

REQUEST FOR STATEMENTS OF INTEREST

PROJECT TO BE INITIATED IN 2015

**Project Title: Herbarium Voucher Collection
Land Management Section, Environmental Security Department
Marine Corps Installations West – Marine Corps Base Camp Pendleton, California**

Responses to this Request for Statements of Interest will be used to identify potential investigators for a project to be funded by the United States Marine Corps (USMC) which provides professional and technical support for its Environmental Program in order to facilitate successful implementation of Integrated Natural Resources Management Plans in support of the military mission. The authority for this Cooperative Agreement is 16 USC §670c-1 (Sikes Act). Substantial involvement is expected between the USMC and nonfederal partner when carrying out the activities specified in the scope of work and may include activities such as the USMC's involvement in the development of study methodology, data gathering and analysis; review of work plans, reports and all deliverables; providing staff time to oversee and participate in the project.

This proposed project contributes to the objectives of the CESU network by providing usable knowledge to support informed decision making; creating and maintaining effective partnerships among the federal agencies and universities to share resources and expertise; encouraging professional development of current and future federal scientists, resource managers, and environmental leaders; and managing federal resources effectively. In addition, this work is consistent with the Californian CESU mission of providing research, technical assistance, and education to federal land management, environmental, and research agencies.

Background:

The purpose of this agreement is to continue to collect herbarium specimens in order to prepare a scientifically reputable floristic spreadsheet checklist using San Diego Plant Atlas methodologies in 28 grid squares aboard USMC Camp Pendleton (Base). Due to scientific advances, plant names and family relationships are continually changing which makes it necessary to update the checklist. A high quality plant checklist is an essential reference in Base natural resources work. Creating the checklist will require documenting as many native and naturalized plants on Base as possible by focusing efforts at peak flowering times.

Description of Anticipated Work:

Base Year:

Government

The government will facilitate base access, coordinate range access, assist with field collection and plant identification, and review data and reports.

Cooperator:

Task 1: Herbarium Collecting

The Cooperator will collect herbarium specimens for the purpose of preparing a scientifically reputable floristic spreadsheet checklist for the Base. Plants will be collected in accordance to the San Diego Natural History Museum Plant Atlas Grid Square system method. All surveys aboard NWS Fallbrook, if any, will follow the same methodology as the Base surveys and the results will be located in a separate report and checklist.

All new plants identified on Base will be recorded in the checklist and vouchered. There will be a minimum of ten (10) field days for the base year of the agreement.

All rare plant populations that are not in the Base rare plant dataset will be counted and mapped using a GPS unit with a minimum of 3-meter accuracy. The number of plants in each phenology stage (vegetative, flower bud, flowering, fruiting, and senescent), plant community, associated plants, aspect, disturbances, latitude, and longitude will be recorded.

Any new invasive species (and invasive species infestations) which are located on Base will be counted and mapped using a Global Positioning System (GPS) unit with a minimum of 3-meter accuracy. The number of individuals, latitude, and longitude will be provided to the BTR in the form of a spreadsheet for the field survey reports and will be in a Geographical Information System (GIS) dataset as part of the agreement deliverables.

All milkweed species used by the monarch butterfly will be counted and mapped using a GPS unit with a minimum of 3-meter accuracy. The plant community will also be recorded.

During all field surveys, GPS units will be set to collect streaming line data to show what areas of the Base where surveyed, on what date, and by how many people. The collection of streaming line data will be disabled, or the GPS unit will be turned off, when not surveying. There should be no line features depicting where the vehicles were driven. The survey routes from all survey events shall be provided to the Land Management Section as a GIS feature class.

During the Plant Atlas project, the botanists associated with the project will be accompanied by Base resource management personnel. The purpose of this field shadowing experience is to provide Base personal with excellent, hands-on botanical training to include: plant identification, survey methods, how to collect herbarium-quality voucher specimens, and how to

record botanical field data. Such training is critical for Base Land Management personnel to gain perspective on invasive plant distributions, special plant species, and botanical habitat characteristics, which has applications to a wide variety of natural resource programs on base.

Task 2: Kick-Off Meeting

The Cooperator shall attend a kick-off meeting with the Land Management Section prior to conducting the field work. The purpose of the kick-off meeting is to discuss the purpose of the project, timelines, data management formats, explain Base access and security requirements/restrictions, clarify schedules, answer any questions the Cooperator may have regarding the project, and discuss other pertinent information which could have a bearing on the work to be performed. The Cooperator will prepare the kick-off meeting notes and include them in the first field survey report.

Task 3: Field Survey Reports

Within 10 calendar days after each field visit, the Cooperator will send an e-mail to the Base Technical Representative (BTR) and the Navy Technical Representative (NTR) with the following information:

- New Additions to the Base Checklist
- New Vouchers for Existing Species in the Base Checklist
- Rediscoveries of Plants Previously Documented on the Base
- New San Diego County records
- Rare Plant Species Observations
- Invasive Species Observations
- Any Other Notable Observations
- Spreadsheet of invasive species locations, which will have the following columns:
 - scien_name: Scientific name
 - pop_date: YYYYMMDD format
 - pop_count: Number of plants
 - surveyor: Name of surveyor
 - elevation: The elevation in meters.
 - coord_x: Longitude in decimal degrees (e.g., - 117.37094)
 - coord_y: Latitude in decimal degrees (e.g., 33.22736)
- Spreadsheet of rare plant locations, which will have the following columns (exact field names may change after migration to new SDSFIE version):
 - scien_name: Scientific name
 - pop_date: YYYYMMDD format
 - pop_count: Number of plants. The sum of the phenology stages should equal the pop_count.
 - vegetative: The number of individuals in the vegetative stage.
 - flower_bud: The number of individuals with flower buds.
 - flowering: The number of individuals flowering.
 - fruiting: The number of individuals fruiting and setting seed.

- senescent: The number of individuals that have finished flowering, fruiting, and setting seed.
- hab_typ_d: Habitat type domain value
- plant_comm: The plant community following the most recent Vegetation Communities of San Diego County by Oberbauer.
- assoc_plants: Separate scientific names with a comma and then a space
- aspect: For example, NW (Steep)
- elevation: The elevation in meters.
- coord_x: Longitude in decimal degrees (e.g., - 117.37094)
- coord_y: Latitude in decimal degrees (e.g., 33.22736)
- Spreadsheet of milkweed locations, which will have the following columns (exact field names may change after migration to new SDSFIE version):
 - scien_name: Scientific name
 - pop_date: YYYYMMDD format
 - pop_count: Number of plants
 - plant_comm:
 - surveyor: Name of surveyor
 - elevation: The elevation in meters.
 - coord_x: Longitude in decimal degrees (e.g., - 117.37094)
 - coord_y: Latitude in decimal degrees (e.g., 33.22736)

Task 4: Yearly Summary Report

A report is due for each year of this agreement. A separate report will be provided for any work conducted aboard NWS Fallbrook. A draft report (electronic [.doc and searchable .pdf]) shall be submitted within 30 days of conclusion of field work. It is the responsibility of the Cooperator to assure that all electronic deliverables are fully compatible and functional based on the current applications used by Environmental Security. The BTR will review the draft report and provide comments to the Cooperator. Within 10 calendar days of receipt of Government comments, the Cooperator will provide a pre-final report (electronic [.doc and searchable .pdf]), along with the responses to the comments. The BTR will review the pre-final report and provide comments to the Cooperator. Within 5 calendar days of receipt of Government comments, the Cooperator will provide a final report (electronic [.doc and searchable .pdf]), along with the responses to the comments.

Task 5: Base Plant Voucher Checklist

The Base plant voucher checklist is due for each year of this agreement. A separate checklist will be provided for any work conducted aboard NWS Fallbrook. The checklist for NWS Fallbrook does not need to include the following columns: Voucher from SDSU, Is this Plant Counted, JM2 Common Name, Listed Rebman 2006, Listed Jepson 1996, and Jepson 1996 Pg.

The Cooperator will update the Base plant voucher checklist with the new plant vouchers according to Table 1. A qualified botanist or biologist is required to complete this task. The checklist will be updated with any revisions to plant taxonomy and any recent synonyms will be

entered into the checklist. The Cooperator will review and update federal, state, and CNPS (California Native Plant Species) status on the existing voucher checklist.

A draft checklist (electronic) shall be submitted within 30 days of conclusion of field work. It is the responsibility of the Cooperator to assure that all electronic deliverables are fully compatible and functional based on the current applications used by Environmental Security. The BTR will review the draft checklist and provide comments to the Cooperator. Within 10 calendar days of receipt of Government comments, the Cooperator will provide a pre-final checklist (electronic), along with the responses to the comments. The BTR will review the pre-final checklist and provide comments to the Cooperator. Within 5 calendar days of receipt of Government comments, the Cooperator will provide a final checklist (electronic), along with the responses to the comments.

Option 1:

Government

The government will facilitate base access, coordinate range access, assist with field collection and plant identification, and review data and reports.

