undeveloped Pine Plantation.

* The value of WQ is obtained by adding the TOTAL scores of Land use Category and Pretreatment category then dividing by 2
WETLAND RAPID ASSESSMENT PROCEDURE

Application Number: 
Project Name: North American Coal 
Date: 10/7/2008 
Evaluator: D.K. and J.E. 
Wetland Type: Hardwood-Pine Forest 

Land Use: 
Description: 
Wetland Acreage: 

Wildlife Utilization (WU) 

2

Wetland Canopy (O/S) 

2.5

Wetland Ground Cover 

2

Habitat Support Buffer

<table>
<thead>
<tr>
<th>Buffer Type</th>
<th>(Score)</th>
<th>X</th>
<th>(%) of area</th>
<th>Sub Totals</th>
</tr>
</thead>
<tbody>
<tr>
<td>2 &gt;300’, but has</td>
<td>1</td>
<td>50</td>
<td>0.5</td>
<td></td>
</tr>
<tr>
<td>2 &gt;75% nuisance species</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No Buffer</td>
<td>0</td>
<td>50</td>
<td>0</td>
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Total

Field Hydrology (HYD)

2

WQ Input & Treatment *

1.13

* The value of WQ is obtained by adding the TOTAL scores of Land use Category and Pretreatment category then dividing by 2

Land use Category (LU)

<table>
<thead>
<tr>
<th>LU Category</th>
<th>(Score)</th>
<th>X</th>
<th>(%) of area</th>
<th>Sub Totals</th>
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</thead>
<tbody>
<tr>
<td>Imp. Pasture</td>
<td>1</td>
<td>50</td>
<td>0.5</td>
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</tr>
<tr>
<td>LV Highway</td>
<td>1</td>
<td>25</td>
<td>0.25</td>
<td></td>
</tr>
<tr>
<td>Planted Pine</td>
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<td>25</td>
<td>0.38</td>
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LU Total

0.56

WRAP Score

PT Category

<table>
<thead>
<tr>
<th>Category</th>
<th>(Score)</th>
<th>X</th>
<th>(%) of area</th>
<th>Sub Totals</th>
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</thead>
<tbody>
<tr>
<td>Grass swales</td>
<td>1</td>
<td>75</td>
<td>0.75</td>
<td></td>
</tr>
<tr>
<td>Undeveloped</td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Planted Pine</td>
<td>1.5</td>
<td>25</td>
<td>0.38</td>
<td></td>
</tr>
</tbody>
</table>

PT Total

1.13

Field Notes:

Wildlife Utilization (WU)
Utilized by small and large mammals. There is frequent human disturbance to wildlife due to the proximity of Liberty Rd. Cover and food sources are limited by the road and adjacent pasture.

Wetland Canopy (O/S)
Wetland canopy provides good habitat within the wetland. There is strong evidence of recruitment of native canopy species. Canopy is healthy and shows no sign of disease or stress.

Wetland Ground Cover
Ground cover is slightly impacted by human activity and soil subsidence; however the species composition is ideal for the mature hardwood/pine wetland in which it is located.

Habitat Support/Buffer
50% is comprised of a >300’ buffer, with >75% nuisance species. The remaining 50% has no buffer due to Liberty road bordering the entire north side of the wetland.

Field Hydrology (HYD)
Adequate hydrology, but ditched and impounded by Liberty Rd.

WQ Input & Treatment
(LU) - 50%Improved Pasture, 25%Low Volume Highway, 25% Planted Pine (PT) - 75%Grass swales only, 25% Planted Pine
### Field Notes:

**Wildlife Utilization (WU)**
Site provides adequate herbaceous forage, but little cover and adjacent upland food source currently exists.

**Wetland Canopy (O/S)**
Wetland has an immature canopy and is kept as pasture. There is minimal sign of recruitment of native canopy species.

**Wetland Ground Cover**
-50% Undesirable species composition. Routinely managed as improved pasture.

**Habitat Support Buffer**
>300' buffer, but is comprised of >75% non-invasive nuisance species.

**Field Hydrology (HYD)**
Adequate hydrology, but adjacent to roads and ditching.

**WQ Input & Treatment**
(LU) - Improved Pasture (PT) - Grass swales only.
# Wetland Rapid Assessment Procedure (WRAP)

**Application Number**

**Project Name**
North American Coal

**Date**
10/7/2008

**Evaluator**
D.K. and J.E.

**Wetland Type**
Pine-Hardwood Forest

**Land Use**

**Description**

**Wildlife Utilization (WU)**
2

**Wetland Canopy (O/S)**
2

**Wetland Acreage**

**Wetland Ground Cover**
2

### Habitat Support Buffer

<table>
<thead>
<tr>
<th>Buffer Type</th>
<th>(Score)</th>
<th>X (% of area)</th>
<th>Sub Totals</th>
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</thead>
<tbody>
<tr>
<td>&gt;300′</td>
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</tr>
<tr>
<td>&gt;30&lt;300′</td>
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**Field Hydrology (HYD)**

<table>
<thead>
<tr>
<th></th>
<th>1.5</th>
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**WQ Input & Treatment**

* The value of WQ is obtained by adding the TOTAL scores of Land use Category and Pretreatment category then dividing by 2

### Land Use Category (LU)

<table>
<thead>
<tr>
<th>LU Category</th>
<th>(Score)</th>
<th>X (% of area)</th>
<th>Sub Totals</th>
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<tbody>
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<td>Forested</td>
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<tr>
<td>Rangeland</td>
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**LU Total**
1.00

<table>
<thead>
<tr>
<th>PT Category</th>
<th>(Score)</th>
<th>X (% of area)</th>
<th>Sub Totals</th>
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<tbody>
<tr>
<td>Forested</td>
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<td>100</td>
<td>1</td>
</tr>
<tr>
<td>Rangeland</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**PT Total**
1

**WRAP Score**
0.61

### Field Notes:

**Wildlife Utilization (WU)**
Utilized by small and large mammals, amphibians and songbirds. There is adequate food and cover in the surrounding uplands to support large mammals.

