

A. Introduction

The Mississippi Department of Wildlife, Fisheries, and Parks (MDWFP) is seeking bids from qualified contractors to provide field data collection services and to write an invasive species management plan for MDWFP. MDWFP will award this contract to the person or entity submitting the bid that is most advantageous to MDWFP.

B. Field Data Collection Scope Of Services

The successful bidder will be required to inventory the following:

- 12,952+/- acres on Ward Bayou Wildlife Management Area (WMA) Jackson County,
Invasive Species Only Plots – 2,632 ±
Timber Volume Plots – 2,490 ±
- 33,821 +/- acres on Pascagoula River WMA in George and Jackson Counties.
Invasive Species Only Plots – 5,981 ±
Timber Volume Plots – 5,795 ±

C. Content Of Bid

The contractor will submit a bid with information and pricing per plot for invasive species only plots and plots where both invasive species and timber will be inventoried for finalized payment calculations.

Bids shall include, at a minimum, the following items:

1. *Cover Letter.* A one page cover letter containing:
 - The name of the person(s) authorized to represent the contractor in negotiating and signing any agreement which may result from the bid;
 - Entity name and address;
 - Phone, website and email address
2. *Experience.* Provide previous work examples that demonstrate the ability to provide services to locations listed in Section B, Scope of Services, of this IFB and how you meet the experience qualifications outlined in Section D, Qualifications and Experience, of this IFB. For each example, provide the following information:
 - The scope and goals of past projects and how success was measured.
 - A statement of qualifications must accompany your bid, even if you have previously worked on similar contracts. It will include your experience in forest management, timber inventorying and any other natural resource management. Include the estimated time required to complete the acres being bid on, along with the name(s) and experience of all employees of the Contractor who will aide in completing the contract.

D. Qualifications And Experience

Bids will only be accepted from contractors who are registered foresters. A copy of this documentation will be required with the bid submission.

Contractors shall provide a description of previous work experience on projects similar in nature to the requested services. A summary and scope of services should be provided for each example, as well as, the success of the project.

1. Pre-Contract Meeting

MDWFP will hold an optional pre-contract meeting with the prospective contractors, January 3, 2018 at 11:00 a.m., to review and clarify all aspects and requirements of the contract, look over the work area, and answer any questions either party may have concerning the contract specifications.

2. Completion Date

The contractor may submit their data weekly to the MDWFP. Those plots will be audited within two weeks. The project is to be completed one year from award date.

GUIDELINES FOR INVENTORYING WILDLIFE MANAGEMENT AREAS

Purpose

The purpose of this inventory is to collect all of the data necessary for the Mississippi Department of Wildlife, Fisheries, and Parks (MDWFP) to document invasive species and to predict their movement. This can only be accomplished through a sincere effort on the Contractor's part in the thorough and professional collection of the requested field data.

Overview

As with any habitat analysis, the following items will be required from the Contractor to allow for a complete compartment database for proposing management need and actions:

- I. Document the presence of invasive species (All plots successfully tallied on a hand-held data recorder using T-Cruise)
- II. Forest Inventory (All plots successfully tallied on a hand-held data recorder using T-Cruise)
- III. Provide field data to MDWFP within 5 days of collecting it for auditing purposes

Details of the above items are provided in the following inventory specifications section.

MDWFP Responsibilities

The following items will be fulfilled by the MDWFP:

1. Provide Contractor with the following inventory files: plot allocation (.way format); inventory boundary and compartment shape files; topographic and/or aerial coverage (.tif and .tfw) of project area and; T-cruise parameters (.tcc)
2. Will provide specific forest specification limits particular to the project that are included within the .tcc parameters.
3. Perform initial and intermediate audits of inventory work to ensure proper procedures are being met.
4. Will assist Contractor in data transfer upon completion.

INVENTORY SPECIFICATIONS

Section I.

I. Inventory (Forest Resources)

A. General

An inventory will be performed for invasive species, sawtimber, pulpwood, and regeneration. All sampling will be sampled in a circular manner, clockwise about a fixed plot center. Additionally, a 1/100 acre circular plot (11.8' radius) will be taken for regeneration. Each plot will include the recording of the following in T-cruise: presence of each invasive species encountered and on each timber plot: DBH, merchantable height, product class, and species for merchantable trees; species and classification of regeneration on 1/100th acre plot (11.8' radius).

Sampling intensity will be approximately one plot per two and one-half acres for invasive species and one plot per five acres for timber inventory. Invasive species data will also be collected on timber plots.