Cooperator

Task 1: Herbarium Collecting

The Cooperator will collect herbarium specimens for the purpose of preparing a scientifically reputable floristic spreadsheet checklist for the Base. Plants will be collected in accordance to the San Diego Natural History Museum Plant Atlas Grid Square system method. All surveys aboard NWS Fallbrook, if any, will follow the same methodology as the Base surveys and the results will be located in a separate report and checklist.

All new plants identified on Base will be recorded in the checklist and vouchered. There will be a minimum of eleven (11) field days for Option 1.

All rare plant populations that are not in the Base rare plant dataset will be counted and mapped using a GPS unit with a minimum of 3-meter accuracy. The number of plants in each phenology stage (vegetative, flower bud, flowering, fruiting, and senescent), plant community, associated plants, aspect, disturbances, latitude, and longitude will be recorded.

Any new invasive species (and invasive species infestations) which are located on Base will be counted and mapped using a Global Positioning System (GPS) unit with a minimum of 3-meter accuracy. The number of individuals, latitude, and longitude will be provided to the BTR in the form of a spreadsheet for the field survey reports and will be in a Geographical Information System (GIS) dataset as part of the agreement deliverables.

All milkweed species used by the monarch butterfly will be counted and mapped using a GPS unit with a minimum of 3-meter accuracy. The plant community will also be recorded.

During all field surveys, GPS units will be set to collect streaming line data to show what areas of the Base were surveyed, on what date, and by how many people. The collection of streaming line data will be disabled, or the GPS unit will be turned off, when not surveying. There should be no line features depicting where the vehicles were driven. The survey routes from all survey events shall be provided to the Land Management Section as a GIS feature class.

During the Plant Atlas project, the botanists associated with the project will be accompanied by Base resource management personnel. The purpose of this field shadowing experience is to provide Base personnel with excellent, hands-on botanical training to include: plant identification, survey methods, how to collect herbarium-quality voucher specimens, and how to record botanical field data. Such training is critical for Base Land Management personnel to gain perspective on invasive plant distributions, special plant species, and botanical habitat characteristics, which has applications to a wide variety of natural resource programs on base.

Task 2: Kick-Off Meeting

The Cooperator shall attend a kick-off meeting with the Land Management Section prior to conducting the field work. The purpose of the kick-off meeting is to discuss the purpose of the project, timelines, data management formats, explain Base access and security requirements/restrictions, clarify schedules, answer any questions the Cooperator may have regarding the project, and discuss other pertinent information which could have a bearing on the work to be performed. The Cooperator will prepare the kick-off meeting notes and include them in the first field survey report.

Task 3: Field Survey Reports

Within 10 calendar days after each field visit, the Cooperator will send an e-mail to the Base Technical Representative (BTR) and the Navy Technical Representative (NTR) with the following information:

- New Additions to the Base Checklist
- New Vouchers for Existing Species in the Base Checklist
- Rediscoveries of Plants Previously Documented on the Base
- New San Diego County records
- Rare Plant Species Observations
- Invasive Species Observations
- Any Other Notable Observations
- Spreadsheet of invasive species locations, which will have the following columns:
 - `scien_name`: Scientific name
 - `pop_date`: YYYYMMDD format
 - `pop_count`: Number of plants
 - `surveyor`: Name of surveyor

- elevation: The elevation in meters.
- coord_x: Longitude in decimal degrees (e.g., - 117.37094)
- coord_y: Latitude in decimal degrees (e.g., 33.22736)
- Spreadsheet of rare plant locations, which will have the following columns (exact field names may change after migration to new SDSFIE version):
 - scien_name: Scientific name
 - pop_date: YYYYMMDD format
 - pop_count: Number of plants. The sum of the phenology stages should equal the pop_count.
 - vegetative: The number of individuals in the vegetative stage.
 - flower_bud: The number of individuals with flower buds.
 - flowering: The number of individuals flowering.
 - fruiting: The number of individuals fruiting and setting seed.
 - senescent: The number of individuals that have finished flowering, fruiting, and setting seed.
 - hab_typ_d: Habitat type domain value
 - plant_comm: The plant community following the most recent Vegetation Communities of San Diego County by Oberbauer.
 - assoc_plants: Separate scientific names with a comma and then a space
 - aspect: For example, NW (Steep)
 - elevation: The elevation in meters.
 - **coord_x**: Longitude in decimal degrees (e.g., - 117.37094)
 - **coord_y**: Latitude in decimal degrees (e.g., 33.22736)
- Spreadsheet of milkweed locations, which will have the following columns (exact field names may change after migration to new SDSFIE version):
 - **scien_name**: Scientific name
 - **pop_date**: YYYYMMDD format
 - **pop_count**: Number of plants
 - **plant_comm**:
 - **surveyor**: Name of surveyor
 - **elevation**: The elevation in meters.
 - **coord_x**: Longitude in decimal degrees (e.g., - 117.37094)
 - **coord_y**: Latitude in decimal degrees (e.g., 33.22736)

Task 4: Yearly Summary Report

A report is due for each year of this agreement. A separate report will be provided for any work conducted aboard NWS Fallbrook. A draft report (electronic [.doc and searchable .pdf]) shall be submitted within 30 days of conclusion of field work. It is the responsibility of the Cooperator to assure that all electronic deliverables are fully compatible and functional based on the current applications used by Environmental Security. The BTR will review the draft report and provide comments to the Cooperator. Within 10 calendar days of receipt of Government comments, the Cooperator will provide a pre-final report (electronic [.doc and searchable .pdf]), along with the responses to the comments. The BTR will review the pre-final report and provide comments to

the Cooperator. Within 5 calendar days of receipt of Government comments, the Cooperator will provide a final report (electronic [.doc and searchable .pdf]), along with the responses to the comments.

Task 5: Base Plant Voucher Checklist

The Base plant voucher checklist is due for each year of this agreement. A separate checklist will be provided for any work conducted aboard NWS Fallbrook. The checklist for NWS Fallbrook does not need to include the following columns: Voucher from SDSU, Is this Plant Counted, JM2 Common Name, Listed Rebman 2006, Listed Jepson 1996, and Jepson 1996 Pg.

The Cooperator will update the Base plant voucher checklist with the new plant vouchers according to Table 1. A qualified botanist or biologist is required to complete this task. The checklist will be updated with any revisions to plant taxonomy and any recent synonyms will be entered into the checklist. The Cooperator will review and update federal, state, and CNPS (California Native Plant Species) status on the existing voucher checklist.

A draft checklist (electronic) shall be submitted within 30 days of conclusion of field work. It is the responsibility of the Cooperator to assure that all electronic deliverables are fully compatible and functional based on the current applications used by Environmental Security. The BTR will review the draft checklist and provide comments to the Cooperator. Within 10 calendar days of receipt of Government comments, the Cooperator will provide a pre-final checklist (electronic), along with the responses to the comments. The BTR will review the pre-final checklist and provide comments to the Cooperator. Within 5 calendar days of receipt of Government comments, the Cooperator will provide a final checklist (electronic), along with the responses to the comments.

Option 1A:

Government

The government will facilitate base access, coordinate range access, assist with field collection and plant identification, and review data and reports.

Cooperator

Task 1: Herbarium Collecting

The Cooperator will collect herbarium specimens for the purpose of preparing a scientifically reputable floristic spreadsheet checklist for the Base. Plants will be collected in accordance to the San Diego Natural History Museum Plant Atlas Grid Square system method. All surveys aboard NWS Fallbrook, if any, will follow the same methodology as the Base surveys and the results will be located in a separate report and checklist.

All new plants identified on Base will be recorded in the checklist and vouchered. There will be a minimum of five (5) field days for Option 1A.

All rare plant populations that are not in the Base rare plant dataset will be counted and mapped using a GPS unit with a minimum of 3-meter accuracy. The number of plants in each phenology stage (vegetative, flower bud, flowering, fruiting, and senescent), plant community, associated plants, aspect, disturbances, latitude, and longitude will be recorded.

Any new invasive species (and invasive species infestations) which are located on Base will be counted and mapped using a Global Positioning System (GPS) unit with a minimum of 3-meter accuracy. The number of individuals, latitude, and longitude will be provided to the BTR in the form of a spreadsheet for the field survey reports and will be in a Geographical Information System (GIS) dataset as part of the agreement deliverables.

All milkweed species used by the monarch butterfly will be counted and mapped using a GPS unit with a minimum of 3-meter accuracy. The plant community will also be recorded.

During all field surveys, GPS units will be set to collect streaming line data to show what areas of the Base were surveyed, on what date, and by how many people. The collection of streaming line data will be disabled, or the GPS unit will be turned off, when not surveying. There should be no line features depicting where the vehicles were driven. The survey routes from all survey events shall be provided to the Land Management Section as a GIS feature class.

During the Plant Atlas project, the botanists associated with the project will be accompanied by Base resource management personnel. The purpose of this field shadowing experience is to provide Base personnel with excellent, hands-on botanical training to include: plant identification, survey methods, how to collect herbarium-quality voucher specimens, and how to record botanical field data. Such training is critical for Base Land Management personnel to gain perspective on invasive plant distributions, special plant species, and botanical habitat characteristics, which has applications to a wide variety of natural resource programs on base.