**Wetland Canopy (O/S)**
<25% Undesirable species, wetland canopy provides habitat. Recruitment of native species was evident at the time of the survey.

**Wetland Ground Cover**
<25% Undesirable species in herbaceous layer. Cover is slightly impacted by loss of sediment into the wetland from an adjacent dirt road.

**Habitat Support/Buffer**
25% of the buffer is <300′ on average, and the remaining 75% is >300′ on average.

**Field Hydrology (HYD)**
Wetland hydrology is adequate; however, is impounded by a man-made pond and is bordered by a dirt road. There is evidence of soil subsidence.

**WQ Input & Treatment**
(L.U) - Forested Rangeland (PT) - Forested Rangeland.
**WETLAND RAPID ASSESSMENT PROCEDURE**

**WRAP Location**

WRAP 37

<table>
<thead>
<tr>
<th>Application Number</th>
<th>Project Name</th>
<th>Date</th>
<th>Evaluator</th>
<th>Wetland Type</th>
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**Land Use**

<table>
<thead>
<tr>
<th>Wildlife Utilization (WU)</th>
<th>Description</th>
<th>Wetland Acreage</th>
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</thead>
<tbody>
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**Habitat Support Buffer**

<table>
<thead>
<tr>
<th>Buffer Type (Score)</th>
<th>X (% of area)</th>
<th>Sub Totals</th>
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</thead>
<tbody>
<tr>
<td>&gt;300'</td>
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<td>100</td>
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**Wetland Canopy (O/S)**

<table>
<thead>
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<th>Wetland Canopy (O/S)</th>
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**Field Hydrology (HYD)**

<table>
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<tr>
<th>Field Hydrology (HYD)</th>
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</thead>
</table>

**WQ Input & Treatment**

* The value of WQ is obtained by adding the TOTAL scores of Land use Category and Pretreatment category then dividing by 2

**Land use Category (LU)**

<table>
<thead>
<tr>
<th>LU Category (Score)</th>
<th>X (% of area)</th>
<th>Sub Totals</th>
</tr>
</thead>
<tbody>
<tr>
<td>Natural</td>
<td>2.5</td>
<td>100</td>
</tr>
<tr>
<td>Undeveloped</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**LU Total**

| LU Total            | 2.5 |

**PT Category**

<table>
<thead>
<tr>
<th>PT Category (Score)</th>
<th>X (% of area)</th>
<th>Sub Totals</th>
</tr>
</thead>
<tbody>
<tr>
<td>Natural</td>
<td>2.5</td>
<td>100</td>
</tr>
<tr>
<td>Undeveloped</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**PT Total**

| PT Total            | 2.5 |

**WRAP Score**

| WRAP Score          | 0.75 |

**Field Notes:**

**Wildlife Utilization (WU)**

Utilized by small and large mammals, little sign of amphibians and songbirds. There is adequate food and cover in the surrounding uplands to support large mammals.

**Wetland Canopy (O/S)**

<25% Undesirable species, wetland canopy provides habitat. Recruitment of native species was evident at the time of the survey.

**Wetland Ground Cover**

<25% Undesirable species in herbaceous layer. Cover is slightly impacted by human activities.

**Habitat Support/Buffer**

>300' buffer, with predominantly desirable species.

**Field Hydrology (HYD)**

Wetland hydrology is adequate. The plants are healthy and show no sign of water stress. There is little evidence of soil subsidence.

**WQ Input & Treatment**

(L.U) - Natural Undeveloped (PT) - Natural Undeveloped.
WETLAND RAPID ASSESSMENT PROCEDURE (WRAP)

Application Number

Project Name
North American Coal

Date
10/7/2008

Evaluator
D.K. and H.H.

Wetland Type
Field

Land Use

Description

Wildlife Utilization (WU)

2

Wetland Canopy (O/S)
1.5

Wetland Acreage

Wetland Ground Cover
1

Habitat Support Buffer

Buffer Type (Score) X (% of area) = Sub Totals

<300' 2.5 50 0.63

>300', >75% nuisance spec 1 50 0.73 1.38

Total

Field Hydrology (HYD)

2

WQ Input & Treatment *

* The value of WQ is obtained by adding the TOTAL scores of Land use Category and Pretreatment category then dividing by 2

Land use Category (LU)

LU Category (Score) X (% of area) = Sub Totals

Nat Und. 2.5 50 1.25

Planted

Pine 1.5 50 0.75

LU Total 2.00

PT Category (Score) X (% of area) = Sub Totals

Undeveloped 1.5 50 0.75

Pine Plantation

Nat Undevel. 2.5 50 1.25

PT Total 2.00

WRAP Score

0.55

Field Notes:

Wildlife Utilization (WU)
Utilized by small and large mammals, and songbirds. There is an adequate upland food source in the surrounding uplands to support large mammals.

Wetland Canopy (O/S)
Portions of the wetland were recently clear-cut and maintained as a hunting food plot in the floodplain of Chickasawhay Creek.

Wetland Ground Cover
Comprised mostly of non-native herbaceous species. Highly invasive tropical soda-apple was observed in the cleared area.

Habitat Support Buffer
50% of the wetland has a >300' buffer, with predominantly desirable species. 50% of the buffer is >300' but has >75% nuisance species (Pine Plantation & Non-Native Herbaceous Species).

Field Hydrology (HYD)
Wetland hydrology is adequate. The plants are healthy and show no sign of water stress. Swales and logging ruts are in place.