All plot centers shall be marked on the ground at plot center with orange wire flags and above ground (in a tree or bush close to plot center) with glow-orange flagging marked with the plot number. Plot sampling should begin due North, going clockwise and the first merchantable tree

shall be flagged with glow-orange flagging. Plots shall be within 10' of the Solo Forest designated plot center.

B. Tally on Data Recorder

All tree data will be entered in the appropriate location within a hand-held data recorder using the provided T-cruise parameters. Each plot location will be separated by plot number and data will be recorded for the following:

1. 1/5th acre plot (sawtimber): tree species by code, DBH (1" classes), appropriate merchantable height and product. A list of species can be found in Exhibit 1.
2. 1/10th acre plot (pulpwood): tree species by code, DBH (1" classes), appropriate merchantable height and product.
3. 1/100 acre plot (regeneration): tree species, stem count and classification based on height.
4. Presence of invasive species: record presence of invasive species within 24 feet of plot center. A list of invasive species can be found in Exhibit 2.

The following are the product specifications for this inventory product:

1. Sawtimber:

A. Hardwood – Record by species all trees 13.6" DBH and larger, tallied in 1-inch classes. Heights are recorded in 16-foot logs and half logs and estimated to a minimum 10" top or merchantable height as determined by form. A sawtimber stem must have at least one merchantable log to be considered.

B. Pine – Record by species all trees 13.6" DBH and larger, tallied in 1-inch class. Heights are recorded in 16 foot logs and half-logs to a minimum 8" merchantable top determined by form.

Pine and hardwood sawtimber-sized trees that are determined un-merchantable, due to form, will be recorded as pulpwood (PW) in the product column.

2. Pulpwood:

A. Hardwood – All trees 4.6" - 13.5" will be tallied by species, DBH in 1-inch classes and the appropriate height in feet by 5 foot increment up to a 4" top. Minimum merchantable height is 20'.

B. Pine – 4.6" – 13.5" will be tallied as described above, exception: pine stems of exceptional form and 8.6" DBH and larger should be considered as Chip-N-Saw (CNS). Minimum merchantable height is 20'.

Pine and hardwood pulpwood size trees that are determined un-merchantable, due to form, will be recorded as cull (CL) in the product column.

3. Regeneration:

Regeneration counts will be carried out at each plot, within a circular 1/100th-acre plot (radius 11.8 feet from plot center), tallying by species and height classes (0.1" to 18.0" and 18.1+" tall respectively) and number of stems.

4. Cull Trees:

Any tree that is hollow or contains less than 10% merchantable growth within the bole will be considered a cull tree, regardless of product determination (ex. sawtimber, pulpwood, etc.). The exception will be an active or potential den tree, which shall be coded accordingly. A den tree may be alive or dead tree.

C. Data Management and Transfer

The Contractor is responsible for protecting all data recorded during the course of performing the fieldwork through the completion of the inventory project. This includes data organization and delivery to the MDWFP. The MDWFP requires periodic data delivery from which to perform audits during the course of this contract. The Contractor will make available plot data for this purpose as determined by the MDWFP.

Upon completion of the fieldwork, the Contractor will supply the MDWFP with all data collected, including plot data (.tce or .tcd), all spatial points described (Solo Forest) and any field recorded comments, through either external drives or through web-based options. All data collected is and shall become the property of the MDWFP. No reproduction, use of other distribution of the data by the contractor is allowed without the prior written consent of the MDWFP.

Compartment Inspection and Acceptance

Section II

Inspection Procedure

A. Stand examination work will be accepted on the basis of a formal inspection by the MDWFP and its designated agents. Inspection of selected stands and/or plots will be made for compliance with the Technical Accuracy Standards. (See Section III)

B. A minimum of 5% of the plots will be selected for inspection. If the check reveals unsatisfactory work, an additional 5% of the plots will be inspected.

C. During the initial phase of the inventory, the MDWFP or its designee will be required to accompany the Contractor for an inspection of selected plots. This procedure should help resolve any questions or problems prior to the implementation of any work.

D. Upon notification that an intermediate audit is not in compliance, the Vendor will cease work on this contract and any and all other active inventory contracts with the MDWFP, until such time as problems are satisfactorily resolved and the MDWFP on each contract informs the Contractor that work may resume.

Section III

Technical Accuracy Standards

A. Purpose: The following standards and tolerances are established for accepting the recorded data. For purposes of evaluating the accuracy of the stand or plot data collected by the Contractor, a point value system has been established for the various items measured. Specified items constitute a definite point loss defined in the technical accuracy standards.