Task 2: Kick-Off Meeting

The Cooperator shall attend a kick-off meeting with the Land Management Section prior to conducting the field work. The purpose of the kick-off meeting is to discuss the purpose of the project, timelines, data management formats, explain Base access and security requirements/restrictions, clarify schedules, answer any questions the Cooperator may have regarding the project, and discuss other pertinent information which could have a bearing on the work to be performed. The Cooperator will prepare the kick-off meeting notes and include them in the first field survey report.

Task 3: Field Survey Reports

Within 10 calendar days after each field visit, the Cooperator will send an e-mail to the Base Technical Representative (BTR) and the Navy Technical Representative (NTR) with the following information:

- New Additions to the Base Checklist

- New Vouchers for Existing Species in the Base Checklist
- Rediscoveries of Plants Previously Documented on the Base
- New San Diego County records
- Rare Plant Species Observations
- Invasive Species Observations
- Any Other Notable Observations
- Spreadsheet of invasive species locations, which will have the following columns:
 - **scien_name**: Scientific name
 - **pop_date**: YYYYMMDD format
 - **pop_count**: Number of plants
 - **surveyor**: Name of surveyor
 - **elevation**: The elevation in meters.
 - **coord_x**: Longitude in decimal degrees (e.g., - 117.37094)
 - **coord_y**: Latitude in decimal degrees (e.g., 33.22736)
- Spreadsheet of rare plant locations, which will have the following columns (exact field names may change after migration to new SDSFIE version):
 - **scien_name**: Scientific name
 - **pop_date**: YYYYMMDD format
 - **pop_count**: Number of plants. The sum of the phenology stages should equal the **pop_count**.
 - **vegetative**: The number of individuals in the vegetative stage.
 - **flower_bud**: The number of individuals with flower buds.
 - **flowering**: The number of individuals flowering.
 - **fruiting**: The number of individuals fruiting and setting seed.
 - **senescent**: The number of individuals that have finished flowering, fruiting, and setting seed.
 - **hab_typ_d**: Habitat type domain value
 - **plant_comm**: The plant community following the most recent Vegetation Communities of San Diego County by Oberbauer.
 - **assoc_plants**: Separate scientific names with a comma and then a space
 - **aspect**: For example, NW (Steep)
 - **elevation**: The elevation in meters.
 - **coord_x**: Longitude in decimal degrees (e.g., - 117.37094)
 - **coord_y**: Latitude in decimal degrees (e.g., 33.22736)
- Spreadsheet of milkweed locations, which will have the following columns (exact field names may change after migration to new SDSFIE version):
 - **scien_name**: Scientific name
 - **pop_date**: YYYYMMDD format
 - **pop_count**: Number of plants
 - **plant_comm**:
 - **surveyor**: Name of surveyor
 - **elevation**: The elevation in meters.
 - **coord_x**: Longitude in decimal degrees (e.g., - 117.37094)

- **coord_y:** Latitude in decimal degrees (e.g., 33.22736)

Task 4: Yearly Summary Report

A report is due for each year of this agreement. A separate report will be provided for any work conducted aboard NWS Fallbrook. A draft report (electronic [.doc and searchable .pdf]) shall be submitted within 30 days of conclusion of field work. It is the responsibility of the Cooperator to assure that all electronic deliverables are fully compatible and functional based on the current applications used by Environmental Security. The BTR will review the draft report and provide comments to the Cooperator. Within 10 calendar days of receipt of Government comments, the Cooperator will provide a pre-final report (electronic [.doc and searchable .pdf]), along with the responses to the comments. The BTR will review the pre-final report and provide comments to the Cooperator. Within 5 calendar days of receipt of Government comments, the Cooperator will provide a final report (electronic [.doc and searchable .pdf]), along with the responses to the comments.

Task 5: Base Plant Voucher Checklist

The Base plant voucher checklist is due for each year of this agreement. A separate checklist will be provided for any work conducted aboard NWS Fallbrook. The checklist for NWS Fallbrook does not need to include the following columns: Voucher from SDSU, Is this Plant Counted, JM2 Common Name, Listed Rebman 2006, Listed Jepson 1996, and Jepson 1996 Pg.

The Cooperator will update the Base plant voucher checklist with the new plant vouchers according to Table 1. A qualified botanist or biologist is required to complete this task. The checklist will be updated with any revisions to plant taxonomy and any recent synonyms will be entered into the checklist. The Cooperator will review and update federal, state, and CNPS (California Native Plant Species) status on the existing voucher checklist.

A draft checklist (electronic) shall be submitted within 30 days of conclusion of field work. It is the responsibility of the Cooperator to assure that all electronic deliverables are fully compatible and functional based on the current applications used by Environmental Security. The BTR will review the draft checklist and provide comments to the Cooperator. Within 10 calendar days of receipt of Government comments, the Cooperator will provide a pre-final checklist (electronic), along with the responses to the comments. The BTR will review the pre-final checklist and provide comments to the Cooperator. Within 5 calendar days of receipt of Government comments, the Cooperator will provide a final checklist (electronic), along with the responses to the comments.

Option 2: Government

The government will facilitate base access, coordinate range access, assist with field collection and plant identification, and review data and reports.

Cooperator

Task 1: Herbarium Collecting

The Cooperator will collect herbarium specimens for the purpose of preparing a scientifically reputable floristic spreadsheet checklist for the Base. Plants will be collected in accordance to the San Diego Natural History Museum Plant Atlas Grid Square system method. All surveys aboard NWS Fallbrook, if any, will follow the same methodology as the Base surveys and the results will be located in a separate report and checklist.

All new plants identified on Base will be recorded in the checklist and vouchered. There will be a minimum of eleven (11) field days for Option 2.

All rare plant populations that are not in the Base rare plant dataset will be counted and mapped using a GPS unit with a minimum of 3-meter accuracy. The number of plants in each phenology stage (vegetative, flower bud, flowering, fruiting, and senescent), plant community, associated plants, aspect, disturbances, latitude, and longitude will be recorded.

Any new invasive species (and invasive species infestations) which are located on Base will be counted and mapped using a Global Positioning System (GPS) unit with a minimum of 3-meter accuracy. The number of individuals, latitude, and longitude will be provided to the BTR in the form of a spreadsheet for the field survey reports and will be in a Geographical Information System (GIS) dataset as part of the agreement deliverables.

All milkweed species used by the monarch butterfly will be counted and mapped using a GPS unit with a minimum of 3-meter accuracy. The plant community will also be recorded.

During all field surveys, GPS units will be set to collect streaming line data to show what areas of the Base where surveyed, on what date, and by how many people. The collection of streaming line data will be disabled, or the GPS unit will be turned off, when not surveying. There should be no line features depicting where the vehicles were driven. The survey routes from all survey events shall be provided to the Land Management Section as a GIS feature class.

During the Plant Atlas project, the botanists associated with the project will be accompanied by Base resource management personnel. The purpose of this field shadowing experience is to provide Base personnel with excellent, hands-on botanical training to include: plant identification, survey methods, how to collect herbarium-quality voucher specimens, and how to record botanical field data. Such training is critical for Base Land Management personnel to gain perspective on invasive plant distributions, special plant species, and botanical habitat characteristics, which has applications to a wide variety of natural resource programs on base.

Task 2: Kick-Off Meeting

The Cooperator shall attend a kick-off meeting with the Land Management Section prior to conducting the field work. The purpose of the kick-off meeting is to discuss the purpose of the project, timelines, data management formats, explain Base access and security requirements/restrictions, clarify schedules, answer any questions the Cooperator may have

regarding the project, and discuss other pertinent information which could have a bearing on the work to be performed. The Cooperator will prepare the kick-off meeting notes and include them in the first field survey report.

