

***Deepwater Horizon* (MC 252) Oil Spill Natural Resource Damage Assessment and Restoration**

Data Verification and Validation Report For:

Secretive Marsh Bird Mortality: Modification 1, Marsh Bird Helicopter Survey (Bird Study #3)

I. Purpose

As part of the Natural Resource Damage Assessment (NRDA) for the *Deepwater Horizon*/Mississippi Canyon 252 Oil Spill, the Trustees implemented the “Work Plan for Estimating Secretive Marsh Bird Mortality, *Deepwater Horizon* (MSC 252) Oil Spill NRDA Bird Study #3, Modification #1: Marsh Bird Helicopter Survey Methodology” (herein referred to as “Bird Study #3”).¹ The goal of this plan was to assess the potential effects of the *Deepwater Horizon* Mississippi Canyon 252 oil spill to secretive marsh birds (species that live in dense marsh vegetation and are difficult to observe). The Trustees’ verification and validation of the resulting data was facilitated by the DOI Data Verification/Validation Contractor (Industrial Economics, Incorporated, Cambridge, Massachusetts). This document represents the formal explanation of all revisions and clarifications made to data records pertaining to the *Secretive Marsh Bird Helicopter Survey* dataset, and the resolution of apparent discrepancies and appropriate supplemental sources of information, such as study planning documents.

II. Overview of Data

The main objectives of Bird Study #3 included (1) quantifying abundances and densities of secretive marsh bird species in un-oiled representative habitats; (2) quantifying the proportion of live oiled and live un-oiled birds in representative habitats through active capture of live individual birds; (3) estimating representative marsh bird mortality rates using radio telemetry; and (4) quantifying fiddler crab burrow densities to supplement our understanding of marsh-specific rail densities. A modification was made to the Bird Study #3 work plan to include helicopter surveys of the Louisiana marshes to collect data on oiling rates of secretive marsh birds. This additional methodology (herein referred to as “Helicopter Survey”) has the specific objective of determining oiled and un-oiled marsh bird densities by visual observation from a helicopter (no capture). This report pertains to the data collected as part of Modification #1, Helicopter Survey. Data collected as part of the other objectives are addressed in separate verification and validation reports.²

Helicopter surveys were performed throughout coastal Louisiana from August 24 through September 30, 2010. Data collection and analysis was completed by staff from U.S. Army Corps of Engineers Engineering Research and Development Center (ERDC), the U.S. Fish and Wildlife Service (USFWS) the U.S. Geological Survey (USGS), and the Louisiana Department of Wildlife and Fisheries (LDWF). Helicopters contained three U.S. Army Automated Route Reconnaissance Kits (ARRKs) which included a system box with many components allowing the systems to aggregate a 180-degree view at a range of 30 meters, as well as record altitude, temperature, ground speed, location, time, and the audio stream of visual observations made by on-board biologists and technicians. Voice recordings were made of birds

¹Available at: <https://pub-dwhdatadiver.orr.noaa.gov/dwh-ar-documents/787/DWH-AR0034028.pdf>, <https://pub-dwhdatadiver.orr.noaa.gov/dwh-ar-documents/787/DWH-AR0216008.pdf>, LOSDMS ID #4.

² See Data Verification and Validation Reports for: *Secretive Marsh Bird Callback Survey (Bird Study #3)*, *Fiddler Crab Burrow Count (Bird Study #3)*, and *Avian Capture and Assessment Data; Avian Capture, Avian Status Assessment, and Avian Lab Sample (Bird Studies #3, 4, and 5)*.

observed within 100 meters of each transect. The methodology used for these surveys was similar to one developed by the USFWS which used ultra low-level surveys to survey secretive marsh birds in a previous oil spill emergency response.

The helicopters flew strip transects with start points chosen randomly. Transect lines were spaced two nautical miles apart and flown in parallel. Three types of transects were flown, differentiated by habitat type:

1. Interior Marsh Transects (IMT): total IMT width of 200 meters (buffered centerline by 100 meters on either side).
2. Shoreline Transect (ST): the centerline of the transect was 30 meters inland from the land-water interface, with a total ST width of 130 meters (buffered transect centerline by 30 meters on the water side and 100 meters on the land side).
3. Terrace Transects (TT) (manmade): total TT width of 30 meters, though many were narrower than this (buffered centerline by 15 meters on either side).