WQ Input & Treatment
(LU) - 50% Natural Undeveloped, 50% Pine Plantation (PT) - 50% Natural Undeveloped, 50% Undeveloped Planted Pine.
**Wetland Rapid Assessment Procedure (WRAP)**

<table>
<thead>
<tr>
<th>Application Number</th>
<th>Project Name</th>
<th>Date</th>
<th>Evaluator</th>
<th>Wetland Type</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Land Use</th>
<th>Description</th>
<th>Wetland Acreage</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Wildlife Utilization (WU)</th>
<th>Wetland Canopy (O/S)</th>
<th>Wetland Ground Cover</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.5</td>
<td>1</td>
<td>1.5</td>
</tr>
</tbody>
</table>

**Habitat Support Buffer**

<table>
<thead>
<tr>
<th>Buffer Type</th>
<th>(Score)</th>
<th>X (% of area)</th>
<th>Sub Totals</th>
</tr>
</thead>
<tbody>
<tr>
<td>&gt;300' w/ 75% nuisance species</td>
<td>1</td>
<td>100</td>
<td>1</td>
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<table>
<thead>
<tr>
<th>Field Hydrology (HYD)</th>
<th>WQ Input &amp; Treatment</th>
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</thead>
<tbody>
<tr>
<td>2</td>
<td>1.5</td>
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**Land use Category (LU)**

<table>
<thead>
<tr>
<th>LU Category</th>
<th>(Score)</th>
<th>X (% of area)</th>
<th>Sub Totals</th>
</tr>
</thead>
<tbody>
<tr>
<td>Planted</td>
<td>1.5</td>
<td>100</td>
<td>1.5</td>
</tr>
<tr>
<td>Pine</td>
<td></td>
<td></td>
<td></td>
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</table>

**PT Category**

<table>
<thead>
<tr>
<th>PT Category</th>
<th>(Score)</th>
<th>X (% of area)</th>
<th>Sub Totals</th>
</tr>
</thead>
<tbody>
<tr>
<td>Planted</td>
<td>1.5</td>
<td>100</td>
<td>1.5</td>
</tr>
<tr>
<td>Pine</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**WRAP Score**

0.47

**Field Notes:**

- **Wildlife Utilization (WU)**
  Utilized by small and large mammals; no evidence of utilization by songbirds, reptiles. The available upland food source is limited and somewhat sparse. Human intervention is evident through manipulation of the land for purposes of managing timber.

- **Wetland Canopy (O/S)**
  >50% Undesirable species content. Canopy is dominated by planted loblolly pine. The sub-canopy was observed to have desirable native wetland species, showing future potential if timber harvest operations ceased.

- **Wetland Ground Cover**
  Comprised mostly of herbaceous species indicative of disturbed sites.

- **Habitat Support/Buffer**
  >300' on average, consisting of >75% nuisance loblolly pine. Buffer is connected with contiguous off-site corridors and provides cover.

- **Field Hydrology (HYD)**
  Wetland hydrology is adequate. The plants are healthy and show no sign of water stress. Swales and logging ruts are in place.

- **WQ Input & Treatment**
  (LU) - Planted Pine (PT) - Planted Pine.
**WETLAND RAPID ASSESSMENT PROCEDURE (WRAP)**

**Application Number**

**Project Name**
North American Coal

**Date**
10/8/2008

**Evaluator**
D.K. and H.H.

**Wetland Type**
Bottomland Forest

**Land Use**

**Description**

**Wildlife Utilization (WU)**
1.5

**Wetland Canopy (O/S)**
2

**Wetland Acreage**

**Wetland Ground Cover**
1.5

**Habitat Support Buffer**

<table>
<thead>
<tr>
<th>Buffer Type</th>
<th>Score</th>
<th>% of Area</th>
<th>Sub Totals</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt;300'</td>
<td>1</td>
<td>50</td>
<td>0.5</td>
</tr>
<tr>
<td>NB</td>
<td>0</td>
<td>25</td>
<td>0</td>
</tr>
<tr>
<td>&lt;30'</td>
<td>1</td>
<td>25</td>
<td>0.25</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td></td>
<td><strong>0.75</strong></td>
</tr>
</tbody>
</table>

**Field Hydrology (HYD)**

**WQ Input & Treatment**

* The value of WQ is obtained by adding the TOTAL scores of Land use Category and Pretreatment category then dividing by 2

**WQ Input & Treatment**

**PT Category**

<table>
<thead>
<tr>
<th>Category</th>
<th>Score</th>
<th>% of Area</th>
<th>Sub Totals</th>
</tr>
</thead>
<tbody>
<tr>
<td>Grass swales</td>
<td>1</td>
<td>50</td>
<td>0.5</td>
</tr>
<tr>
<td>Planted pine</td>
<td>1.5</td>
<td>50</td>
<td>0.75</td>
</tr>
<tr>
<td><strong>PT Total</strong></td>
<td></td>
<td></td>
<td><strong>1.25</strong></td>
</tr>
</tbody>
</table>

**Land use Category (LU)**

<table>
<thead>
<tr>
<th>LU Category</th>
<th>Score</th>
<th>% of Area</th>
<th>Sub Totals</th>
</tr>
</thead>
<tbody>
<tr>
<td>Planted</td>
<td>1.5</td>
<td>50</td>
<td>0.75</td>
</tr>
<tr>
<td>Pine</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Improved</td>
<td>1</td>
<td>50</td>
<td>0.5</td>
</tr>
<tr>
<td>Pasture</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>LU Total</strong></td>
<td></td>
<td></td>
<td><strong>1.25</strong></td>
</tr>
</tbody>
</table>

**WRAP Score**

0.50

**Field Notes:**

**Wildlife Utilization (WU)**
Utilized by small and large mammals, reptiles, amphibians, aquatic macroinvertebrates and fishes. Frequent human disturbance is created by the paved road. There is a marginal upland food source.

**Wetland Canopy (O/S)**
<25% Undesirable species present. Native recruitment is evident and the canopy provides good habitat. No sign of disease in canopy trees.

**Wetland Ground Cover**
<25% Undesirable species. Chinese privet has been established due to human impacts to the wetland ground cover.

**Habitat Support/Buffer**
The paved road to the north provides no buffer. To the east and south the buffer is >300' on average vegetated with predominantly loblolly pine, and the western edge of the wetland has a <30' buffer.