Task 3: Field Survey Reports

Within 10 calendar days after each field visit, the Cooperator will send an e-mail to the Base Technical Representative (BTR) and the Navy Technical Representative (NTR) with the following information:

- New Additions to the Base Checklist
- New Vouchers for Existing Species in the Base Checklist
- Rediscoveries of Plants Previously Documented on the Base
- New San Diego County records
- Rare Plant Species Observations
- Invasive Species Observations
- Any Other Notable Observations
- Spreadsheet of invasive species locations, which will have the following columns:
 - `scien_name`: Scientific name
 - `pop_date`: YYYYMMDD format
 - `pop_count`: Number of plants
 - `surveyor`: Name of surveyor
 - `elevation`: The elevation in meters.
 - `coord_x`: Longitude in decimal degrees (e.g., - 117.37094)
 - `coord_y`: Latitude in decimal degrees (e.g., 33.22736)
- Spreadsheet of rare plant locations, which will have the following columns (exact field names may change after migration to new SDSFIE version):
 - `scien_name`: Scientific name
 - `pop_date`: YYYYMMDD format
 - `pop_count`: Number of plants. The sum of the phenology stages should equal the `pop_count`.
 - `vegetative`: The number of individuals in the vegetative stage.
 - `flower_bud`: The number of individuals with flower buds.
 - `flowering`: The number of individuals flowering.
 - `fruiting`: The number of individuals fruiting and setting seed.
 - `senescent`: The number of individuals that have finished flowering, fruiting, and setting seed.
 - `hab_typ_d`: Habitat type domain value
 - `plant_comm`: The plant community following the most recent Vegetation Communities of San Diego County by Oberbauer.
 - `assoc_plants`: Separate scientific names with a comma and then a space
 - `aspect`: For example, NW (Steep)
 - `elevation`: The elevation in meters.
 - **`coord_x`**: Longitude in decimal degrees (e.g., - 117.37094)

- **coord_y:** Latitude in decimal degrees (e.g., 33.22736)
- Spreadsheet of milkweed locations, which will have the following columns (exact field names may change after migration to new SDSFIE version):
 - **scien_name:** Scientific name
 - **pop_date:** YYYYMMDD format
 - **pop_count:** Number of plants
 - **plant_comm:**
 - **surveyor:** Name of surveyor
 - **elevation:** The elevation in meters.
 - **coord_x:** Longitude in decimal degrees (e.g., - 117.37094)
 - **coord_y:** Latitude in decimal degrees (e.g., 33.22736)

Task 4: Yearly Summary Report

A report is due for each year of this agreement. A separate report will be provided for any work conducted aboard NWS Fallbrook. A draft report (electronic [.doc and searchable .pdf]) shall be submitted within 30 days of conclusion of field work. It is the responsibility of the Cooperator to assure that all electronic deliverables are fully compatible and functional based on the current applications used by Environmental Security. The BTR will review the draft report and provide comments to the Cooperator. Within 10 calendar days of receipt of Government comments, the Cooperator will provide a pre-final report (electronic [.doc and searchable .pdf]), along with the responses to the comments. The BTR will review the pre-final report and provide comments to the Cooperator. Within 5 calendar days of receipt of Government comments, the Cooperator will provide a final report (electronic [.doc and searchable .pdf]), along with the responses to the comments.

Task 5: Base Plant Voucher Checklist

The Base plant voucher checklist is due for each year of this agreement. A separate checklist will be provided for any work conducted aboard NWS Fallbrook. The checklist for NWS Fallbrook does not need to include the following columns: Voucher from SDSU, Is this Plant Counted, JM2 Common Name, Listed Rebman 2006, Listed Jepson 1996, and Jepson 1996 Pg.

The Cooperator will update the Base plant voucher checklist with the new plant vouchers according to Table 1. A qualified botanist or biologist is required to complete this task. The checklist will be updated with any revisions to plant taxonomy and any recent synonyms will be entered into the checklist. The Cooperator will review and update federal, state, and CNPS (California Native Plant Species) status on the existing voucher checklist.

A draft checklist (electronic) shall be submitted within 30 days of conclusion of field work. It is the responsibility of the Cooperator to assure that all electronic deliverables are fully compatible and functional based on the current applications used by Environmental Security. The BTR will review the draft checklist and provide comments to the Cooperator. Within 10 calendar days of receipt of Government comments, the Cooperator will provide a pre-final checklist (electronic), along with the responses to the comments. The BTR will review the pre-final checklist and

provide comments to the Cooperator. Within 5 calendar days of receipt of Government comments, the Cooperator will provide a final checklist (electronic), along with the responses to the comments.

Option 2A:

Government

The government will facilitate base access, coordinate range access, assist with field collection and plant identification, and review data and reports.

Cooperator

Task 1: Herbarium Collecting

The Cooperator will collect herbarium specimens for the purpose of preparing a scientifically reputable floristic spreadsheet checklist for the Base. Plants will be collected in accordance to the San Diego Natural History Museum Plant Atlas Grid Square system method. All surveys aboard NWS Fallbrook, if any, will follow the same methodology as the Base surveys and the results will be located in a separate report and checklist.

All new plants identified on Base will be recorded in the checklist and vouchered. There will be a minimum of five (5) field days for option 2A.

All rare plant populations that are not in the Base rare plant dataset will be counted and mapped using a GPS unit with a minimum of 3-meter accuracy. The number of plants in each phenology stage (vegetative, flower bud, flowering, fruiting, and senescent), plant community, associated plants, aspect, disturbances, latitude, and longitude will be recorded.

Any new invasive species (and invasive species infestations) which are located on Base will be counted and mapped using a Global Positioning System (GPS) unit with a minimum of 3-meter accuracy. The number of individuals, latitude, and longitude will be provided to the BTR in the form of a spreadsheet for the field survey reports and will be in a Geographical Information System (GIS) dataset as part of the agreement deliverables.

All milkweed species used by the monarch butterfly will be counted and mapped using a GPS unit with a minimum of 3-meter accuracy. The plant community will also be recorded.

During all field surveys, GPS units will be set to collect streaming line data to show what areas of the Base where surveyed, on what date, and by how many people. The collection of streaming line data will be disabled, or the GPS unit will be turned off, when not surveying. There should be no line features depicting where the vehicles were driven. The survey routes from all survey events shall be provided to the Land Management Section as a GIS feature class.

During the Plant Atlas project, the botanists associated with the project will be accompanied by Base resource management personnel. The purpose of this field shadowing experience is to provide Base personnel with excellent, hands-on botanical training to include: plant identification, survey methods, how to collect herbarium-quality voucher specimens, and how to record botanical field data. Such training is critical for Base Land Management personnel to gain perspective on invasive plant distributions, special plant species, and botanical habitat characteristics, which has applications to a wide variety of natural resource programs on base.

Task 2: Kick-Off Meeting

The Cooperator shall attend a kick-off meeting with the Land Management Section prior to conducting the field work. The purpose of the kick-off meeting is to discuss the purpose of the project, timelines, data management formats, explain Base access and security requirements/restrictions, clarify schedules, answer any questions the Cooperator may have regarding the project, and discuss other pertinent information which could have a bearing on the work to be performed. The Cooperator will prepare the kick-off meeting notes and include them in the first field survey report.

Task 3: Field Survey Reports

Within 10 calendar days after each field visit, the Cooperator will send an e-mail to the Base Technical Representative (BTR) and the Navy Technical Representative (NTR) with the following information:

- New Additions to the Base Checklist
- New Vouchers for Existing Species in the Base Checklist
- Rediscoveries of Plants Previously Documented on the Base
- New San Diego County records
- Rare Plant Species Observations
- Invasive Species Observations
- Any Other Notable Observations
- Spreadsheet of invasive species locations, which will have the following columns:
 - scien_name: Scientific name
 - pop_date: YYYYMMDD format
 - pop_count: Number of plants
 - surveyor: Name of surveyor
 - elevation: The elevation in meters.
 - coord_x: Longitude in decimal degrees (e.g., - 117.37094)
 - coord_y: Latitude in decimal degrees (e.g., 33.22736)
- Spreadsheet of rare plant locations, which will have the following columns (exact field names may change after migration to new SDSFIE version):
 - scien_name: Scientific name
 - pop_date: YYYYMMDD format
 - pop_count: Number of plants. The sum of the phenology stages should equal the pop_count.

- vegetative: The number of individuals in the vegetative stage.
- flower_bud: The number of individuals with flower buds.
- flowering: The number of individuals flowering.
- fruiting: The number of individuals fruiting and setting seed.
- senescent: The number of individuals that have finished flowering, fruiting, and setting seed.
- hab_typ_d: Habitat type domain value
- plant_comm: The plant community following the most recent Vegetation Communities of San Diego County by Oberbauer.
- assoc_plants: Separate scientific names with a comma and then a space
- aspect: For example, NW (Steep)
- elevation: The elevation in meters.
- **coord_x**: Longitude in decimal degrees (e.g., - 117.37094)
- **coord_y**: Latitude in decimal degrees (e.g., 33.22736)
- Spreadsheet of milkweed locations, which will have the following columns (exact field names may change after migration to new SDSFIE version):
 - **scien_name**: Scientific name
 - **pop_date**: YYYYMMDD format
 - **pop_count**: Number of plants
 - **plant_comm**:
 - **surveyor**: Name of surveyor
 - **elevation**: The elevation in meters.
 - **coord_x**: Longitude in decimal degrees (e.g., - 117.37094)
 - **coord_y**: Latitude in decimal degrees (e.g., 33.22736)

Task 4: Yearly Summary Report

A report is due for each year of this agreement. A separate report will be provided for any work conducted aboard NWS Fallbrook. A draft report (electronic [.doc and searchable .pdf]) shall be submitted within 30 days of conclusion of field work. It is the responsibility of the Cooperator to assure that all electronic deliverables are fully compatible and functional based on the current applications used by Environmental Security. The BTR will review the draft report and provide comments to the Cooperator. Within 10 calendar days of receipt of Government comments, the Cooperator will provide a pre-final report (electronic [.doc and searchable .pdf]), along with the responses to the comments. The BTR will review the pre-final report and provide comments to the Cooperator. Within 5 calendar days of receipt of Government comments, the Cooperator will provide a final report (electronic [.doc and searchable .pdf]), along with the responses to the comments.