Later, a fourth habitat type, Barrier Island, was used to define the STs and TTs which were flown on Barrier Islands.

III. Data Validation Process

As noted above, this report pertains to the validation of data collected as part of Bird Study #3, Modification #1, *Secretive Marsh Bird Helicopter Survey* dataset. Associated photographs are not undergoing validation at this time and are not addressed in this report. Since data were collected using the ARRK system and voice recordings, there are no hardcopy datasheets associated with this dataset. Hence, this dataset was validated only and not verified against datasheets.³

During helicopter surveys, wildlife biologist observers (LDWF, USFWS, or USGS) recorded observations into the ARRK system. Post-flight, the project interagency technical analysis team (LDWF, USFWS, USGS, and contractor staff) created the “Primary Data Processing” dataset using direct outputs from the ARRK system and survey plot, point, video, and voice-recorded data. After primary data processing was complete, the interagency analysis team compared values to original observations and entries, edited the “Comments” field, reviewed audio and video recordings collected by the ARRK system and completed holistic checks to identify duplicate records or other inconsistencies. This secondary review resulted in the creation of the “Secondary Data Processing” dataset, which supplants the “Primary Data Processing” dataset. After data processing was complete, the DOI Data Verification/Validation Contractor began an independent validation process on the “Secondary Data Processing” dataset pursuant to the DOI procedures, focusing on critical data fields. A list of critical data fields identified by DOI and fields not validated at this time is provided in Appendix A. Data values were also compared to the

³ For the purposes of this data verification and validation report, the following definitions are used: Data ‘verification’ is the review that occurs to ensure that data in the electronic dataset is identical to the data on original datasheets and/or raw GPS data, with the exception of modifications to follow the data entry rules (i.e., data transcription has been performed 100 percent correctly and all data entry rules are followed). Data ‘validation’ is the review conducted to ensure that original datasheets or tabulated data contain correct/appropriate data (e.g., allows for filling in missing data fields, or correcting an obviously erroneous entry). These definitions are consistent with existing guidance for the case (*U.S. Department of the Interior Deepwater Horizon Natural Resource Damage Assessment Procedures for Cooperative Data Verification and Validation*, November 2013).

standard data formats in Appendix B; these formats ensure consistency in the dataset as well as across all datasets collected as part of the *Deepwater Horizon*/Mississippi Canyon 252 NRDA.

As part of the validation process, a data dictionary was developed, which includes definitions of all data fields in the electronic dataset. The data dictionary is provided in Appendix C.

Table 1 below shows which fields were included in the primary dataset, and which were added by the interagency analysis team to the secondary dataset.

TABLE 1. FIELDS PRESENT IN THE PRIMARY AND SECONDARY DATASET VERSIONS

FIELDS PRESENT IN THE PRIMARY DATASET	FIELDS ADDED TO THE SECONDARY DATASET DURING PROCESSING
FormID	Habitat
Date	Observer
Species Name	ARRK Capture
Species Code	ARRK First Capture Camera
Count	ARRK Second/Third Capture Camera
MGRS	Oiling Degree
Latitude	ARRK Segment Distance (km)
Longitude	Mission Time
State	Mission
Flag	Route
Comments	Actual Time
--	Delete from Primary Processed Data
--	Need for Deletion
--	Original Scan Form Name

The DOI Data Verification/Validation Contractor validated 100 percent of critical data fields, reviewing individual values to ensure consistency with supplemental information. For every critical data field, records were evaluated according to the Validation Rules in Appendix C. In addition to validating critical data fields, the DOI Data Verification/Validation Contractor undertook a holistic review of the dataset to ensure overall consistency and completeness which included addressing blank or null cells in all data fields. All changes made during validation and other clarifying validation notes are documented in the “Validation Notes” field in the electronic dataset. This field was added at the beginning of the validation process and includes a description of the change made, the name of the person that made the change, and the date that the change was made. A “Qualifier” field was also added during validation.

Additional details on changes made during validation of the *Secretive Marsh Bird Helicopter Survey* dataset are provided below.

IV. Data Validation Changes

Supplementary information relied upon for data validation efforts include the following:

1. Work Plan for Estimating Secretive Marsh Bird Mortality, *Deepwater Horizon* (MSC 252) Oil Spill, NRDA Bird Study #3 (Cooper et. al., June 7 2010).

