

# WildDrone

## Operational Guidelines

Version 1.0 February 12th, 2025

<b>Incident &amp; emergency contact list</b>	<b>1</b>
<b>Introduction</b>	<b>1</b>
<b>WildDrone operations, roles and responsibilities</b>	<b>2</b>
<b>Field team</b>	<b>3</b>
<b>Field Team Training</b>	<b>4</b>
<b>Tourist Encounters</b>	<b>4</b>
<b>Current Operational Permits:</b>	<b>5</b>
Daytime operations February to September 2025	5
Nighttime operations February to September 2025	5
<b>How to Assess a Flight Area</b>	<b>6</b>
<b>Safety &amp; Compliance</b>	<b>7</b>
<b>Contacting ATC</b>	<b>7</b>
<b>Logging Flights</b>	<b>7</b>
<b>Incident and Accident Reporting</b>	<b>8</b>
<b>Version history</b>	<b>8</b>

## Incident & emergency contact list

OI Pejeta Radio Room: +254 xxx xxx xxx (Phone and WhatsApp)

Nanyuki ATC Tower: +254 xxx xxx xxx

### WildDrone Operational Safety Team:

Name	Whatsapp	Email
Guy Maalouf	+xx xxxx xxxx	xxxxxxxxxxxxxx
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## Introduction

These operational guidelines are designed to enable you to conduct drone operations safely and in compliance with relevant regulations. They ensure that all flights align with our WildDrone safety requirements as well as external requirements when flying drones in OI Pejeta, Kenya.

These guidelines **do not replace** our procedures and checklists but supplement them. Procedures and checklists provide step-by-step actions for each operation, while these guidelines offer additional context to help you make informed decisions in the field.

**All drone pilots conducting drone flights within the WildDrone.EU project must follow these guidelines.** In case of any question please contact a member of the WildDrone Operational Safety Team (see below).

## **WildDrone operations, roles and responsibilities**

**WildDrone** being an EU project does not hold a Kenyan Remote Air Operator Certificate (ROC)<sup>1</sup> which is required to conduct drone operations in Kenya. WildDrone therefore has made an agreement with the company **Kenya Flying Labs (KFL)** to be able to fly under their ROC. This is a service that we pay a fee for. Though being a commercial entity, KFL is also a result of and partner within the non-profit organization WeRobotics<sup>2</sup> that establishes and coordinates flying labs all over the World.

When WildDrone submits an application for a given drone operation in a specific location (Ol Pejeta) in a given time frame, it is processed by KFL who brings it forward to the **Kenya Civil Aviation Authority (KCAA)**. The KCAA is the Kenyan authority of any civilian drone operations, however in our case, flying within the Ol Pejeta conservancy, we are not in civil but in military airspace. On any matters concerning the risk of flying in this airspace, KCAA therefore must consult **Kenya Airforce** and accept their decision.

This means that whenever the WildDrone project fly drones in Ol Pejeta, we have to follow the restrictions of our own application as well as any rules and requirements set forth by the KFL, KCAA and KA as well as the Ol Pejeta Conservancy that owns the land on which we are flying. Add to this the other permits we need to conduct our research, this quickly becomes very complex compared to flying a small drone under VLOS conditions in the EU.

The purpose of these guidelines and the associated procedures and checklists is to ensure that you as part of a WildDrone field team are able to operate safely and compliant with these requirements.

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<sup>1</sup> ROC holders: <https://www.kcaa.or.ke/sites/default/files/docs/uas/ROCs.pdf>

<sup>2</sup> WeRobotics: <https://werobotics.org>

## Field team

This section contains a description of roles and responsibilities for field team members. The required field team composition depends on the operation, therefore please see the section Current Operational Permits for further information about the team required to conduct a given operation.

### Remote Pilot in Command (RPIC)

- The RPIC is responsible for the flight and overall safety of the operation.
- Must hold EU **A1/A3** and **A2** Certificates.
- Must have logged at least 2.5 flight hours and 20 take-offs within the past 6 months before conducting any operation further away than 500 m.
- Must have read the application and permit for the specific operation
- Responsible for continuously monitoring **air risks**
- Has full authority over all decisions regarding the drone's flight path, compliance, and emergency responses.