Task 5: Base Plant Voucher Checklist

The Base plant voucher checklist is due for each year of this agreement. A separate checklist will be provided for any work conducted aboard NWS Fallbrook. The checklist for NWS Fallbrook does not need to include the following columns: Voucher from SDSU, Is this Plant Counted, JM2 Common Name, Listed Rebman 2006, Listed Jepson 1996, and Jepson 1996 Pg.

The Cooperator will update the Base plant voucher checklist with the new plant vouchers according to Table 1. A qualified botanist or biologist is required to complete this task. The checklist will be updated with any revisions to plant taxonomy and any recent synonyms will be entered into the checklist. The Cooperator will review and update federal, state, and CNPS (California Native Plant Species) status on the existing voucher checklist.

A draft checklist (electronic) shall be submitted within 30 days of conclusion of field work. It is the responsibility of the Cooperator to assure that all electronic deliverables are fully compatible and functional based on the current applications used by Environmental Security. The BTR will review the draft checklist and provide comments to the Cooperator. Within 10 calendar days of receipt of Government comments, the Cooperator will provide a pre-final checklist (electronic), along with the responses to the comments. The BTR will review the pre-final checklist and provide comments to the Cooperator. Within 5 calendar days of receipt of Government comments, the Cooperator will provide a final checklist (electronic), along with the responses to the comments.

Option 3:

Government

The government will facilitate base access, coordinate range access, assist with field collection and plant identification, and review data and reports.

Cooperator

Task 1: Herbarium Collecting

The Cooperator will collect herbarium specimens for the purpose of preparing a scientifically reputable floristic spreadsheet checklist for the Base. Plants will be collected in accordance to the San Diego Natural History Museum Plant Atlas Grid Square system method. All surveys aboard NWS Fallbrook, if any, will follow the same methodology as the Base surveys and the results will be located in a separate report and checklist.

All new plants identified on Base will be recorded in the checklist and vouchered. There will be a minimum of eleven (11) field days for Option 3.

All rare plant populations that are not in the Base rare plant dataset will be counted and mapped using a GPS unit with a minimum of 3-meter accuracy. The number of plants in each phenology stage (vegetative, flower bud, flowering, fruiting, and senescent), plant community, associated plants, aspect, disturbances, latitude, and longitude will be recorded.

Any new invasive species (and invasive species infestations) which are located on Base will be counted and mapped using a Global Positioning System (GPS) unit with a minimum of 3-meter accuracy. The number of individuals, latitude, and longitude will be provided to the BTR in the

form of a spreadsheet for the field survey reports and will be in a Geographical Information System (GIS) dataset as part of the agreement deliverables.

All milkweed species used by the monarch butterfly will be counted and mapped using a GPS unit with a minimum of 3-meter accuracy. The plant community will also be recorded.

During all field surveys, GPS units will be set to collect streaming line data to show what areas of the Base were surveyed, on what date, and by how many people. The collection of streaming line data will be disabled, or the GPS unit will be turned off, when not surveying. There should be no line features depicting where the vehicles were driven. The survey routes from all survey events shall be provided to the Land Management Section as a GIS feature class.

During the Plant Atlas project, the botanists associated with the project will be accompanied by Base resource management personnel. The purpose of this field shadowing experience is to provide Base personnel with excellent, hands-on botanical training to include: plant identification, survey methods, how to collect herbarium-quality voucher specimens, and how to record botanical field data. Such training is critical for Base Land Management personnel to gain perspective on invasive plant distributions, special plant species, and botanical habitat characteristics, which has applications to a wide variety of natural resource programs on base.

Task 2: Kick-Off Meeting

The Cooperator shall attend a kick-off meeting with the Land Management Section prior to conducting the field work. The purpose of the kick-off meeting is to discuss the purpose of the project, timelines, data management formats, explain Base access and security requirements/restrictions, clarify schedules, answer any questions the Cooperator may have regarding the project, and discuss other pertinent information which could have a bearing on the work to be performed. The Cooperator will prepare the kick-off meeting notes and include them in the first field survey report.

Task 3: Field Survey Reports

Within 10 calendar days after each field visit, the Cooperator will send an e-mail to the Base Technical Representative (BTR) and the Navy Technical Representative (NTR) with the following information:

- New Additions to the Base Checklist
- New Vouchers for Existing Species in the Base Checklist
- Rediscoveries of Plants Previously Documented on the Base
- New San Diego County records
- Rare Plant Species Observations
- Invasive Species Observations
- Any Other Notable Observations
- Spreadsheet of invasive species locations, which will have the following columns:
 - scien_name: Scientific name

- pop_date: YYYYMMDD format
- pop_count: Number of plants
- surveyor: Name of surveyor
- elevation: The elevation in meters.
- coord_x: Longitude in decimal degrees (e.g., - 117.37094)
- coord_y: Latitude in decimal degrees (e.g., 33.22736)
- Spreadsheet of rare plant locations, which will have the following columns (exact field names may change after migration to new SDSFIE version):
 - scien_name: Scientific name
 - pop_date: YYYYMMDD format
 - pop_count: Number of plants. The sum of the phenology stages should equal the pop_count.
 - vegetative: The number of individuals in the vegetative stage.
 - flower_bud: The number of individuals with flower buds.
 - flowering: The number of individuals flowering.
 - fruiting: The number of individuals fruiting and setting seed.
 - senescent: The number of individuals that have finished flowering, fruiting, and setting seed.
 - hab_typ_d: Habitat type domain value
 - plant_comm: The plant community following the most recent Vegetation Communities of San Diego County by Oberbauer.
 - assoc_plants: Separate scientific names with a comma and then a space
 - aspect: For example, NW (Steep)
 - elevation: The elevation in meters.
 - **coord_x**: Longitude in decimal degrees (e.g., - 117.37094)
 - **coord_y**: Latitude in decimal degrees (e.g., 33.22736)
- Spreadsheet of milkweed locations, which will have the following columns (exact field names may change after migration to new SDSFIE version):
 - **scien_name**: Scientific name
 - **pop_date**: YYYYMMDD format
 - **pop_count**: Number of plants
 - **plant_comm**:
 - **surveyor**: Name of surveyor
 - **elevation**: The elevation in meters.
 - **coord_x**: Longitude in decimal degrees (e.g., - 117.37094)
 - **coord_y**: Latitude in decimal degrees (e.g., 33.22736)

Task 4: Yearly Summary Report

A report is due for each year of this agreement. A separate report will be provided for any work conducted aboard NWS Fallbrook. A draft report (electronic [.doc and searchable .pdf]) shall be submitted within 30 days of conclusion of field work. It is the responsibility of the Cooperator to assure that all electronic deliverables are fully compatible and functional based on the current applications used by Environmental Security. The BTR will review the draft report and provide

comments to the Cooperator. Within 10 calendar days of receipt of Government comments, the Cooperator will provide a pre-final report (electronic [.doc and searchable .pdf]), along with the responses to the comments. The BTR will review the pre-final report and provide comments to the Cooperator. Within 5 calendar days of receipt of Government comments, the Cooperator will provide a final report (electronic [.doc and searchable .pdf]), along with the responses to the comments.

Task 5: Base Plant Voucher Checklist

The Base plant voucher checklist is due for each year of this agreement. A separate checklist will be provided for any work conducted aboard NWS Fallbrook. The checklist for NWS Fallbrook does not need to include the following columns: Voucher from SDSU, Is this Plant Counted, JM2 Common Name, Listed Rebman 2006, Listed Jepson 1996, and Jepson 1996 Pg.

The Cooperator will update the Base plant voucher checklist with the new plant vouchers according to Table 1. A qualified botanist or biologist is required to complete this task. The checklist will be updated with any revisions to plant taxonomy and any recent synonyms will be entered into the checklist. The Cooperator will review and update federal, state, and CNPS (California Native Plant Species) status on the existing voucher checklist.

A draft checklist (electronic) shall be submitted within 30 days of conclusion of field work. It is the responsibility of the Cooperator to assure that all electronic deliverables are fully compatible and functional based on the current applications used by Environmental Security. The BTR will review the draft checklist and provide comments to the Cooperator. Within 10 calendar days of receipt of Government comments, the Cooperator will provide a pre-final checklist (electronic), along with the responses to the comments. The BTR will review the pre-final checklist and provide comments to the Cooperator. Within 5 calendar days of receipt of Government comments, the Cooperator will provide a final checklist (electronic), along with the responses to the comments.

Option 3A:

Government

The government will facilitate base access, coordinate range access, assist with field collection and plant identification, and review data and reports.

Cooperator

Task 1: Herbarium Collecting

The Cooperator will collect herbarium specimens for the purpose of preparing a scientifically reputable floristic spreadsheet checklist for the Base. Plants will be collected in accordance to the San Diego Natural History Museum Plant Atlas Grid Square system method. All surveys aboard NWS Fallbrook, if any, will follow the same methodology as the Base surveys and the results will be located in a separate report and checklist.