2. Work Plan for Estimating Secretive Marsh Bird Mortality, *Deepwater Horizon* (MSC 252) Oil Spill, NRDA Bird Study #3 : Modification #1 : Marsh Bird Helicopter Survey Methodology (Cooper et. al., August 11 2010).
3. *Deepwater Horizon* Natural Resource Damage Assessment: Helicopter Survey of Secretive marsh Birds in Coastal Louisiana DRAFT report (Jeske, Clinton W., USGS, 2012).

Changes made to records during validation are described below.

- The “Other Species” field contained only two entries of “Dark Ibis” and all other values were “N/A”. As such, this field was combined into the “Species Name” field and the “Other Species” field was removed from the dataset. “Dark Ibis” was tabulated in the “Species Name” field as “Ibis; Unidentified”.
- The “Mission” field included information on the Mission and Route and, for clarity and to be consistent with pre-existing transect mapping data, the field was split up into two fields: “Mission” and “Route”.
- The following fields were removed from the dataset since these fields included only notes from data entry personnel.
 - “Delete from Primary Processed Data”
 - “Need for Deletion”
- The following fields were removed from the dataset because they were no longer applicable:
 - “Submission Time”
 - “Last Modified Time”
 - “Original Scan Form Name”

Several validation steps were completed to confirm location information in the electronic dataset, as described below.

- An online tool was used to check a subset of Military Grid Reference System (“MGRS” field) coordinates against the “Latitude” and “Longitude” fields and all values were consistent.
- The coordinate information included in the dataset was mapped using ArcGIS software to confirm the following:
 - All records mapped within the study area of the marshes and shorelines of Louisiana.
 - Records grouped by various fields (habitat, mission, date, etc.) all map close together geographically.
- A pre-existing file of transects was used to confirm the following:
 - Each observation falls on a transect.
 - The “Date”, “Mission”, and “Route” of each observation are consistent with that of the nearest transect.

Inconsistencies identified during mapping are listed below.

- Values in the “Mission” field for most records were consistent with the mission number of the closest mapped transect. 247 records were inconsistent; values for these records were changed to match the mapped transect.
- Values in the “Route” field for most records were consistent with the mission value of the closest mapped transect. 955 records were inconsistent; values for these records were changed to match the mapped transect.
- Values in the “ARRK Segment Distance (km)” field for most records is less than the transect length of the closest mapped transect. For 161 records across four days, this is not true and these

records are qualified in the dataset as indicated below. For these records, the “ARRK Segment Distance (km)” was measured for the specific transect on many occasions; and most of these values exceed the transect length. Thus, it is likely that there is an error in the transect length. An exception is record with “FormID” “6391” in which the “ARRK Segment Distance (km)” value of 340 km exceeds the transect length by over 300 km and exceeds the next greatest “ARRK Segment Distance (km)” value by over 200 km.

During validation, the following records were qualified:

- 161 records were qualified with “Q - ARRK Segment Distance (km) greater than transect length calculated during mapping”.

Appendix A. Critical Data Fields for Data Entry, Verification, and Validation and Fields Not Verified or Validated for Bird Study #3, *Secretive Marsh Bird Helicopter Survey* dataset

The suite of data fields in this dataset that were the focus of the validation process are as follows:

- “Date”
- “Species Name”
- “Species Code”
- “Count”
- “MGRS”
- “Latitude”
- “Longitude”
- “State”
- “Habitat”
- “Mission”
- “ARRK Capture”
- “ARRK First Capture Camera”
- “ARRK Second/Third Capture Camera”
- “ARRK Segment Distance (KM)”

Data fields present in the electronic dataset that are not validated at this time include:

- “FormID”
- “Mission Time”
- “Actual Time”
- “Flag”
- “Observer”
- “Comments”

Appendix B. Standard Data Formats for Bird Study #3, Secretive Marsh Bird Helicopter Survey dataset

The standard data formats below are described in the *U.S. Department of the Interior Deepwater Horizon Natural Resource Damage Assessment Procedures for Cooperative Data Verification and Validation* and were developed to ensure consistency both within and across datasets collected as part of the Deepwater Horizon NRDA.