B. Flagging and Plot Centers: Plot centers not properly located, flagged or not found will be treated as a missed plot described in the technical accuracy standards. Plot center must be within 10' of Solo Forest's exact plot center.

Technical Accuracy Standards Table

Plot Summary

| | |
|------------------|--------------|
| Date | -2 |
| Plot Center | -5 |
| Missed Plot | -10 |
| Plot Number | -2 |
| Forest Type | Unacceptable |
| Invasive Species | Unacceptable |

Plot Tree Tally

| <u>Item</u> | <u>Tolerance Range</u> | <u>Point Loss</u> |
|-------------|------------------------|-------------------|
|-------------|------------------------|-------------------|

Merchantable Trees

| | | |
|-----------------|---------------------|--------------------|
| Number of Trees | | -2 First (1 wrong) |
| | | -4 Every Other |
| Species | | -4 |
| DBH | 1 inch | -4 |
| Height | ± 1/2 Log Sawtimber | -4 |
| Product | | -4 |

Cull Trees

| | | |
|-------------------------------|------------|--------------------|
| Number of Trees | | -2 First (1 wrong) |
| | | -4 Every Other |
| Species (Only for live trees) | | -4 |
| DBH | ± 4 inches | -4 |
| Height | ± 16 feet | -4 |

Regeneration

| | | |
|---------------------------|---|----|
| Regeneration Count | ± 5% by species within each height class | -1 |
| Regeneration Species I.D. | | -2 |
| Regeneration Height | | -1 |

Unacceptable Stand Determination

Section IV

Unacceptable Plots or Stands

- A. Any plot or stand with an unacceptable forest type.
- B. Any invasive species not tallied as present when it is on the plot.
- C. Any plot or stand where the point loss is 10 or greater on either the individual tree tally sheet or the plot summary sheet.
- D. Inventory accuracy will be determined by the following equation:

$$\text{Stand Accuracy} = \frac{\text{Acceptable Plots or Stands Inspected} * 100}{\text{Total Plots or Stands Inspected}}$$

Stand accuracy must be $\geq 80\%$ to be acceptable.

Management Plan(s) Scope of Work

The scope of work for the management plan contract will include, but is not limited to, the following:

- Develop an invasive species management plan that includes a list of target species. Each WMA (Pascagoula River and Ward Bayou) shall have their own stand-alone management plan.
- Each invasive species management plan must also include the following:
 - Profile of each targeted or watch species with a history of its presence in the region;
 - Profile information should include basic life history, identification information and means of spread including both natural and man-made pathways;
 - Identification of the most appropriate control or management options for each target species by habitat type including biological, mechanical and chemical methods when available. Management options must include the following by species: optimum timing of control measures, cost of control measures, and strategy of how to control;
 - Implementation plan or management schedule that can be implemented over a 3-year period.
 - Outline of a monitoring schedule that facilitates early detection of new invasive species and adequate monitoring of managed invasions; and,
 - Priority list of actions and resources needed to eradicate the invasive species.
- Invasive species spatial data to be used in the development of the management plan will be supplied to the contractor. The data will include species name and location (lat/long) where found. GIS maps by species will also be supplied to the contractor by the MDWFP. In addition to the species located on site, a comprehensive species list must include invasive plants and animal known to be established in or near Pascagoula and Ward Bayou WMAs. Other harmful exotic species that occur in nearby states but have not become established in South Mississippi must also be included in a watch list to help enable early detection. Human or animal pathogens must not be included.

Timeline to Complete Management Plan Deliverables

To complete the deliverables for which the MDWFP is seeking, the selected respondent (Contractor) must adhere to the following:

1. Within 15 calendar days of the fully executed contract, the Contractor must meet with MDWFP staff to discuss the project.
2. A preliminary outline with list of species must be submitted within 30 calendar days of the fully executed contract and accepted by MDWFP staff before proceeding with the final management plan.
3. Within 30 days of the contractor completing either WMA's inventory a preliminary draft/outline of the invasive species management plan must be submitted. The Contractor must meet with MDWFP staff to review draft if requested.

4. Within 60 days of the contractor completing the inventory for each MDWFP WMA, a preliminary draft/outline of the invasive species management plan must be submitted. The Contractor must meet with MDWFP staff to review draft if requested.
5. The contract will have two weeks to incorporate MDWFP edits and return to the MDWFP for review.
6. Contractor must submit three bound copies and a copy on portable electronic media (.pdf) of the completed management plan.