All new plants identified on Base will be recorded in the checklist and vouchered. There will be a minimum of five (5) field days for option 3A.

All rare plant populations that are not in the Base rare plant dataset will be counted and mapped using a GPS unit with a minimum of 3-meter accuracy. The number of plants in each phenology stage (vegetative, flower bud, flowering, fruiting, and senescent), plant community, associated plants, aspect, disturbances, latitude, and longitude will be recorded.

Any new invasive species (and invasive species infestations) which are located on Base will be counted and mapped using a Global Positioning System (GPS) unit with a minimum of 3-meter accuracy. The number of individuals, latitude, and longitude will be provided to the BTR in the form of a spreadsheet for the field survey reports and will be in a Geographical Information System (GIS) dataset as part of the agreement deliverables.

All milkweed species used by the monarch butterfly will be counted and mapped using a GPS unit with a minimum of 3-meter accuracy. The plant community will also be recorded.

During all field surveys, GPS units will be set to collect streaming line data to show what areas of the Base where surveyed, on what date, and by how many people. The collection of streaming line data will be disabled, or the GPS unit will be turned off, when not surveying. There should be no line features depicting where the vehicles were driven. The survey routes from all survey events shall be provided to the Land Management Section as a GIS feature class.

During the Plant Atlas project, the botanists associated with the project will be accompanied by Base resource management personnel. The purpose of this field shadowing experience is to provide Base personnel with excellent, hands-on botanical training to include: plant identification, survey methods, how to collect herbarium-quality voucher specimens, and how to record botanical field data. Such training is critical for Base Land Management personnel to gain perspective on invasive plant distributions, special plant species, and botanical habitat characteristics, which has applications to a wide variety of natural resource programs on base.

Task 2: Kick-Off Meeting

The Cooperator shall attend a kick-off meeting with the Land Management Section prior to conducting the field work. The purpose of the kick-off meeting is to discuss the purpose of the project, timelines, data management formats, explain Base access and security requirements/restrictions, clarify schedules, answer any questions the Cooperator may have regarding the project, and discuss other pertinent information which could have a bearing on the work to be performed. The Cooperator will prepare the kick-off meeting notes and include them in the first field survey report.

Task 3: Field Survey Reports

Within 10 calendar days after each field visit, the Cooperator will send an e-mail to the Base Technical Representative (BTR) and the Navy Technical Representative (NTR) with the following information:

- New Additions to the Base Checklist
- New Vouchers for Existing Species in the Base Checklist
- Rediscoveries of Plants Previously Documented on the Base
- New San Diego County records
- Rare Plant Species Observations
- Invasive Species Observations
- Any Other Notable Observations
- Spreadsheet of invasive species locations, which will have the following columns:
 - **scien_name:** Scientific name
 - **pop_date:** YYYYMMDD format
 - **pop_count:** Number of plants
 - **surveyor:** Name of surveyor
 - **elevation:** The elevation in meters.
 - **coord_x:** Longitude in decimal degrees (e.g., - 117.37094)
 - **coord_y:** Latitude in decimal degrees (e.g., 33.22736)
- Spreadsheet of rare plant locations, which will have the following columns (exact field names may change after migration to new SDSFIE version):
 - **scien_name:** Scientific name
 - **pop_date:** YYYYMMDD format
 - **pop_count:** Number of plants. The sum of the phenology stages should equal the **pop_count**.
 - **vegetative:** The number of individuals in the vegetative stage.
 - **flower_bud:** The number of individuals with flower buds.
 - **flowering:** The number of individuals flowering.
 - **fruiting:** The number of individuals fruiting and setting seed.
 - **senescent:** The number of individuals that have finished flowering, fruiting, and setting seed.
 - **hab_typ_d:** Habitat type domain value
 - **plant_comm:** The plant community following the most recent Vegetation Communities of San Diego County by Oberbauer.
 - **assoc_plants:** Separate scientific names with a comma and then a space
 - **aspect:** For example, NW (Steep)
 - **elevation:** The elevation in meters.
 - **coord_x:** Longitude in decimal degrees (e.g., - 117.37094)
 - **coord_y:** Latitude in decimal degrees (e.g., 33.22736)
- Spreadsheet of milkweed locations, which will have the following columns (exact field names may change after migration to new SDSFIE version):
 - **scien_name:** Scientific name
 - **pop_date:** YYYYMMDD format

- **pop_count:** Number of plants
- **plant_comm:**
- **surveyor:** Name of surveyor
- **elevation:** The elevation in meters.
- **coord_x:** Longitude in decimal degrees (e.g., - 117.37094)
- **coord_y:** Latitude in decimal degrees (e.g., 33.22736)

Task 4: Yearly Summary Report

A report is due for each year of this agreement. A separate report will be provided for any work conducted aboard NWS Fallbrook. A draft report (electronic [.doc and searchable .pdf]) shall be submitted within 30 days of conclusion of field work. It is the responsibility of the Cooperator to assure that all electronic deliverables are fully compatible and functional based on the current applications used by Environmental Security. The BTR will review the draft report and provide comments to the Cooperator. Within 10 calendar days of receipt of Government comments, the Cooperator will provide a pre-final report (electronic [.doc and searchable .pdf]), along with the responses to the comments. The BTR will review the pre-final report and provide comments to the Cooperator. Within 5 calendar days of receipt of Government comments, the Cooperator will provide a final report (electronic [.doc and searchable .pdf]), along with the responses to the comments.

Task 5: Base Plant Voucher Checklist

The Base plant voucher checklist is due for each year of this agreement. A separate checklist will be provided for any work conducted aboard NWS Fallbrook. The checklist for NWS Fallbrook does not need to include the following columns: Voucher from SDSU, Is this Plant Counted, JM2 Common Name, Listed Rebman 2006, Listed Jepson 1996, and Jepson 1996 Pg.

The Cooperator will update the Base plant voucher checklist with the new plant vouchers according to Table 1. A qualified botanist or biologist is required to complete this task. The checklist will be updated with any revisions to plant taxonomy and any recent synonyms will be entered into the checklist. The Cooperator will review and update federal, state, and CNPS (California Native Plant Species) status on the existing voucher checklist.

A draft checklist (electronic) shall be submitted within 30 days of conclusion of field work. It is the responsibility of the Cooperator to assure that all electronic deliverables are fully compatible and functional based on the current applications used by Environmental Security. The BTR will review the draft checklist and provide comments to the Cooperator. Within 10 calendar days of receipt of Government comments, the Cooperator will provide a pre-final checklist (electronic), along with the responses to the comments. The BTR will review the pre-final checklist and provide comments to the Cooperator. Within 5 calendar days of receipt of Government comments, the Cooperator will provide a final checklist (electronic), along with the responses to the comments.

Option 4:

Government

The government will facilitate base access, coordinate range access, assist with field collection and plant identification, and review data and reports.

Cooperator

Task 1: Herbarium Collecting

The Cooperator will collect herbarium specimens for the purpose of preparing a scientifically reputable floristic spreadsheet checklist for the Base. Plants will be collected in accordance to the San Diego Natural History Museum Plant Atlas Grid Square system method. All surveys aboard NWS Fallbrook, if any, will follow the same methodology as the Base surveys and the results will be located in a separate report and checklist.

All new plants identified on Base will be recorded in the checklist and vouchered. There will be a minimum of eleven (11) field days for Option 4.

All rare plant populations that are not in the Base rare plant dataset will be counted and mapped using a GPS unit with a minimum of 3-meter accuracy. The number of plants in each phenology stage (vegetative, flower bud, flowering, fruiting, and senescent), plant community, associated plants, aspect, disturbances, latitude, and longitude will be recorded.

Any new invasive species (and invasive species infestations) which are located on Base will be counted and mapped using a Global Positioning System (GPS) unit with a minimum of 3-meter accuracy. The number of individuals, latitude, and longitude will be provided to the BTR in the form of a spreadsheet for the field survey reports and will be in a Geographical Information System (GIS) dataset as part of the agreement deliverables.

All milkweed species used by the monarch butterfly will be counted and mapped using a GPS unit with a minimum of 3-meter accuracy. The plant community will also be recorded.

During all field surveys, GPS units will be set to collect streaming line data to show what areas of the Base were surveyed, on what date, and by how many people. The collection of streaming line data will be disabled, or the GPS unit will be turned off, when not surveying. There should be no line features depicting where the vehicles were driven. The survey routes from all survey events shall be provided to the Land Management Section as a GIS feature class.

During the Plant Atlas project, the botanists associated with the project will be accompanied by Base resource management personnel. The purpose of this field shadowing experience is to provide Base personnel with excellent, hands-on botanical training to include: plant identification, survey methods, how to collect herbarium-quality voucher specimens, and how to record botanical field data. Such training is critical for Base Land Management personnel to gain perspective on invasive plant distributions, special plant species, and botanical habitat characteristics, which has applications to a wide variety of natural resource programs on base.