Field-Specific Data Formatting Rules

1. “Date”: enter as m/d/yyyy.
2. “State”: enter the applicable two letter state code that corresponds to the transect location.
3. “Mission”: enter numeric identifier of mission.
4. “Route”: enter alphabetical identifier of route.
5. “Mission Time”: Enter as hh:mm:ss.
6. “Actual Time”: enter as hh:mm:ss.
7. “Latitude”: enter in decimal degrees to 5 decimal places.
8. “Longitude”: enter in decimal degrees to 5 decimal places.
9. “ARRK Segment Distance”: enter numeric distance to two decimal places (in kilometers).
10. “Species Name”: enter the full common name of the applicable species.
11. “Species Code”: enter the alphabetical code which applies to the name of the applicable species.
12. “Count”: enter the count in numeric form, should be in whole numbers.

Appendix C. Data Dictionary for Bird Study #3, Secretive Marsh Bird Helicopter Survey dataset

Data field definitions are listed in Table C-1.

TABLE C-1. HELICOPTER SURVEY DATA FIELD DEFINITIONS

FIELD NAME	DEFINITION
FormID	Unique record ID number.
Date	Date that survey was conducted.
State	The state in which the survey was performed.
Mission	Helicopter flight ID (numerical; "1", "2", or "3").
Route	Helicopter flight route ID (alphabetical; "a", "b", "c", "d", "e", or "f"). There are multiple routes for each mission.
Mission Time	Time of bird detection (from the start of the helicopter mission) recorded as hh:mm:ss.
Actual Time	Time of observation, in 24-hour format, hh:mm:ss.
Latitude	Latitude coordinate for observation in decimal degrees format.
Longitude	Longitude coordinate for observation in decimal degrees format.
ARRK Segment Distance (km)	Distance into the mission (km) that the bird(s) was observed.
Species Name	Common name for the species observed.
Species Code	American Ornithology Union code for the species observed.
Count	Number of individual birds of the particular species observed.
MGRS	Military Grid Reference System (MGRS), which is the geocoordinate standard used by NATO militaries for locating a point on the earth.
Flag	Text field.
Habitat	Habitat type in which the bird(s) were observed: "Shoreline", "Interior Marsh" or "Not Evaluated".
Observer	Name of person(s) that conducted the observations.
ARRK Capture	"Yes" or "No" field, indicates if bird was captured by on-board cameras.
ARRK First Capture Camera	Camera position for the first recorded (video-taped) bird observation: "Front", "Right", "Left", "All", "Not Captured in Camera", "Not Evaluated", or some combination.
ARRK Second/Third Capture Camera	Camera position for subsequent recorded (video-taped) bird observation: "Front", "Right", "Left", "All", "Not Captured in Camera", "Not Spotted in Another Camera", "Not Evaluated", or some combination.
Oiling Degree	The oiling level of the bird surveyed: "Not Visibly Oiled", "Trace", "Light", "Moderate", "Heavy", "Undetermined", or "Not Evaluated".
Comments	Record-specific comments related to the observation.
Validation Notes	Field added during validation to document validation changes made by the DOI Data Verification/Validation Contractor; includes a description of the change made, the name of the person that made the change, and the date the change was made.
Qualifier	Field added during data validation to document any records with special considerations; for qualified records, this field contains a short explanation of the qualifier.
Validation Status	Field added during data validation to document the status of validation (e.g., "Validated" or "Unvalidated").

Appendix D. Validation Rules for Bird Study #3, Secretive Marsh Bird Helicopter Survey dataset

During validation, the DOI Data Verification/Validation Contractor confirmed the following.

1. Fill in blank cells or cells with incomplete information with the appropriate data as possible using available supplementary information.
2. Fill in blank or crossed out cells that cannot or should not be filled in with data with “N/A” for all fields as appropriate.
3. Fill in blank or crossed out cells that should or could have had data entered in them with “N/D” for all fields as appropriate.
4. Fill in any remaining blank records with other terminology (such as “None”) as appropriate.

General Validation Rules

5. Confirm “Latitude” and “Longitude” values are within the study area within Louisiana marshes and along the Louisiana coast.
6. Confirm “Species Name” entries are reasonable for the study area.
7. Confirm “ARRK Segment Distance (km)” values are in kilometers and less than the distance associated with the mission transect.
8. Validate “Mission” and “Route” using pre-existing transect file by ensuring all mission and route ID’s are consistent with the transects in the file.

