

FLORIDA FISH AND WILDLIFE CONSERVATION COMMISSION



FWC Small Unmanned Aircraft Systems (sUAS) Use and Safety Manual

April 16, 2022

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1. Purpose

This manual establishes requirements and minimum safety standards for FWC use of small, unmanned aircraft systems (sUAS) by non-law enforcement staff. This is solely for the non-law enforcement purposes of fish and wildlife management and conservation currently allowed for by state law.

2. Definitions

FWC sUAS Use and Safety Manager (sUAS Safety Manager) – Employee assigned the responsibility for safety policy compliance throughout FWC.

- Distributes state and federal regulations, policy modifications, and related materials to FWC staff.
- Coordinates or facilitates any required sUAS use and safety training.
- Ensures that records of any required employee or approved volunteer certifications related to sUAS are recorded in the FWC Drone Fleet Management System (e.g., a computer-based, mobile app type data entry and organization system).
- Leads sUAS Standing Team which is responsible for addressing evolving issues and standards. This team is to be composed of the sUAS Use and Safety Liaisons.

sUAS Use and Safety Liaisons (Liaisons) – Employee(s) appointed by each Division/Office (D/O) director. Liaisons may represent multiple D/Os and have the following responsibilities:

- Support actions of and coordinate with the sUAS Safety Manager.
- Policy compliance within the respective D/O.
- Familiarizes new sUAS operators within the D/O with sUAS use and safety manual and the FWC Drone Fleet Management System.
- Facilitates any required sUAS use and safety training for D/O staff and approved volunteers.
- Provides documentation of completed employee training to the sUAS Safety Manager.
- Coordinates complete and accurate uploading of sUAS flight use data via the FWC Drone Fleet Management System.
- Ensures that staff and approved volunteers are aware of and comply with all FWC procedures related to safe sUAS operations.
- Notifies appropriate D/O leadership of actions needed in case of an emergency related to the use of a sUAS.
- Serves as a member of the sUAS Standing Team.

sUAS Field Leader (Field Leader) – FWC employee or volunteer who is the leader of a field data collection operation/project using a sUAS.

- Oversees the safe implementation of overall field operations (not just sUAS related activities).

- Ensures that any FWC staff or volunteers performing the function of Pilot in Command are certified and the Person Manipulating Controls is trained to do so and familiar with related FWC rules and policies.
- Files Field sUAS use data via the FWC Drone Fleet Management System. Flight plan information is critical to ensure FWC LE flight operators are fully aware of any and all sUAS flights in an area they may be operating in.
- Ensures that sUAS Flight Plans are filed via FWC Drone Fleet Management System prior to launches.
- Ensures that express written permission to fly and/or collect data using an sUAS is obtained from all applicable owners, tenants, occupants, invitees, or licensees of private property before a sUAS is flown over that property.
- Does not need to be present in the field during sUAS flights.
- Ensures all data collected during the flight are stored according to OIT policy.
- Responsible for coordinating the provision of data in the event of a Public Records Request.

sUAS Pilot in Command (Pilot) – FWC employee or volunteer (vetted by Field Leader or other appropriate personnel) who holds Federal Aviation Administration (FAA) Part 107 Remote Pilot Certificate (i.e., License). The FWC employee or approved volunteer must have successfully completed a FWC or FWC-approved sUAS use and safety certification program.

- Must be physically present in the field for sUAS to be flown.
- Responsible (via Federal Regulations) for all sUAS activities related to the operation of the sUAS in the field. Responsibilities include initiating required safety checklist prior to each sUAS flight, ensuring the sUAS is airworthy before each flight, ensuring all personnel present during flight are briefed on operations, and making the decision on whether to fly.
- Maintains sUAS Flight and Battery Use Logs. These logs are necessary to ensure proper maintenance, flight worthiness and safety of the sUAS.
- In absence of Field Leader, submits sUAS Flight Plans through the FWC Drone Fleet Management System prior to launch.
- Field Leader can delegate this responsibility to another person.

sUAS Person Manipulating the Controls (Controller) – FWC employee or approved volunteer manipulating the controls (i.e., flying) of an sUAS.

- FWC employee or approved volunteer must have successfully completed FWC or FWC-approved sUAS certification training but does not need to hold a valid FAA Part 107 Remote Pilot Certificate.
- Cannot pilot an sUAS without the Pilot being physically present and ready to take control of the sUAS when deemed necessary by the Pilot.