### Assistant Pilot

- The Assistant Pilot plays a critical role in ensuring operational safety and **must also be qualified** as defined below. The Assistant Pilot can be a member of the WildDrone consortium, a member of the OI Pejeta Staff or a designated person from the KFL.
- Must hold an EU **A1/A3 Certificate**<sup>3</sup>
- Must have logged at least **2.5 flight hours** and 20 take-offs within the past 6 months as either RPIC or Assistant Pilot before conducting any operation further away than 500 m.
- Must have read the application and permit for the specific operation
- Responsible for supporting the RPIC in conducting **checklists and procedures** before, during, and after flights.
- Responsible for continuously monitoring **ground and air risks**, including wildlife, vehicles, and aircraft.
- Acts as the **designated driver** for contingency or emergency situations, ensuring a swift exit if dangerous wildlife approaches.
- Has the authority to veto any drone flight, if so the RPIC must abort the ongoing operation and safely land the drone.

### Ground Risk Observer

- In situations where the ground risk is considered non-trivial or the Assistant Pilot is for some reason unable to drive the car, a third person dedicated to ground observation/driving must be added.

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<sup>3</sup> EU A1/A3 certificate can be obtained online at no cost (<https://alphatango.aviation-civile.gouv.fr/login.jsp>)

## **Field Team Training**

When onboarding a new Assistant Pilot into the field team, an initial training is required. This training may be conducted in one of two ways:

### **1. Field Training during Wildlife Conservation Missions**

In this approach, the trainee joins a field team on an actual drone wildlife conservation mission alongside a qualified RPIC and an experienced Assistant Pilot. The trainee gains real-world experience by participating in tasks such as animal tracking and data collection.

### **2. Designated Training Sessions**

Typically, the RPIC selects a controlled location with clear airspace and good ground visibility. In some cases, an alternative location, such as behind the stables, may be used as an exception. It is always essential to restrict the flight altitude to a maximum of 20 m and to focus solely on training activities—practising manoeuvres, emergency procedures, and operational protocols—with any animal tracking.

### **Safety Requirements**

Both training formats must include a comprehensive briefing on checklists, contingency and emergency procedures. The trainee should be evaluated under supervision and must demonstrate competence before being allowed to operate independently.

## **Tourist Encounters**

If the field team encounters tourists nearby, it is essential to **keep a distance** and remain **outside their visual line of sight (VLOS)** to avoid disturbing their experience. Tourists pay a significant amount to visit the park, and our operations should not interfere with their time in nature.

If tourists stop and remain in the area for an extended period, **land the drone** to prevent unnecessary disruptions. If they are close to the landing zone, the **Assistant Pilot should approach them** to politely inform them that we are conducting **wildlife conservation operations in collaboration with the park** and that a drone will be landing nearby.

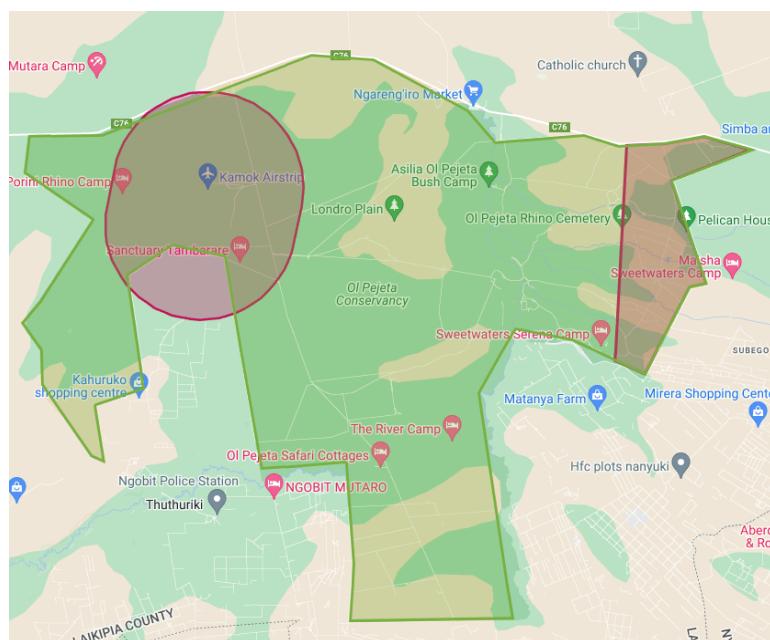
# Current Operational Permits:

## Daytime operations February to September 2025

The minimum field team required for conducting this operation is a RPIC and an Assistant Pilot as described under [Field team](#). If the ground risk is considered non-trivial, a third person dedicated as Ground Risk Observer must be added.

Below are the constraints set within the application we submitted to the KCAA:

- **Time of day:** Only daytime
- **Drone Platforms:** DJI Mavics
- **Flight boundaries:** boundaries of OPC
  - 250 ft (75 m) buffer with park edges.
- **No-fly zones:**
  - 4 km from Kamok
  - East of the Rhino Cemetery
  - Campgrounds
- **Vertical Operational Limit:** 250 ft AGL.
- **Maximum distance from pilot:** 1,000 m
- **Mobile communication with ATC:** at the start and end of operations.
- **Road Overflight Minimisation:** cross roads perpendicularly.
- **Pilot certification:** Pilot needs to have A1/A3 and A2 certification (or equivalent if outside EU)
- **Flight logs:** All flights will be added to the KFL flight logs. See [DroneLogBook](#) section below



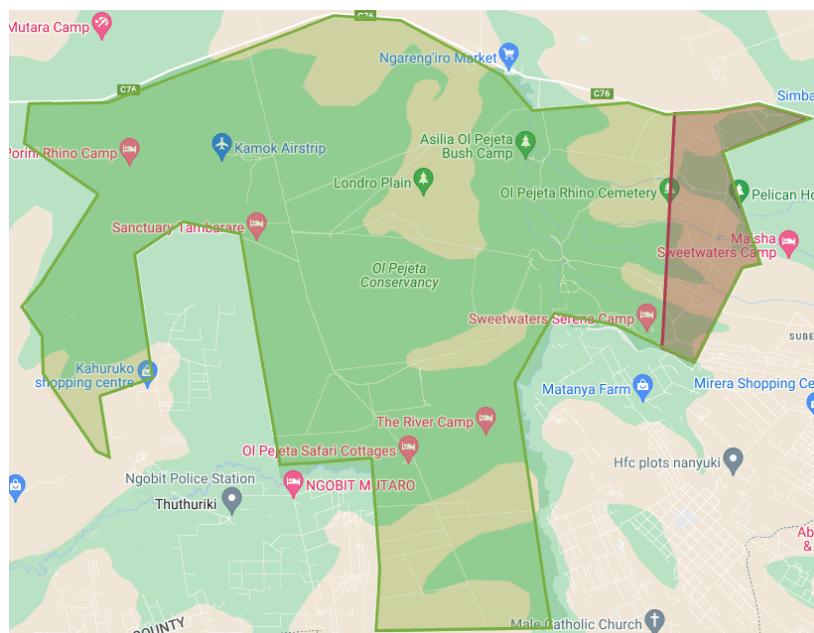
## Nighttime operations February to September 2025

The minimum field team required for conducting this operation is a RPIC and an Assistant Pilot as described under [Field team](#). If the ground risk is considered non-trivial, a third person dedicated as Ground Risk Observer must be added.

Below are the constraints set within the application we submitted to the KCAA:

- **Time of day:** Only nighttime (after dawn - 7.30 pm)
- **Drone Platforms:** DJI Mavic
- **Flight boundaries:** boundaries of OPC
  - 400 ft (120 m) buffer with park edges.
- **No-fly zones:**
  - East of the Rhino Cemetery
  - Campgrounds
- **Vertical Operational Limit AGL:** 400 ft West and 250 ft East of the Ewaso river.
- **Maximum distance from pilot:** 1,000 m
- **Mobile communication with ATC:** at the start and end of operations.
- **Road Overflight Minimisation:** cross roads perpendicularly.
- **Pilot certification:** Pilot needs to have A1/A3 and A2 certification (or equivalent if outside EU)
- **Kamok Airstrip Coordination:** Submit flying dates at the start of every week to **the OPC management (xxxxxxxxxxxxxx)** including the RPIC's contact details in case of emergency.