Field-specific Validation Rules

1. “Date”: entries should be within August and September of 2010.
2. “State”: entries should be limited “LA”.
3. “Actual Time”: entries should be between 05:30 and 20:30.
4. “Latitude”: entries should be between 24 and 31.
5. “Longitude”: entries should be between -98 and -80.
6. “ARRK Capture”: entries should be limited to “Yes”, “No”, or “Not Evaluated”.
7. “Oiling Degree”: entries should be limited to standard description of oiling level (i.e., “Trace”).

Appendix E. Duplicate Records Removed from Bird Study #3, Secretive Marsh Bird Helicopter Survey dataset

The following records were flagged as duplicate records during secondary processing, and were confirmed as duplicates and removed from the electronic dataset by the DOI Data Verification/Validation Contractor.

TABLE E-1. DUPLICATE RECORDS REMOVED FROM DATASET

FORM ID	DATE	SPECIES NAME	LATITUDE	LONGITUDE
44	8/27/2010	Common Moorhen	29.49008	-90.49090
45	8/27/2010	Common Moorhen	29.46738	-90.46676
46	8/27/2010	Common Moorhen	29.49006	-90.44322
47	8/27/2010	Common Moorhen	29.48590	-90.44335
48	8/27/2010	Common Moorhen	29.48416	-90.44334
49	8/27/2010	Common Moorhen	29.48239	-90.44358
50	8/27/2010	Common Moorhen	29.47816	-90.44396
51	8/27/2010	Common Moorhen	29.47627	-90.44404
52	8/27/2010	Common Moorhen	29.45935	-90.44546
53	8/27/2010	Common Moorhen	29.45829	-90.44544
54	8/27/2010	Common Moorhen	29.45027	-90.44570
1940	9/9/2010	Common Moorhen	29.10514	-89.25260
1946	9/9/2010	Common Moorhen	29.38283	-89.47263
1954	9/9/2010	Common Moorhen	29.40021	-89.47022
1955	9/9/2010	Common Moorhen	29.10606	-89.25227
1956	9/9/2010	Common Moorhen	29.10514	-89.25260
1957	9/9/2010	Common Moorhen	29.09617	-89.25631
1958	9/9/2010	Common Moorhen	29.08570	-89.26128
1959	9/9/2010	Common Moorhen	29.06707	-89.27309
1960	9/9/2010	Common Moorhen	29.04280	-89.30368
1961	9/9/2010	Common Moorhen	28.99455	-89.34697
1962	9/9/2010	Common Moorhen	29.38283	-89.47263
1963	9/9/2010	Common Moorhen	29.38150	-89.47271
1964	9/9/2010	Common Moorhen	29.38109	-89.47095
1965	9/9/2010	Common Moorhen	29.38195	-89.46928
1966	9/9/2010	Common Moorhen	29.38223	-89.46873
1967	9/9/2010	Common Moorhen	29.38276	-89.46767
1968	9/9/2010	Common Moorhen	29.38285	-89.46750
1969	9/9/2010	Common Moorhen	29.38300	-89.46720
1970	9/9/2010	Common Moorhen	29.40021	-89.47022
2175	9/10/2010	Clapper Rail	29.08503	-89.17365
2203	9/10/2010	Common Moorhen	29.07927	-89.19415