FWC Drone Fleet Management System – A computer and mobile app-based, or similar, system for the deposition of all flight information (e.g., Field sUAS Use, daily flight plans, certifications, permits, logs, etc.) related to FWCs use of sUAS. The purpose of this system is to expedite entry and organization of sUAS-related flight information and provide one place where anyone needing information on FWC sUAS operations can obtain such information.

sUAS Observer (Observer) – Employee or volunteer who is responsible for maintaining visual contact with the sUAS during a flight.

Field sUAS Use Information – Information that associates the use of sUAS with a project or specific management activity (e.g., Annual Mottled Duck Survey, Prescribed Burning – Three Lakes Wildlife Management Area). This will allow FWC personnel to efficiently determine on which and on how many projects sUAS are being used. Information is entered during project approval process or as soon as it is known that a sUAS will be used on an existing project or activity. This is managed through the FWC Drone Fleet Management System.

sUAS Flight Plans – Information associated with the actual use of a sUAS (e.g., flight location, estimated flight times, flight durations, registration number of sUAS used, any issues that arise during flights). Information is submitted by the Field Leader prior to launch and closed after completed flight via the FWC Drone Fleet Management System.

Appropriate Public Authorities or Landowner – Persons that should be notified that sUAS will be used over areas under their jurisdiction/control, or in the event of an emergency involving the use of a sUAS. The geographic boundaries of sUAS flights will dictate the entities that need to be notified. For private landowners, reference express written permission requirements for use over Private Lands above.

3. Applicability

This manual applies to all FWC employees and approved volunteers operating FWC and non-FWC owned sUAS on FWC work time.

4. Manual

A. General Overview

The FWC sUAS **Safety Manager** will provide overarching guidance to ensure all basic operating and safety rules are defined and followed as well as all necessary certifications are acquired and maintained.

D/O directors will designate at least one employee to serve as a **Liaison** for their D/O. Liaisons may represent more than one D/O upon approval of the respective directors. These **Liaisons** will coordinate with the sUAS **Safety Manager** and be responsible for overseeing compliance with this manual for those staff they represent.

Liaisons will monitor D/O staff compliance with the FWC sUAS manual and coordinate or facilitate appropriate training in sUAS operation and safety for their D/O employees.

Each field crew using sUAS will have a **Field Leader** who will oversee the safe implementation of overall field operations. **Field Leaders** do not need to be in the field for each flight unless they also are functioning as the **Pilot in Command** or **Controller**. **Field Leaders** will be responsible for ensuring that all state and federal certifications/authorizations/permits have been acquired, including the requirement that the **Pilot in Command** for the current field work holds a valid FAA Part 107 Remote Pilot Certification from the FAA or falls under any existing agency Certificate of Waiver or Approval (COA). Moreover, they are responsible for ensuring all data associated with current field sUAS flight work is entered into the FWC Drone Fleet Management System. Lastly, they are responsible for taking all appropriate steps to safeguard citizen privacy during sUAS flights (see section B.4.).

The **Field Leader** has full authority to terminate the use of any sUAS being used on a project if any problems are discovered with the flight worthiness or privacy maintenance systems of an sUAS, or the competency of the **Pilot in Command**, and keep the sUAS grounded until conditions that caused the grounding are reconciled.

Note: In the event of an imminent accident or safety breach, any member of the team may terminate a flight based on their determination of unsafe conditions.

B. Operating and Safety Requirements

The following shall govern the operating and safety aspects for use of FWC sUAS. FWC-owned sUAS shall not be loaned out to non-agency personnel for non-agency work, or to circumvent the intent of this manual. All sUAS must be registered with the FAA and in proper working order (determined by the **Pilot**). All FAA and other Federal regulations pertaining to the use of sUAS by State agencies must be followed (link to appropriate Federal web pages here).

1. Prior to piloting an sUAS, employees or approved volunteers shall be in possession of a Part 107 Remote Pilot Certificate issued by the FAA, be covered by any existing agency Certificate of Authorization (COA) or be under the direct supervision of a person who holds such certification/coverage. Moreover, employees shall have successfully completed the FWC or FWC approved sUAS use and safety training prior to piloting (whether as a **Pilot** or **Controller**) a sUAS on FWC work time.
 - a) Employees and approved volunteers shall successfully complete the required use and safety training/certification. A copy of this certification shall be filed with the employee's personnel records and the sUAS **Safety Manager**. **Liaisons** shall ensure that staff have been appropriately trained and comply with the sUAS training requirements of FWC. Additionally, all certifications shall be entered into the FWC Drone Fleet Management System.
 - b) Use of an **Observer** is strongly encouraged, but not mandated unless the **Pilot** or person manipulating the controls is using "goggles", meaning, flying in First Person View (cockpit view).