**Field Hydrology (HYD)**
Wetland hydrology is adequate. The plants are healthy and show no sign of water stress; however, culverts and soil subsidence negatively impact the wetland.

**WQ Input & Treatment**
(I, U) - 50% Planted Pine, 50% Improved (PT) - 50% Planted Pine, 50% Grass Swales
**WRAP Score**

0.65

**Field Notes:**

**Wildlife Utilization (WU)**
Utilized by small and large mammals, reptiles, and amphibians. Minimal human disturbance and a marginal upland food source was observed.

**Wetland Canopy (O/S)**
<25% Undesirable species present. Native recruitment is evident and the canopy provides good habitat. No sign of disease in canopy trees.

**Wetland Ground Cover**
<25% Undesirable species. Cover slightly impacted by humans.

**Habitat Support/Buffer**
>300’ on average to the east, <30>300’ to the west(adjacent to road).

**Field Hydrology (HYD)**
Wetland hydrology is adequate. Soil subsidence was observed in the wetland.

**WQ Input & Treatment**
(L.U) - 25% Improved Pasture, 75% Natural Undeveloped (PT) - 75% Nat. Undeveloped, 25% Grass Swales
# WETLAND RAPID ASSESSMENT PROCEDURE (WRAP)

<table>
<thead>
<tr>
<th>Project Name</th>
<th>Date</th>
<th>Evaluator</th>
<th>Wetland Type</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Land Use Description</th>
<th>Wetland Acreage</th>
<th>Wetland Ground Cover</th>
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<tr>
<td></td>
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</tbody>
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<table>
<thead>
<tr>
<th>Wildlife Utilization (WU)</th>
<th>Wetland Canopy (O/S)</th>
<th>Wetland Ground Cover</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>0.5</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Habitat Support Buffer</th>
<th>Field Hydrology (HYD)</th>
<th>WQ Input &amp; Treatment</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1</td>
<td>1.75</td>
</tr>
</tbody>
</table>

- The value of WQ is obtained by adding the TOTAL scores of Land use Category and Pretreatment category then dividing by 2.

## Land use Category (LU)

<table>
<thead>
<tr>
<th>LU Category</th>
<th>(Score)</th>
<th>X (% of area)</th>
<th>Sub Totals</th>
</tr>
</thead>
<tbody>
<tr>
<td>Natural</td>
<td>2.5</td>
<td>50</td>
<td>1.25</td>
</tr>
<tr>
<td>undeveloped</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Improved</td>
<td>1</td>
<td>50</td>
<td>0.5</td>
</tr>
<tr>
<td>pasture</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>LU Total</td>
<td></td>
<td></td>
<td>1.75</td>
</tr>
</tbody>
</table>

## Pretreatment Category (PT)

<table>
<thead>
<tr>
<th>PT Category</th>
<th>(Score)</th>
<th>X (% of area)</th>
<th>Sub Totals</th>
</tr>
</thead>
<tbody>
<tr>
<td>Grass swales</td>
<td></td>
<td>1</td>
<td>0.5</td>
</tr>
<tr>
<td>Natural</td>
<td>2.5</td>
<td>0.5</td>
<td>1.25</td>
</tr>
<tr>
<td>undeveloped</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PT Total</td>
<td></td>
<td></td>
<td>1.75</td>
</tr>
</tbody>
</table>

## WRAP Score

0.29

---

**Field Notes:**

- **Wildlife Utilization (WU)**
  - Deer and raccoon may utilize the wetland; however, the habitat is very poor for songbirds and there is no cover and a limited upland food source.

- **Wetland Canopy (O/S)**
  - No canopy present, mechanically cleared and maintained.

- **Wetland Ground Cover**
  - Juncus effusus is the only prevalent native wetland species observed in the wetland.

- **Habitat Support Buffer**
  - 50% No Buffer (due to road and pasture) 50% Natural Undeveloped

- **Field Hydrology (HYD)**
  - A pond has been built to the north of the wetland, severly impacting hydrology.

- **WQ Input & Treatment**
  - (LU) - 50% Improved Pasture, 50% Natural Undeveloped (PT) - 50% Nat. Undeveloped, 50% Grass Swales
## WETLAND RAPID ASSESSMENT PROCEDURE (WRAP)

- **Application Number:**
- **Project Name:** North American Coal
- **Date:** 10/9/2008
- **Evaluator:** D.K. and H.H.
- **Wetland Type:** Field
- **Land Use:**
- **Description:**
- **Wetland Acreage:**
- **Wildlife Utilization (WU):** 1
- **Wetland Canopy (O/S):** 0
- **Wetland Ground Cover:** 1

### Habitat Support Buffer

<table>
<thead>
<tr>
<th>Buffer Type</th>
<th>(Score)</th>
<th>X (% of area)</th>
<th>Sub Totals</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pasture</td>
<td>0.5</td>
<td>100</td>
<td>0.5</td>
</tr>
<tr>
<td>&gt;300' but has</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>&gt;75% nuisance species</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Total: 0.5

### Land use Category (LU)

<table>
<thead>
<tr>
<th>LU Category</th>
<th>(Score)</th>
<th>X (% of area)</th>
<th>Sub Totals</th>
</tr>
</thead>
<tbody>
<tr>
<td>Improved</td>
<td>1</td>
<td>100</td>
<td>1</td>
</tr>
<tr>
<td>Pasture</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

LU Total: 1.00

### WRAP Score

0.28

### Field Notes:

- **Wildlife Utilization (WU):**
  Herbsaceous weedy cover is the only food available to wildlife. Upland food source is very sparse. The pasture is used for livestock grazing, cattle were observed in the wetland.

- **Wetland Canopy (O/S):**
  No canopy present, maintained as wet pasture.

- **Wetland Ground Cover:**
  Disturbed by humans, weedy herbsaceous species dominate the ground cover, including some non-native species.