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FORM ID	DATE	SPECIES NAME	LATITUDE	LONGITUDE
2204	9/10/2010	Common Moorhen	29.03773	-89.18114
2205	9/10/2010	Common Moorhen	29.12451	-89.20038
2206	9/10/2010	Common Moorhen	29.10293	-89.18690
2207	9/10/2010	Common Moorhen	29.12691	-89.17534
2208	9/10/2010	Common Moorhen	29.08699	-89.14497
2209	9/10/2010	Common Moorhen	29.13264	-89.15437
2210	9/10/2010	Common Moorhen	29.14928	-89.16636
2211	9/10/2010	Common Moorhen	29.15691	-89.17268
2212	9/10/2010	Common Moorhen	29.16231	-89.14618
2213	9/10/2010	Common Moorhen	29.16169	-89.14555
2214	9/10/2010	Common Moorhen	29.16066	-89.14475
2215	9/10/2010	Common Moorhen	29.16149	-89.14444
2216	9/10/2010	Common Moorhen	29.12735	-89.11854
2217	9/10/2010	Common Moorhen	29.12708	-89.11809
2295	9/10/2010	White Ibis	29.14060	-89.16016
3374	9/12/2010	Clapper Rail	29.84254	-89.48147
5253	9/15/2010	Seaside Sparrow	29.88219	-89.42699
5282	9/15/2010	Seaside Sparrow	29.93870	-89.39524
6156	9/20/2010	Black Crowned Night Heron	29.54438	-92.27886
6241	9/20/2010	Common Moorhen	29.58039	-92.24023
6242	9/20/2010	Common Moorhen	29.58050	-92.23993
6911	9/22/2010	Common Moorhen	29.72756	-92.21094
7666	9/24/2010	Common Moorhen	29.75751	-91.76288
7667	9/24/2010	Common Moorhen	29.75792	-91.76231
8575	9/27/2010	Common Moorhen	29.63566	-92.70006
8577	9/27/2010	Common Moorhen	29.65293	-92.69389
8578	9/27/2010	Common Moorhen	29.65331	-92.69374
8579	9/27/2010	Common Moorhen	29.65461	-92.69341
8580	9/27/2010	Common Moorhen	29.66408	-92.69074
8581	9/27/2010	Common Moorhen	29.66462	-92.69068
8582	9/27/2010	Common Moorhen	29.66472	-92.69066
8583	9/27/2010	Common Moorhen	29.66540	-92.69055
8584	9/27/2010	Common Moorhen	29.67129	-92.68907
8585	9/27/2010	Common Moorhen	29.67249	-92.68868
8587	9/27/2010	Common Moorhen	29.70417	-92.83537
8588	9/27/2010	Common Moorhen	29.64608	-92.52750
8589	9/27/2010	Common Moorhen	29.64971	-92.52668
8590	9/27/2010	Common Moorhen	29.63467	-92.54596
8591	9/27/2010	Common Moorhen	29.63497	-92.54587
8592	9/27/2010	Common Moorhen	29.65566	-92.56385

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FORM ID	DATE	SPECIES NAME	LATITUDE	LONGITUDE
8593	9/27/2010	Common Moorhen	29.65031	-92.63792
8594	9/27/2010	Common Moorhen	29.65433	-92.63718
8595	9/27/2010	Common Moorhen	29.65696	-92.63640
8597	9/27/2010	Common Moorhen	29.64022	-92.69880
8607	9/27/2010	Common Moorhen	29.69260	-92.74444
10342	9/28/2010	Common Moorhen	29.54368	-91.43497
10343	9/28/2010	Common Moorhen	29.54420	-91.44025
10344	9/28/2010	Common Moorhen	29.54521	-91.45303
10345	9/28/2010	Common Moorhen	29.54525	-91.45418
10346	9/28/2010	Common Moorhen	29.54536	-91.45595
10347	9/28/2010	Common Moorhen	29.54525	-91.46187
10348	9/28/2010	Common Moorhen	29.54521	-91.46241
10349	9/28/2010	Common Moorhen	29.54508	-91.46421
10350	9/28/2010	Common Moorhen	29.54479	-91.46804
10351	9/28/2010	Common Moorhen	29.54482	-91.46829
10352	9/28/2010	Common Moorhen	29.54316	-91.50893
10353	9/28/2010	Common Moorhen	29.54010	-91.49339
10354	9/28/2010	Common Moorhen	29.54019	-91.49290
10355	9/28/2010	Common Moorhen	29.53962	-91.48898
10356	9/28/2010	Common Moorhen	29.53958	-91.48881
10357	9/28/2010	Common Moorhen	29.53946	-91.48843
10358	9/28/2010	Common Moorhen	29.53886	-91.48586
10359	9/28/2010	Common Moorhen	29.53877	-91.48463
10360	9/28/2010	Common Moorhen	29.53687	-91.47352
10361	9/28/2010	Common Moorhen	29.53680	-91.47315
10362	9/28/2010	Common Moorhen	29.53670	-91.47236
10363	9/28/2010	Common Moorhen	29.53644	-91.47026
10364	9/28/2010	Common Moorhen	29.53637	-91.46967
10365	9/28/2010	Common Moorhen	29.53627	-91.46888
10366	9/28/2010	Common Moorhen	29.53567	-91.46491
10367	9/28/2010	Common Moorhen	29.53558	-91.46432
10368	9/28/2010	Common Moorhen	29.53530	-91.46228
10369	9/28/2010	Common Moorhen	29.53525	-91.46181
10370	9/28/2010	Common Moorhen	29.53228	-91.44680
10371	9/28/2010	Common Moorhen	29.53194	-91.44451
10372	9/28/2010	Common Moorhen	29.53187	-91.44385
10373	9/28/2010	Common Moorhen	29.53170	-91.44295
10374	9/28/2010	Common Moorhen	29.53141	-91.44096
10375	9/28/2010	Common Moorhen	29.53135	-91.44055
10376	9/28/2010	Common Moorhen	29.52582	-91.45679