Task 2: Kick-Off Meeting

The Cooperator shall attend a kick-off meeting with the Land Management Section prior to conducting the field work. The purpose of the kick-off meeting is to discuss the purpose of the project, timelines, data management formats, explain Base access and security requirements/restrictions, clarify schedules, answer any questions the Cooperator may have regarding the project, and discuss other pertinent information which could have a bearing on the work to be performed. The Cooperator will prepare the kick-off meeting notes and include them in the first field survey report.

Task 3: Field Survey Reports

Within 10 calendar days after each field visit, the Cooperator will send an e-mail to the Base Technical Representative (BTR) and the Navy Technical Representative (NTR) with the following information:

- New Additions to the Base Checklist
- New Vouchers for Existing Species in the Base Checklist
- Rediscoveries of Plants Previously Documented on the Base
- New San Diego County records
- Rare Plant Species Observations
- Invasive Species Observations
- Any Other Notable Observations
- Spreadsheet of invasive species locations, which will have the following columns:
 - `scien_name`: Scientific name
 - `pop_date`: YYYYMMDD format
 - `pop_count`: Number of plants
 - `surveyor`: Name of surveyor
 - `elevation`: The elevation in meters.
 - `coord_x`: Longitude in decimal degrees (e.g., - 117.37094)
 - `coord_y`: Latitude in decimal degrees (e.g., 33.22736)
- Spreadsheet of rare plant locations, which will have the following columns (exact field names may change after migration to new SDSFIE version):
 - `scien_name`: Scientific name
 - `pop_date`: YYYYMMDD format
 - `pop_count`: Number of plants. The sum of the phenology stages should equal the `pop_count`.
 - `vegetative`: The number of individuals in the vegetative stage.
 - `flower_bud`: The number of individuals with flower buds.
 - `flowering`: The number of individuals flowering.
 - `fruiting`: The number of individuals fruiting and setting seed.
 - `senescent`: The number of individuals that have finished flowering, fruiting, and setting seed.
 - `hab_typ_d`: Habitat type domain value
 - `plant_comm`: The plant community following the most recent Vegetation Communities of San Diego County by Oberbauer.

- assoc_plants: Separate scientific names with a comma and then a space
- aspect: For example, NW (Steep)
- elevation: The elevation in meters.
- **coord_x**: Longitude in decimal degrees (e.g., - 117.37094)
- **coord_y**: Latitude in decimal degrees (e.g., 33.22736)
- Spreadsheet of milkweed locations, which will have the following columns (exact field names may change after migration to new SDSFIE version):
 - **scien_name**: Scientific name
 - **pop_date**: YYYYMMDD format
 - **pop_count**: Number of plants
 - **plant_comm**:
 - **surveyor**: Name of surveyor
 - **elevation**: The elevation in meters.
 - **coord_x**: Longitude in decimal degrees (e.g., - 117.37094)
 - **coord_y**: Latitude in decimal degrees (e.g., 33.22736)

Task 4: Yearly Summary Report

A report is due for each year of this agreement. A separate report will be provided for any work conducted aboard NWS Fallbrook. A draft report (electronic [.doc and searchable .pdf]) shall be submitted within 30 days of conclusion of field work. It is the responsibility of the Cooperator to assure that all electronic deliverables are fully compatible and functional based on the current applications used by Environmental Security. The BTR will review the draft report and provide comments to the Cooperator. Within 10 calendar days of receipt of Government comments, the Cooperator will provide a pre-final report (electronic [.doc and searchable .pdf]), along with the responses to the comments. The BTR will review the pre-final report and provide comments to the Cooperator. Within 5 calendar days of receipt of Government comments, the Cooperator will provide a final report (electronic [.doc and searchable .pdf]), along with the responses to the comments.

Task 5: Base Plant Voucher Checklist

The Base plant voucher checklist is due for each year of this agreement. A separate checklist will be provided for any work conducted aboard NWS Fallbrook. The checklist for NWS Fallbrook does not need to include the following columns: Voucher from SDSU, Is this Plant Counted, JM2 Common Name, Listed Rebman 2006, Listed Jepson 1996, and Jepson 1996 Pg.

The Cooperator will update the Base plant voucher checklist with the new plant vouchers according to Table 1. A qualified botanist or biologist is required to complete this task. The checklist will be updated with any revisions to plant taxonomy and any recent synonyms will be entered into the checklist. The Cooperator will review and update federal, state, and CNPS (California Native Plant Species) status on the existing voucher checklist.

A draft checklist (electronic) shall be submitted within 30 days of conclusion of field work. It is the responsibility of the Cooperator to assure that all electronic deliverables are fully compatible

and functional based on the current applications used by Environmental Security. The BTR will review the draft checklist and provide comments to the Cooperator. Within 10 calendar days of receipt of Government comments, the Cooperator will provide a pre-final checklist (electronic), along with the responses to the comments. The BTR will review the pre-final checklist and provide comments to the Cooperator. Within 5 calendar days of receipt of Government comments, the Cooperator will provide a final checklist (electronic), along with the responses to the comments.

Option 4A:

Government

The government will facilitate base access, coordinate range access, assist with field collection and plant identification, and review data and reports.

Cooperator

Task 1: Herbarium Collecting

The Cooperator will collect herbarium specimens for the purpose of preparing a scientifically reputable floristic spreadsheet checklist for the Base. Plants will be collected in accordance to the San Diego Natural History Museum Plant Atlas Grid Square system method. All surveys aboard NWS Fallbrook, if any, will follow the same methodology as the Base surveys and the results will be located in a separate report and checklist.

All new plants identified on Base will be recorded in the checklist and vouchered. There will be a minimum of five (5) field days for option 4A.

All rare plant populations that are not in the Base rare plant dataset will be counted and mapped using a GPS unit with a minimum of 3-meter accuracy. The number of plants in each phenology stage (vegetative, flower bud, flowering, fruiting, and senescent), plant community, associated plants, aspect, disturbances, latitude, and longitude will be recorded.

Any new invasive species (and invasive species infestations) which are located on Base will be counted and mapped using a Global Positioning System (GPS) unit with a minimum of 3-meter accuracy. The number of individuals, latitude, and longitude will be provided to the BTR in the form of a spreadsheet for the field survey reports and will be in a Geographical Information System (GIS) dataset as part of the agreement deliverables.

All milkweed species used by the monarch butterfly will be counted and mapped using a GPS unit with a minimum of 3-meter accuracy. The plant community will also be recorded.

During all field surveys, GPS units will be set to collect streaming line data to show what areas of the Base where surveyed, on what date, and by how many people. The collection of streaming line data will be disabled, or the GPS unit will be turned off, when not surveying. There should

be no line features depicting where the vehicles were driven. The survey routes from all survey events shall be provided to the Land Management Section as a GIS feature class.

During the Plant Atlas project, the botanists associated with the project will be accompanied by Base resource management personnel. The purpose of this field shadowing experience is to provide Base personnel with excellent, hands-on botanical training to include: plant identification, survey methods, how to collect herbarium-quality voucher specimens, and how to record botanical field data. Such training is critical for Base Land Management personnel to gain perspective on invasive plant distributions, special plant species, and botanical habitat characteristics, which has applications to a wide variety of natural resource programs on base.

Task 2: Kick-Off Meeting

The Cooperator shall attend a kick-off meeting with the Land Management Section prior to conducting the field work. The purpose of the kick-off meeting is to discuss the purpose of the project, timelines, data management formats, explain Base access and security requirements/restrictions, clarify schedules, answer any questions the Cooperator may have regarding the project, and discuss other pertinent information which could have a bearing on the work to be performed. The Cooperator will prepare the kick-off meeting notes and include them in the first field survey report.