- **Habitat Support/Buffer:**
  Pasture, >300' but has >75% non-invasive nuisance species.

- **Field Hydrology (HYD):**
  A wetland swale drains a cattle pond, hydrology is adversely affected.

- **WQ Input & Treatment:**
  (LU) - 100% Improved Pasture (PT) - 100% Grass Swales
**WETLAND RAPID ASSESSMENT PROCEDURE**

**WRAP Location**
WRAP 44

**Application Number**

**Project Name**
North American Coal

**Date**
10/9/2008

**Evaluator**
D.K. and H.H.

**Wetland Type**
Pine-Hardwood Forest

**Land Use**

**Description**

**Wildlife Utilization (WU)**
2.5

**Wetland Canopy (O/S)**
2

**Wetland Ground Cover**
2.5

**Habitat Support Buffer**

**Buffer Type (Score)**

**X** (% of area)=

Sub Totals

---

<table>
<thead>
<tr>
<th>Buffer Type</th>
<th>(Score)</th>
<th>X (% of area)=</th>
<th>Sub Totals</th>
</tr>
</thead>
<tbody>
<tr>
<td>&gt;300'</td>
<td>2.5</td>
<td>100</td>
<td>2.5</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Total 2.5</td>
</tr>
</tbody>
</table>

**Field Hydrology (HYD)**

**WQ Input & Treatment**

* The value of WQ is obtained by adding the TOTAL scores of Land use Category and Pretreatment category then dividing by 2

**WQ Input & Treatment**
2.28

**Land use Category (LU)**

**LU Category (Score)**

**X** (% of area)=

Sub Totals

---

<table>
<thead>
<tr>
<th>LU Category</th>
<th>(Score)</th>
<th>X (% of area)=</th>
<th>Sub Totals</th>
</tr>
</thead>
<tbody>
<tr>
<td>Natural</td>
<td>2.5</td>
<td>75</td>
<td>1.9</td>
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<tr>
<td>Undeveloped</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Planted Pine</td>
<td>1.5</td>
<td>25</td>
<td>0.38</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>LU Total 2.28</td>
</tr>
</tbody>
</table>

**Pretreatment Category (PT)**

**PT Category (Score)**

**X** (% of area)=

Sub Totals

---

<table>
<thead>
<tr>
<th>PT Category</th>
<th>(Score)</th>
<th>X (% of area)=</th>
<th>Sub Totals</th>
</tr>
</thead>
<tbody>
<tr>
<td>Natural</td>
<td>2.5</td>
<td>75</td>
<td>1.9</td>
</tr>
<tr>
<td>Undeveloped</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Planted Pine</td>
<td>1</td>
<td>25</td>
<td>0.38</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>PT Total 2.28</td>
</tr>
</tbody>
</table>

**WRAP Score**
0.82

**Field Notes:**

**Wildlife Utilization (WU)**
Utilized by small and large mammals, songbirds. Adjacent upland food source and available cover are abundant for wildlife. Minimal human intervention was observed.

**Wetland Canopy (O/S)**
<25% Undesirable species, canopy provides habitat and shows no sign of stress or disease.

**Wetland Ground Cover**
<10% Undesirable species, no disturbance to the ground cover.

**Habitat Support/Buffer**
>300' in width. Connected to wildlife corridor, and is adjacent to the Okatibbee Wildlife Management Area.

**Field Hydrology (HYD)**
Wetland has healthy, non-stressed plants and exhibits a natural hydroperiod. No soil subsidence was observed.

**WQ Input & Treatment**
(LU) - 75% Natural Undeveloped, 25% Planted Pine (PT) - 75% Natural Undeveloped, 25% Planted Pine
WETLAND RAPID ASSESSMENT PROCEDURE

WRAP Location
WRAP 43

Application Number
Project Name
North American Coal

Date
Evaluator
10/9/2008
D.K. and H.I.

Wetland Type
Bottomland Forest

Land Use
Description

Wildlife Utilization (WU)

2.5

Wetland Canopy (O/S)

2

Wetland Ground Cover

2.5

Habitat Support Buffer

Buffer Type (Score) X (% of area)= Sub Totals

>300' 2.5 100 2.5

Total 2.5

Field Hydrology (HYD)

2.5

WQ Input & Treatment *

2.5

* The value of WQ is obtained by adding the TOTAL scores of Land use Category and Pretreatment category then dividing by 2

Land use Category (LU)

LU Category (Score) X (% of area)= Sub Totals

Natural 2.5 100 2.5

Undeveloped

LU Total 2.50

Pretreatment Category (PT)

PT Category (Score) X (% of area)= Sub Totals

Natural 2.5 100 2.5

Undeveloped

PT Total 2.50

WRAP Score

0.81

Field Notes:

Wildlife Utilization (WU)
Utilized by small and large mammals, songbirds. Adjacent upland food source and available cover are abundant for wildlife. Minimal human intervention was observed.

Wetland Canopy (O/S)
<25% Undesirable species, canopy provides habitat and shows no sign of stress or disease.

Wetland Ground Cover
<10% Undesirable species, no disturbance to the ground cover. Good species diversity was observed.

Habitat Support/Buffer
>300' in width. Connected to wildlife corridors, and provides food and cover to wildlife.

Field Hydrology (HYD)
Wetland has healthy, non-stressed plants and exhibits a natural hydroperiod. Soil subsidence was observed.