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FORM ID	DATE	SPECIES NAME	LATITUDE	LONGITUDE
10377	9/28/2010	Common Moorhen	29.51978	-91.47968
10378	9/28/2010	Common Moorhen	29.51918	-91.47773
10379	9/28/2010	Common Moorhen	29.51878	-91.47654
10380	9/28/2010	Common Moorhen	29.51867	-91.47616
10381	9/28/2010	Common Moorhen	29.51844	-91.47542
10382	9/28/2010	Common Moorhen	29.51436	-91.46105
10383	9/28/2010	Common Moorhen	29.51211	-91.45517
10384	9/28/2010	Common Moorhen	29.51198	-91.45487
10385	9/28/2010	Common Moorhen	29.50901	-91.44484
10386	9/28/2010	Common Moorhen	29.50894	-91.44452
10387	9/28/2010	Common Moorhen	29.50855	-91.44267
10388	9/28/2010	Common Moorhen	29.50844	-91.44206
10389	9/28/2010	Common Moorhen	29.50833	-91.44141
10390	9/28/2010	Common Moorhen	29.50807	-91.44048
10391	9/28/2010	Common Moorhen	29.50761	-91.43901
10392	9/28/2010	Common Moorhen	29.50755	-91.43878
10393	9/28/2010	Common Moorhen	29.50328	-91.41496
10394	9/28/2010	Common Moorhen	29.50311	-91.41379
10395	9/28/2010	Common Moorhen	29.50252	-91.41006
10396	9/28/2010	Common Moorhen	29.50193	-91.40801
10397	9/28/2010	Common Moorhen	29.50184	-91.40769
10398	9/28/2010	Common Moorhen	29.50178	-91.40747
10399	9/28/2010	Common Moorhen	29.50163	-91.40699
10400	9/28/2010	Common Moorhen	29.50146	-91.40640
10401	9/28/2010	Common Moorhen	29.50130	-91.40563
10402	9/28/2010	Common Moorhen	29.50109	-91.40493
10403	9/28/2010	Common Moorhen	29.50012	-91.39873
10404	9/28/2010	Common Moorhen	29.50001	-91.39772
10405	9/28/2010	Common Moorhen	29.48748	-91.41505
10406	9/28/2010	Common Moorhen	29.48755	-91.41555
10407	9/28/2010	Common Moorhen	29.48770	-91.41609
10408	9/28/2010	Common Moorhen	29.48784	-91.41649
10409	9/28/2010	Common Moorhen	29.48818	-91.41740
10410	9/28/2010	Common Moorhen	29.48907	-91.42728
10411	9/28/2010	Common Moorhen	29.48957	-91.43148
10412	9/28/2010	Common Moorhen	29.49036	-91.44143
10413	9/28/2010	Common Moorhen	29.49049	-91.44269
10414	9/28/2010	Common Moorhen	29.49057	-91.44319
10415	9/28/2010	Common Moorhen	29.49068	-91.44372
10416	9/28/2010	Common Moorhen	29.49118	-91.44589