A sUAS **Pilot** or **Controller** may serve as **Field Leader** but may not serve as their own **Observer** when an **Observer** is required.

- c) The FWC sUAS **Pilot** will be required to maintain sUAS Flight and Battery Use Logs as part of the FWC Drone Fleet Management System. These logs are necessary to ensure proper maintenance and thus the flight worthiness and safety of the sUAS. Moreover, they are vital to providing the FAA with needed information in case of an accident involving an FWC sUAS.
2. Entry of Field sUAS Use-Notification data in the FWC Drone Fleet Management System is required.
 - a) Prior to any sUAS operations on a given project, **Field sUAS Use Information** shall be entered into the current FWC Drone Fleet Management System by the **Field Leader** or their delegate. It is suggested that this information be entered during the planning stages of a project on which sUAS will be used, or as soon as it is determined that sUAS will be used on a project. This information can be provided to all landowners, public and private, over whose property the sUAS will be flown prior to the start of data collection with the sUAS. For emergency responses, the appropriate **Liaison** will notify the **Appropriate Public Authorities or Landowner** by phone/radio or other means necessary. In instances of after-hours emergencies, the regional FWC LE dispatch should be notified or 911 called.
 - b) **Field sUAS Use Information** will be used to ensure that all information needed by FWC relating to staff or approved volunteer use of sUAS is available when needed. In instances of FWC employee participation, on state time, with non-FWC sUAS use, it is recommended that **Field sUAS Use Information** be entered into the current FWC Drone Fleet Management System.
 - c) The **Field Leader** shall notify the appropriate **Liaison** as soon as possible of significant deviations from activities described in the filed **Field sUAS Use Information** by updating the data associated with the given project in the FWC Drone Fleet Management System.
 3. Filing of a daily Flight Plan through the FWC Drone Fleet Management System is required. On the day that a sUAS will be used, Flight Plan data shall be input into the FWC Drone Fleet Management System by the **Field Leader** or their delegate prior to launch.
 4. Employees and approved volunteers must take all appropriate steps to safeguard citizen privacy when using a sUAS. Please refer to the FAA B4UFLY app's UAS Privacy Best Practices document and any FWC policies regarding sUAS use and citizen privacy for how to safeguard [citizen privacy](#).
 - a) If sUAS use over private property is allowed by State law, **Field Leaders** will ensure that express written permission to fly and collect data using a sUAS is obtained from all private landowners before a sUAS is flown over private property. It is highly recommended that use of sUAS over public property also be approved by the property manager prior to the commencement of sUAS flight operations. These written permissions are to be entered into the FWC Drone Fleet Management System.
 - b) FWC employees and volunteers shall not collect data from unintended areas such as private property. **Field Leaders** and **Pilots in Command** will use appropriate technologies and procedures to ensure no sUAS intrusion into unauthorized airspace nor the collection of unauthorized data occurs. Such resources may include but may not be limited to; GIS to identify private lands along flight paths and allow for buffering of flight paths, and Geo-fencing software on sUAS to autonomously keep sUAS from straying into unauthorized airspace.

5. Staff and approved volunteers must use caution when operating sUAS and should refrain from using them during high winds or stormy conditions or in other situations likely to increase the risk of injury/damage to people, equipment, or property.
6. Staff and approved volunteers should be familiar with and follow all guidance or best management practices concerning use of sUAS around specific wildlife species.

C. Working with Contractors and Partners

1. All contractors or partners under FWC direction are required to provide flight plan data to the FWC project manager or their designee prior to conducting flights. This will include all information required to successfully submit an **sUAS Flight Plan**.
2. Specific details related to sUAS use such as licensing or certification, flight data, image acquisition and material deployment will be included in the contract or agreement.
3. All contracts or agreements will designate a **Field Leader** who will be responsible for receiving and uploading contractor/partner flight plan data in to the FWC Drone Fleet Management System.
4. Opportunistic sUAS flights can be conducted under the condition that regional FWC dispatch is notified, and confirmation received by the **Field Leader** that FWC LE air operations has been notified prior to sUAS launch.

D. sUAS Hardware

1. All purchases of sUAS devices must use Office of Information Technology, Network Services-approved vendor products and security configurations.
2. It is the user's responsibility to obtain OIT approval via the [OIT software/hardware request form](#) for sUAS purchases prior to the purchase. If approval is not obtained, the user must refrain from the purchase.
3. FWC users shall take reasonable precautions to protect sUAS devices in their possession from loss, theft, tampering, unauthorized access and damage.
4. FWC users shall immediately report lost or stolen sUAS devices according to FWC's Incident Reporting Procedures.