WQ Input & Treatment
(LU) - 100% Natural Undeveloped (PT) - 100% Natural Undeveloped
**WETLAND RAPID ASSESSMENT PROCEDURE** (WRAP)

<table>
<thead>
<tr>
<th>Application Number</th>
<th>Project Name</th>
<th>Date</th>
<th>Evaluator</th>
<th>Wetland Type</th>
<th>Wetland Acreage</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Land Use</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
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</table>

<table>
<thead>
<tr>
<th>Wildlife Utilization (WU)</th>
<th>2.5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wetland Canopy (O/S)</td>
<td>2.5</td>
</tr>
<tr>
<td>Wetland Ground Cover</td>
<td>2.5</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Habitat Support Buffer</th>
<th>Field Hydrology (HYD)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Buffer Type</td>
<td>(Score)</td>
</tr>
<tr>
<td>300' &lt; 300'</td>
<td>1</td>
</tr>
<tr>
<td>300'</td>
<td>2.5</td>
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<tr>
<td><strong>Total</strong></td>
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</table>

<table>
<thead>
<tr>
<th>Land use Category (LU)</th>
<th>Sub Totals</th>
</tr>
</thead>
<tbody>
<tr>
<td>Improved</td>
<td>1</td>
</tr>
<tr>
<td>pasture</td>
<td></td>
</tr>
<tr>
<td>Natural</td>
<td></td>
</tr>
<tr>
<td>undeveloped</td>
<td>2.5</td>
</tr>
<tr>
<td><strong>LU Total</strong></td>
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<table>
<thead>
<tr>
<th>Pretreatment Category (PT)</th>
<th>Sub Totals</th>
</tr>
</thead>
<tbody>
<tr>
<td>Improved</td>
<td>1</td>
</tr>
<tr>
<td>pasture</td>
<td></td>
</tr>
<tr>
<td>Natural</td>
<td></td>
</tr>
<tr>
<td>undeveloped</td>
<td>2.5</td>
</tr>
<tr>
<td><strong>PT Total</strong></td>
<td><strong>1.38</strong></td>
</tr>
</tbody>
</table>

**WRAP Score**

0.71

**Field Notes:**

**Wildlife Utilization (WU)**
Utilized by small and large mammals, songbirds, fishes, amphibians and reptiles. Adjacent upland food source and available cover are abundant for wildlife. Minimal human intervention was observed.

**Wetland Canopy (O/S)**
<25% Undesirable species, canopy provides habitat and shows no sign of stress or disease.

**Wetland Ground Cover**
<25% Undesirable species, no disturbance to the ground cover. Good species diversity was observed.

**Habitat Support/Buffer**
50% is >300' in width, 50% is >30<300' with >75% undesirable species.

**Field Hydrology (HYD)**
Ponded area acts as a natural sediment catch, no human controlled elevation.

**WQ Input & Treatment**
(LU) - 25% Natural Undeveloped, 75% Improved Pasture (PT) - 25% Natural Undeveloped, 75% Improved Pasture
### Wetland Rapid Assessment Procedure

**Application Number**: North American Coal 7/25/08

**Evaluator**: J. Everett

**Wetland Type**: Bottomland Forest

#### Wildlife Utilization (WU)

<table>
<thead>
<tr>
<th>Buffer type</th>
<th>(Score) X</th>
<th>(% of area)</th>
<th>Sub Totals</th>
</tr>
</thead>
<tbody>
<tr>
<td>&gt;300'</td>
<td>2</td>
<td>100</td>
<td>2.5</td>
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</table>

**TOTAL**: 2.5

#### Wetland Canopy (O/S)

<table>
<thead>
<tr>
<th>Habitat Support/Buffer</th>
<th>Wetland Canopy (O/S)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2.5</td>
</tr>
</tbody>
</table>

#### Wetland Ground Cover (GC)

<table>
<thead>
<tr>
<th>Wetland Ground Cover (GC)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.5</td>
</tr>
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</table>

#### Field Hydrology (HYD)

<table>
<thead>
<tr>
<th>Field Hydrology (HYD)</th>
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</thead>
<tbody>
<tr>
<td>2.5</td>
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</tbody>
</table>

#### WQ Input & Treatment (WQ)

<table>
<thead>
<tr>
<th>WQ Input &amp; Treatment (WQ)</th>
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</thead>
<tbody>
<tr>
<td>2.5</td>
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</tbody>
</table>

#### Land Use Category (LU)

<table>
<thead>
<tr>
<th>Land use Category (LU)</th>
<th>(Score) X</th>
<th>(% of area)</th>
<th>Sub Totals</th>
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</thead>
<tbody>
<tr>
<td>Natural</td>
<td>2.5</td>
<td>100%</td>
<td>2.5</td>
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</table>

**LU TOTAL**: 2.5

#### Pretreatment Category (PT)

<table>
<thead>
<tr>
<th>Pretreatment Category (PT)</th>
<th>(Score) X</th>
<th>(% of area)</th>
<th>Sub Totals</th>
</tr>
</thead>
<tbody>
<tr>
<td>Natural</td>
<td>2.5</td>
<td>100%</td>
<td>2.5</td>
</tr>
</tbody>
</table>

**PT TOTAL**: 2.5

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**WRAP Score**: .83

---

**Wildlife Utilization (WU) 2.5**
- Evidence of utilization by large mammals, aquatic macro-invertebrates, reptiles, amphibians and birds was observed.
- Negligible evidence of human disturbance observed.
- There is adequate adjacent upland food source to support wildlife.

**Wetland Canopy (O/S) 2.5**
- <10% undesirable species composition of canopy species, no exotics were observed.
- A healthy canopy was observed, and it provides good habitat to wildlife.
- Strong evidence of natural recruitment of native species was observed.

**Wetland Ground Cover (GC) 2.5**
<10% undesirable plant species.

**Habitat Support/Buffer 2.5**
>300' average wetland buffer. Wetland is connected to an offsite corridor.

**Field Hydrology (HYD) 2.5**
- Hydrology adequate to maintain wetland system.
- Plants are healthy and exhibit no water stress.