Exhibit I: Tree Species

| Species Number | Species | Species Number | Species |
|---------------------------|---------------------------|---------------------------|--------------------------|
| 1 | Swamp Laurel Oak | 45 | Black Willow |
| 2 | Water Oak | 46 | Loblolly Pine |
| 3 | Cherrybark Oak | 47 | Shortleaf Pine |
| 4 | Nutall Oak | 48 | Longleaf Pine |
| 5 | Southern Red Oak | 49 | Slash Pine |
| 6 | Shumard Oak | 50 | Spruce Pine |
| 7 | Willow Oak | 51 | Bald Cypress |
| 8 | Northern Red Oak | 52 | Eastern Red Cedar |
| 9 | Laurel Oak | 53 | Tallow Tree |
| 10 | Bluejack Oak | 54 | |
| 11 | Diamond Leaf Oak | 55 | |
| 12 | White Oak | 56 | |
| 13 | Chinkapin Oak | 57 | |
| 14 | Overcup Oak | 58 | |
| 15 | Post Oak | 59 | |
| 16 | Delta Post Oak | 60 | |
| 17 | Swamp Chestnut Oak | 61 | |
| 18 | Live Oak | 62 | |
| 19 | Hickory | 63 | |
| 20 | Bitter Pecan | 64 | |
| 21 | Sweet Pecan | 65 | |
| 22 | Black Walnut | 66 | |
| 23 | Beech | 67 | |
| 24 | Sweetgum | 68 | |
| 25 | Tupelo | 69 | |
| 26 | Blackgum | 70 | |
| 27 | Black Cherry | 71 | |
| 28 | Persimmon | 72 | |
| 29 | Sugarberry | 73 | |
| 30 | Ash | 74 | |
| 31 | Elm | 75 | |
| 32 | Cedar Elm | 76 | |
| 33 | Hornbeam | 77 | |
| 34 | Maple | 78 | |
| 35 | Boxelder | 79 | |
| 36 | Sycamore | 80 | |
| 37 | Yellow Poplar | 81 | |
| 38 | Dogwood | 82 | |
| 39 | Magnolia | 83 | |
| 40 | Mulberry | 84 | |
| 41 | Sassafras | 85 | |
| 42 | Black Locust | 86 | |
| 43 | Honey Locust | 87 | |

Exhibit II: Invasive Species

| Common Name | Scientific Name |
|------------------------------|------------------------------------|
| Trees | |
| Silktree, Mimosa | <i>Albizia julibrissin</i> |
| Tungoil | <i>Vernicia fordii</i> |
| Chinaberrytree | <i>Melia azedarach</i> |
| Tallow Tree, Popcorn Tree | <i>Triadica sebifera</i> |
| | |
| Shrubs | |
| Chinese/European Privet | <i>Ligustrum sinense</i> |
| Japanese/Glossy Privet | <i>Ligustrum japonicum</i> |
| | |
| Grasses | |
| Giant Reed | <i>Arundo donax L.</i> |
| Cogongrass | <i>Imperata cylindrica</i> |
| | |
| Ferns | |
| Japanese Climbing Fern | <i>Lygodium japonicum</i> |
| | |
| Forbs | |
| Alligator Weed | <i>Alternanthera philoxeroides</i> |
| | |
| Cane | |
| Switch Cane | <i>Arundinaria gigantea</i> |
| Animal | |
| Wild Pig | <i>Sus scrofa</i> |

Attachment 1

Bid for Coastal Invasive Species Inventory and Management Plans

Date Opened: _____
Opened By: _____
In Presence Of: _____

MDWFP
Coastal Invasive Species Project
1505 Eastover Dr.
Jackson, MS 39211

Dear Sir,

In response to the invitation to bid (I or We) submit the following bids:

Inventory:

Pascagoula River and \$_____/Per Plot Invasive Species Only Plots
Ward Bayou WMAs: \$_____/Per Plot Invasive Species and Timber Plots

Management Plans: \$_____ - Pascagoula River WMA Invasive Species Management
Plan
\$_____ - Ward Bayou WMA Invasive Species Management Plan

If declared the successful bidder, _____ (I or We) agree to execute a contract within 15 days from the receipt of notice of the accepted bid. **A performance bond in the amount of 10%, not to exceed \$1,000, will be provided at the signing of the contract in the form of a corporate check, surety bond, cashier's check, certified check, or money order.** This performance bond will be held by the Mississippi Department of Wildlife, Fisheries, and Parks to guarantee the faithful performance of each and every article of the contract. Upon written notice of completion of the contract in full by the Contractor, the MDWFP will return the performance bond in full, less any money withheld as damages by the Seller.

Sincerely,

Signature of Bidder

Full Address

Telephone Number

Date