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FORM ID	DATE	SPECIES NAME	LATITUDE	LONGITUDE
10417	9/28/2010	Common Moorhen	29.49160	-91.44797
10418	9/28/2010	Common Moorhen	29.49224	-91.45337
10419	9/28/2010	Common Moorhen	29.49629	-91.47665
10420	9/28/2010	Common Moorhen	29.47135	-91.45785
10421	9/28/2010	Common Moorhen	29.47418	-91.43255
10422	9/28/2010	Common Moorhen	29.48097	-91.43382
10423	9/28/2010	Common Moorhen	29.49210	-91.43097
10424	9/28/2010	Common Moorhen	29.49372	-91.43066
10425	9/28/2010	Common Moorhen	29.49509	-91.43029
10426	9/28/2010	Common Moorhen	29.45406	-91.34410
10427	9/28/2010	Common Moorhen	29.45682	-91.29489
10428	9/28/2010	Common Moorhen	29.46815	-91.28656
10429	9/28/2010	Common Moorhen	29.46873	-91.28622
10430	9/28/2010	Common Moorhen	29.46898	-91.28608
10431	9/28/2010	Common Moorhen	29.47189	-91.28380
10432	9/28/2010	Common Moorhen	29.47560	-91.28876
10433	9/28/2010	Common Moorhen	29.47463	-91.29094
10434	9/28/2010	Common Moorhen	29.47090	-91.30194
10435	9/28/2010	Common Moorhen	29.46001	-91.33992
10436	9/28/2010	Common Moorhen	29.45983	-91.33980
10437	9/28/2010	Common Moorhen	29.45897	-91.34056
10438	9/28/2010	Common Moorhen	29.45891	-91.34159
10439	9/28/2010	Common Moorhen	29.45573	-91.34329
10440	9/28/2010	Common Moorhen	29.45465	-91.34367
10441	9/28/2010	Common Moorhen	29.45401	-91.34104
10442	9/28/2010	Common Moorhen	29.45400	-91.34077
10443	9/28/2010	Common Moorhen	29.45406	-91.33939
10444	9/28/2010	Common Moorhen	29.45414	-91.33842
10445	9/28/2010	Common Moorhen	29.45423	-91.33760
10446	9/28/2010	Common Moorhen	29.45436	-91.33553
10447	9/28/2010	Common Moorhen	29.45478	-91.33153
10448	9/28/2010	Common Moorhen	29.45534	-91.32849
10449	9/28/2010	Common Moorhen	29.45553	-91.32746
10450	9/28/2010	Common Moorhen	29.45561	-91.32709
10451	9/28/2010	Common Moorhen	29.41377	-91.27087
10452	9/28/2010	Common Moorhen	29.41908	-91.27235
10453	9/28/2010	Common Moorhen	29.42244	-91.27504
10454	9/28/2010	Common Moorhen	29.42367	-91.27227
10455	9/28/2010	Common Moorhen	29.43213	-91.26449
10456	9/28/2010	Common Moorhen	29.43294	-91.26510

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FORM ID	DATE	SPECIES NAME	LATITUDE	LONGITUDE
10457	9/28/2010	Common Moorhen	29.43481	-91.26493
10458	9/28/2010	Common Moorhen	29.46003	-91.26430
10459	9/28/2010	Common Moorhen	29.45305	-91.28240
10460	9/28/2010	Common Moorhen	29.44846	-91.28392
10461	9/28/2010	Common Moorhen	29.44738	-91.28444
10462	9/28/2010	Common Moorhen	29.44390	-91.28394
10463	9/28/2010	Common Moorhen	29.42969	-91.28133
10464	9/28/2010	Common Moorhen	29.42881	-91.28110
10465	9/28/2010	Common Moorhen	29.42749	-91.28076
10466	9/28/2010	Common Moorhen	29.42701	-91.28045
10467	9/28/2010	Common Moorhen	29.41494	-91.33448
10468	9/28/2010	Common Moorhen	29.41703	-91.33453
10469	9/28/2010	Common Moorhen	29.41224	-91.32426
10470	9/28/2010	Common Moorhen	29.41219	-91.31164
10471	9/28/2010	Common Moorhen	29.41595	-91.31265
10472	9/28/2010	Common Moorhen	29.41764	-91.31240
10473	9/28/2010	Common Moorhen	29.41817	-91.31229
10474	9/28/2010	Common Moorhen	29.41862	-91.31218
10475	9/28/2010	Common Moorhen	29.41938	-91.31197
10476	9/28/2010	Common Moorhen	29.42089	-91.31179
10477	9/28/2010	Common Moorhen	29.42223	-91.31165
11315	9/29/2010	Red-winged Blackbird	29.06687	-90.48333
11367	9/29/2010	Seaside Sparrow	29.05225	-90.93007
11628	9/30/2010	Clapper Rail	29.51133	-91.89557
11964	9/30/2010	Seaside Sparrow	29.56551	-92.01983