**WQ Input & Treatment (WQ 2.5)**
- LU- Natural Undeveloped Land
- PT- Natural Undeveloped Land
**Wetland Rapid Assessment Procedure**

<table>
<thead>
<tr>
<th>Application Number</th>
<th>Project Name</th>
<th>Date</th>
<th>Evaluator</th>
<th>Wetland Type</th>
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<tbody>
<tr>
<td></td>
<td>North American Coal</td>
<td>7/25/08</td>
<td>J. Everett</td>
<td>Shrubland</td>
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</table>

<table>
<thead>
<tr>
<th>Land Use</th>
<th>FLUCSS Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pine Plantation</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Wildlife Utilization (WU)</th>
<th>Wetland Canopy (O/S)</th>
<th>Wetland Ground Cover (GC)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.0</td>
<td>0.5</td>
<td>1.0</td>
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<table>
<thead>
<tr>
<th>Buffer type</th>
<th>Habitat Support/Buffer</th>
<th>(Score) X</th>
<th>(% of area)</th>
<th>Sub Totals</th>
</tr>
</thead>
<tbody>
<tr>
<td>&gt;300&quot;, comprised of &gt;75% nuisance species</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Field Hydrology (HYD)</th>
<th>WQ Input &amp; Treatment (WQ)*</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.5</td>
<td>1.5</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Pretreatment Category (PT)</th>
<th>Pretreatment Category (Score) X</th>
<th>(% of area)</th>
<th>Sub Totals</th>
</tr>
</thead>
<tbody>
<tr>
<td>Grass swales</td>
<td>1.5</td>
<td>100%</td>
<td>1.5</td>
</tr>
</tbody>
</table>

**WRAP Score**

0.42

**Wildlife Utilization (WU) 1**

Small and medium sized mammals utilize the wetland. Frequent human disturbance occurs due to the routine maintenance of the field.

**Wetland Canopy (O/S) 0.5**

- subject to recent clear-cutting

**Wetland Ground Cover (GC) 1**

- Approximately 50% undesirable species
- Recently clear-cut

**Habitat Support/Buffer 1**

>300’ average buffer, consisting of >75% nuisance species (loblolly pine)

**Field Hydrology (HYD) 2.5**

Wetland exhibits natural hydroperiod. Plants are healthy, and there is little evidence of soil subsidence into the wetland.

**WQ Input & Treatment (WQ) 1.5**

Land use – logging operation
H₂O Treatment – grass swales
**Wetland Rapid Assessment Procedure (WRAP)**

<table>
<thead>
<tr>
<th>Wetland Type</th>
<th>Hardwood-Pine Forest</th>
</tr>
</thead>
<tbody>
<tr>
<td>Application Number</td>
<td>Project Name</td>
</tr>
<tr>
<td>North American Coal</td>
<td>7/25/08</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Land Use</th>
<th>buffer type</th>
<th>Habitat Support/Buffer</th>
<th>WQ Input &amp; Treatment (WQ)*</th>
</tr>
</thead>
<tbody>
<tr>
<td>FLUCS Code</td>
<td>Description:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Wildlife Utilization (WU)</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Wetland Canopy (O/S)</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Wetland Ground Cover (GC)</td>
<td>2</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Field Hydrology (HYD)</th>
<th>WQ Input &amp; Treatment (WQ)*</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.5</td>
<td>1.5</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Land use Category</th>
<th>(Score)</th>
<th>(% of area)</th>
<th>~Sub Totals</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pine Plantation</td>
<td>1.5</td>
<td>100%</td>
<td>1.5</td>
</tr>
<tr>
<td>(LI) TOTAL</td>
<td>1.5</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**WRAP Score**

0.45

**Wildlife Utilization (WU) 1**
- Sparse upland food source.
- Recently thinned, leaving little cover for wildlife.

**Wetland Canopy (O/S) 1**
- Immature canopy, but has potential.
- >50% Undesirable species composition.

**Wetland Ground Cover (GC) 2**
<25% undesirable species composition.

**Habitat Support/Buffer 1**
>300' buffer on average, but consisting of >75% nuisance species (lobolly pine)

**Field Hydrology (HYD) 1.5**
- Rutting by logging equipment had adversely affected hydrology.
- Adequate hydroperiod

**WQ Input & Treatment (WQ) 1**
- Land Use: 100% Pine Plantation
- WQ & Pretreatment: Undeveloped Pine Plantation
### Wetland Rapid Assessment Procedure

**Application Number: North American Coal**
**Project Name: North American Coal**
**Date: 06/02/08**

**Evaluator: J. Everett**

**Wetland Type: Field**

### Wildlife Utilization (WU) 0.5
- **Habitat Support/Buffer:** Greater than 300 ft average width, but buffer is improved pasture land. Very little forest areas to provide food or habitat for animals. Connected to offsite corridor.
- **Field Hydrology (HYD):** Wetland hydroperiod adequate, although conditions possibly interfering with or influencing the hydropereiod such as ditches.
- **WQ Input & Treatment (WQ):** 100% Improved Pasture. Grass swales only.

**Description:** Very minimal wildlife utilization. Only small rodents (squirrels) and birds (red-winged black bird) observed.

**Wetland Canopy (OS):** No wetland canopy or shrubbery.

**Wetland Ground Cover (GC):** Less than 10% nuisance or exotic plant species. Large number of obligate wetland species. Wetland is grazed by cattle.

### Land Use Category (LJ)

<table>
<thead>
<tr>
<th>Land use Category</th>
<th>Score X</th>
<th>% of area</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Improved Pasture</td>
<td>1</td>
<td>100%</td>
<td>1</td>
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</tbody>
</table>

**WRAP Score:** 0.39

---

### Wetland Canopy (OS) 0

### Wetland Ground Cover (GC) 2.5

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### Habitat Support/Buffer 1.0

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### Field Hydrology (HYD) 2.0

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### WQ Input & Treatment (WQ) 1.0
# Wetland Rapid Assessment Procedure

**Wetland Type:** Shrub Land  

**Application Number:**  

**Project Name:** North American Coal  

**Evaluator:** J. Everett  

**Date:** 6/5/08  

## Wildlife Utilization (WU) 2.0

Evidence of small and large mammals and reptiles.  
No evidence of aquatic life.  
Adequate amount of roosting and forage.  
Human disturbance appears to be minimal.