Task 3: Field Survey Reports

Within 10 calendar days after each field visit, the Cooperator will send an e-mail to the Base Technical Representative (BTR) and the Navy Technical Representative (NTR) with the following information:

- New Additions to the Base Checklist
- New Vouchers for Existing Species in the Base Checklist
- Rediscoveries of Plants Previously Documented on the Base
- New San Diego County records
- Rare Plant Species Observations
- Invasive Species Observations
- Any Other Notable Observations
- Spreadsheet of invasive species locations, which will have the following columns:
 - `scien_name`: Scientific name
 - `pop_date`: YYYYMMDD format
 - `pop_count`: Number of plants
 - `surveyor`: Name of surveyor
 - `elevation`: The elevation in meters.
 - `coord_x`: Longitude in decimal degrees (e.g., - 117.37094)
 - `coord_y`: Latitude in decimal degrees (e.g., 33.22736)
- Spreadsheet of rare plant locations, which will have the following columns (exact field names may change after migration to new SDSFIE version):
 - `scien_name`: Scientific name

- pop_date: YYYYMMDD format
- pop_count: Number of plants. The sum of the phenology stages should equal the pop_count.
- vegetative: The number of individuals in the vegetative stage.
- flower_bud: The number of individuals with flower buds.
- flowering: The number of individuals flowering.
- fruiting: The number of individuals fruiting and setting seed.
- senescent: The number of individuals that have finished flowering, fruiting, and setting seed.
- hab_typ_d: Habitat type domain value
- plant_comm: The plant community following the most recent Vegetation Communities of San Diego County by Oberbauer.
- assoc_plants: Separate scientific names with a comma and then a space
- aspect: For example, NW (Steep)
- elevation: The elevation in meters.
- coord_x: Longitude in decimal degrees (e.g., - 117.37094)
- coord_y: Latitude in decimal degrees (e.g., 33.22736)
- Spreadsheet of milkweed locations, which will have the following columns (exact field names may change after migration to new SDSFIE version):
 - scien_name: Scientific name
 - pop_date: YYYYMMDD format
 - pop_count: Number of plants
 - plant_comm:
 - surveyor: Name of surveyor
 - elevation: The elevation in meters.
 - coord_x: Longitude in decimal degrees (e.g., - 117.37094)
 - coord_y: Latitude in decimal degrees (e.g., 33.22736)

Task 4: Yearly Summary Report

A report is due for each year of this agreement. A separate report will be provided for any work conducted aboard NWS Fallbrook. A draft report (electronic [.doc and searchable .pdf]) shall be submitted within 30 days of conclusion of field work. It is the responsibility of the Cooperator to assure that all electronic deliverables are fully compatible and functional based on the current applications used by Environmental Security. The BTR will review the draft report and provide comments to the Cooperator. Within 10 calendar days of receipt of Government comments, the Cooperator will provide a pre-final report (electronic [.doc and searchable .pdf]), along with the responses to the comments. The BTR will review the pre-final report and provide comments to the Cooperator. Within 5 calendar days of receipt of Government comments, the Cooperator will provide a final report (electronic [.doc and searchable .pdf]), along with the responses to the comments.

Task 5: Base Plant Voucher Checklist

The Base plant voucher checklist is due for each year of this agreement. A separate checklist will be provided for any work conducted aboard NWS Fallbrook. The checklist for NWS Fallbrook does not need to include the following columns: Voucher from SDSU, Is this Plant Counted, JM2 Common Name, Listed Rebman 2006, Listed Jepson 1996, and Jepson 1996 Pg.

The Cooperator will update the Base plant voucher checklist with the new plant vouchers according to Table 1. A qualified botanist or biologist is required to complete this task. The checklist will be updated with any revisions to plant taxonomy and any recent synonyms will be entered into the checklist. The Cooperator will review and update federal, state, and CNPS (California Native Plant Species) status on the existing voucher checklist.

A draft checklist (electronic) shall be submitted within 30 days of conclusion of field work. It is the responsibility of the Cooperator to assure that all electronic deliverables are fully compatible and functional based on the current applications used by Environmental Security. The BTR will review the draft checklist and provide comments to the Cooperator. Within 10 calendar days of receipt of Government comments, the Cooperator will provide a pre-final checklist (electronic), along with the responses to the comments. The BTR will review the pre-final checklist and provide comments to the Cooperator. Within 5 calendar days of receipt of Government comments, the Cooperator will provide a final checklist (electronic), along with the responses to the comments.

Period of Performance:

Base Year: The period of performance for this task order shall start on the date of award in 2015 and end on 30 September 2016 (no more than 18 months).

Option 1: The period of performance for this task order shall start on the date of award in 2016 and end on 30 September 2017 (no more than 18 months).

Option 1A: The period of performance for this task order shall start on the date of award in 2016 and end on 30 September 2017 (no more than 18 months).

Option 2: The period of performance for this task order shall start on the date of award in 2017 and end on 30 September 2018 (no more than 18 months).

Option 2A: The period of performance for this task order shall start on the date of award in 2017 and end on 30 September 2018 (no more than 18 months).

Option 3: The period of performance for this task order shall start on the date of award in 2018 and end on 30 September 2019 (no more than 18 months).

Option 3A: The period of performance for this task order shall start on the date of award in 2018 and end on 30 September 2019 (no more than 18 months).

Option 4: The period of performance for this task order shall start on the date of award in 2019 and end on 31 August 2020 (no more than 12 months).

Option 4A: The period of performance for this task order shall start on the date of award in 2019 and end on 31 August 2020 (no more than 12 months).

Project end date can be earlier than Period of Performance if all Tasks are completed and approved by NTR and Base Representatives.

Materials Requested for Statement of Interest/Qualifications:

Please provide the following via e-mail attachment to Kimberly.pryor@navy.mil, 757-322-4594

(Maximum length: 6 pages, single-spaced 12 pt. font).

1. Name, CESU affiliation and contact information
2. Statement of credentials/qualifications of key personnel
3. Project proposal to include timelines, roles and responsibilities of personnel, specific tasks to be conducted, and deliverables. Please be as specific as possible.
4. Cost estimate of the proposed work to include labor, materials and travel.
5. Narrative of safety practices/procedures.

We are intending to use fiscal year 2015 funds for this project. A detailed study proposal and cost estimate are requested at this time.

Review of Statements Received: Proposals will be evaluated based on the four factors listed below and include the credentials of key personnel, scientific approach, reasonableness of the cost and safety plan. Evaluation factors are co-equal to each other.

Factor 1 - Credentials of Key Personnel

Project Manager. This individual must have:

- a minimum of a Bachelor's degree in Wildlife Biology or related science disciplines; and
- a minimum of 5-years experience in a responsible position providing oversight of, support to or directly involved in projects related to the conservation, management and research of raptors; and
- expertise in the analysis of the movement patters and habitat use of radio telemetry datasets
- required state and federal permits

Technical Staff. Technical Staff must have:

- a minimum of 2 years experience in a responsible position providing habitat management, biological research and wildlife management activities.

Survey Pilot. The Pilot must have:

- all required flight licenses and aircraft inspections to operate within California
- the ability to obtain the required FAA/military/air traffic pre-flight approvals for low level flights over military installations and within required air spaces of all bases

The Cooperator shall include a brief Statement of Qualifications (including):

- a. Biographical Sketch,
- b. Relevant past projects and clients with brief descriptions of these projects,
- c. Staff, faculty or students available to work on this project and their areas of expertise,
- d. Any brief description of capabilities to successfully complete the project
you may wish to add (e.g. equipment, laboratory facilities, field facilities, etc.). (Note: labor shall include labor category, hourly labor rate and number of hours; materials shall include an itemized breakdown of material, quantity and unit cost and travel shall include number of persons traveling, estimated airfare or privately owned vehicle mileage, estimated rental car and estimated lodging; Pursuant to the CESU Network Federal Agency Memorandum of Understanding (30 August, 2013), application of the CESU Network system-wide indirect cost rate of 17.5% is expected.)
- e. Narrative of safety practices/procedures.

Factor 2 – Scientific Approach – The Cooperator shall develop a proposal addressing the analysis of the Eagle radio telemetry dataset to include an evaluation of movement patterns and habitat use. The Cooperator shall discuss their proposed approach and techniques to accomplish the objectives. Cooperator’s proposals will be evaluated by a team of technical and contracting personnel from NAVFAC Atlantic and NAS Oceana. Proposals will be evaluated based on their soundness of the overall approach to accomplish the anticipated work’s stated objectives.

Factor 3 – Reasonableness of Cost –The Cooperator’s proposals shall be analyzed to determine whether it is reasonable with respect to the overall cost or separately priced items, and for fair and reasonable pricing.

Factor 4 – Technical Approach to Safety

The Cooperator shall provide a narrative of describing how safety practices/procedures will be implemented to complete the proposed work. Proposals shall be analyzed to determine how the Cooperator will implement safety practices/procedures and determine the degree to which innovations are being proposed that may enhance safety on this procurement. The Government is seeking to determine that the Cooperator has demonstrated a commitment to safety and that the Cooperator plans to properly manage and implement safety procedures for itself.

Responsibility of Base Government Representative:

1. The government will facilitate base access, coordinate range access, assist with field collection and plant identification, and review data and reports.

2. Base Representative will provide GIS data layers necessary to complete deliverables.

Responsibility of the Cooperator:

1. To furnish all materials, equipment, supplies, labor and services necessary to conduct the tasks discussed previously except for the items mentioned in this section.
2. Procure 12 transmitters according to the specifications provided by Base Representative POC.
3. To comply with all Occupational Safety and Health Administration (OSHA) requirements. It is the awardees responsibility to conduct all field activities in a manner that ensures the training and safety of the field crewmembers and avoids damage to vehicles and property. The Navy is not responsible for any Cooperator injuries during the time of this project.
4. To coordinate each visit with the designated POC's

Please send responses or direct questions to:

Kimberly Pryor
Contract Specialist
NAVFAC Atlantic
Environmental Contracts Branch
Phone: 757-322-4594
E-mail: Kimberly.pryor@navy.mil

***Kim complete after legal review.**

Timeline for Review of Statements of Interest: We request that Statements of Interest be submitted by 01 September 2015, 4:00 pm eastern standard time. This Request for Statements of Interest will remain open until that time.