## Wetland Canopy (O/S) 2.5

Canopy is mature providing abundant source for roosting and nesting.  
>10% exotic species recorded.  
Shrub density is less than 20%.  
Few snags or den trees.

## Wetland Ground Cover (GC) 2.0

Ground cover is sparse, but cover is comprised of <25% undesirable species. Covers is slightly impacted by humans.

## Habitat Support/Buffer 1.0

Upland buffer is greater than 300' wide on average and consists of 90% *Pinus taeda* (Loblolly pine). Portions connected to wildlife corridor.

## Field Hydrology (HYD) 2.0

Plants appear to be healthy and do not exhibit stress associated with an unnatural hydroperiod.  
No ditches or swales.  
Soil subsidence/siltation is evident.

## WQ Input & Treatment (WQ)* 1.5

**LU - Row Planted Pines** – 100%  
**PT - Row Planted Pines** – 100%

---

### Table: Habitat Support/Buffer

<table>
<thead>
<tr>
<th>Buffer type</th>
<th>Habitat Support/Buffer</th>
<th>(Score) X</th>
<th>(% of area)</th>
<th>=Sub Totals</th>
</tr>
</thead>
<tbody>
<tr>
<td>&gt;300' average width, but consisting of &gt;75 nuisance species</td>
<td>X</td>
<td>1</td>
<td>100</td>
<td>1</td>
</tr>
</tbody>
</table>

**TOTAL:** 1.0
### Wetland Rapid Assessment Procedure

**Application Number:**

**Project Name:** North American Coal

**Date:** 06/03/08

**Evaluator:** J. Everett

**Land Use:**

- **FLUCSS Code:**

**Wildlife Utilization (WU):**

<table>
<thead>
<tr>
<th>Buffer type</th>
<th>&lt;300'</th>
<th>&gt;300'</th>
</tr>
</thead>
<tbody>
<tr>
<td>(Score) X</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>(% of area)</td>
<td>.50</td>
<td>.50</td>
</tr>
<tr>
<td>Sub Totals</td>
<td>1.5</td>
<td>2.0</td>
</tr>
</tbody>
</table>

**Wildlife Utilization (WU) Score:** 2.5

- Evidence of large mammals, reptiles, and fish. Adequate food source, habitat and roosting. Macro-invertebrates and small forage fish species observed in standing water.

**Wetland Canopy (OS):**


**Wetland Ground Cover (GC):**

- Wetland ground cover is desirable with >10% <25% undesirable species. Exotic species present.

**Habitat Support/Buffer:**

- 50% <300' next to small farm that is worked daily. Exotics common. Connected to offsite wildlife corridor. 50% >300' connected to offsite corridor with abundant upland habitat and food source. Exotics scattered throughout.

**Field Hydrology (HYD):**

- Wetland hydrology adequately supports wetland function. Siltation/disturbance evident, but overall impact minimal.

**WQ Input & Treatment (WQ):**

<table>
<thead>
<tr>
<th></th>
<th>LU</th>
<th>PT</th>
</tr>
</thead>
<tbody>
<tr>
<td>50% Natural undeveloped - 2.5</td>
<td>50% Undeveloped Pine Plantation - 1.0</td>
<td></td>
</tr>
<tr>
<td>50% Undeveloped Pine Plantation - 1.5</td>
<td>50% Natural undeveloped - 2.5</td>
<td></td>
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</tbody>
</table>

**WRAP Score:** 0.69
Wetland Rapid Assessment Procedure

Application Number: 
Project Name: North American Coal 
Date: 06/05/08 
Evaluator: J. Everett 

Land Use: Pine Plantation 
FLUCSS Code: 

Wildlife Utilization (WU) 1.0

<table>
<thead>
<tr>
<th>Buffer type</th>
<th>Habitat Support/Buffer</th>
<th>% of area</th>
<th>Sub Totals</th>
</tr>
</thead>
<tbody>
<tr>
<td>&gt;300' average width, but consisting of &gt;75% nuisance species</td>
<td>1</td>
<td>100</td>
<td>1</td>
</tr>
<tr>
<td>TOTAL</td>
<td></td>
<td></td>
<td>1</td>
</tr>
</tbody>
</table>

Wildlife Utilization (WU) 1.0
Minimal evidence of wildlife utilization, little habitat for birds, mammals, and reptiles, uplands consists of young row planted pines.

Wetland Canopy (O/S) 0.5
No overstory in head of wetland, only young 6 feet tall Pinus taeda (Loblolly) and different species of grasses. Subject to recent clear cutting with little evidence of native canopy regeneration.

Wetland Ground Cover (GC) 2.5
Less than 10% nuisance species, no recorded exotics, ground cover impacted from pine planting (shade, bedding).

Field Hydrology (HYD) 0.5
>300' uplands surrounding wetland and consists of row planted pines. Wetlands further down stream are naturally forested and connected to offsite corridor. Pines do not provide desirable habitat or adequate food source for wildlife.

Field Hydrology (HYD) 0.5
Wetland hydrology altered due to establishment of monoculture pine plantation. Bedding/rows have altered natural topography and hydroperiod. Has allowed encroachment of upland species.

WQ Input & Treatment (WQ) 1.5
100% planted pine plantation in buffer zone. 
Pine plantation alters pH of runoff and surface flow characteristics.

WRAP Score 0.39

LAND USE CATEGORY (LU)

<table>
<thead>
<tr>
<th>Land use Category (Score) X % of area</th>
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</tr>
</thead>
<tbody>
<tr>
<td>Pine Plantation</td>
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PRETREATMENT CATEGORY (PT)

<table>
<thead>
<tr>
<th>Pretreatment Category (Score) X % of area</th>
<th>=Sub Totals</th>
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</thead>
<tbody>
<tr>
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<td>1.5 100 1.5</td>
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<tr>
<td>Pine Plantation</td>
<td></td>
</tr>
</tbody>
</table>

LU TOTAL 1.5

PT TOTAL 1.5