**Flight logs:** All flights will be added to the KFL flight logs. See DroneLogBook section below



## How to Assess a Flight Area

Before starting drone operations, thoroughly assess the flight area to ensure safety and minimise risks. Each step below is designed to prevent hazards and maintain operational integrity.

**Airspace Visibility:** The RPIC must have a **360-degree unobstructed view of the airspace** and be able to see at least **10 km** in all directions. Aircraft, especially low-flying planes, can approach at high speeds, leaving only seconds to react before they overfly the drone. Trees and bushes can block visibility and delay detection of incoming aircraft, increasing the risk of a dangerous encounter. A clear, open location ensures early spotting and a safe response.

**Ground Visibility:** Select an area with an **unobstructed view of the ground**. Avoid locations with dense bushes that could conceal wildlife or hills that block visibility of approaching vehicles or animals. This ensures the RPIC and Assistant Pilot can continuously monitor the surroundings for ground risks. In operations where the entire field team is operating through the sun roof and thus remain within the car, the requirement for ground visibility can be relaxed as this is a more safe operation in this regard. Please be mindful, however, that this does not reduce the requirements for the Airspace visibility described above.

**Vehicle Positioning:** Always park the vehicle on the **same side of the road** as the launch location. This prevents the drone from having to cross the road during normal operations and in case of a **Return-to-Home (RTH) failsafe**, where it may automatically return to the launch point. Keeping the drone away from roads minimises the risk of overflying traffic in the event of an RTH activation.

**Landing Mat Placement:** Place the landing mat at least **5 metres away from the road** to ensure road safety during takeoff and landing. If a technical issue arises, the drone may take off at an unexpected angle, potentially creating a hazard for passing vehicles. Additionally, GPS accuracy can drift over time, especially with changes in temperature, humidity, and cloud cover, meaning the drone may not land **exactly** at the takeoff point. Keeping the landing zone clear of roads ensures a buffer for any small positional errors during automated landings.

**Controller Positioning & Line of Sight:** The **RPIC must maintain a clear Radio Line of Sight (RLOS)**, meaning no obstacles—such as vehicles, trees, or buildings—should be between the RPIC and the drone. Large objects can block the signal, leading to communication loss. Additionally, when operating from an elevated vantage point, avoid flying the drone too low over downhill terrain, as more obstacles exist closer to the ground. Keeping the drone at a **sensible altitude (at least 30 metres above the takeoff point)** ensures a stable and reliable connection, reducing the risk of signal interference or loss of control.

## **Operating from a Vehicle (Nighttime Operations)**

When operating from within a vehicle at night, both the pilot and assistant pilot must have **unobstructed 360-degree visibility** of the airspace. This can be achieved by standing through the sunroof or an equivalent roof opening. **Leaning out of a window does not provide sufficient visibility** and is therefore not permitted.

To maintain operational safety:

- **The vehicle must remain stationary while the drone is airborne.** Movement of the vehicle while flying could compromise situational awareness and flight control.
- **The only exception is an immediate wildlife threat.** In such cases, the pilot must first initiate Return-to-Home (RTH) before the assistant pilot moves the vehicle.

## **Safety & Compliance**

**GoPro Usage:** All RPIC's must wear a **GoPro** mounted on their forehead for the entire duration of the flight, including the checklist process.

- **Purpose:** The GoPro footage is crucial as it serves as the **official proof** that you followed all operational procedures and adhered to our permit requirements, especially in case of an incident.
- **Importance:** In case of an accident, this material could be the **sole evidence** demonstrating your compliance, which is critical for avoiding serious legal consequences.

**Use of safety vests:** All RPIC's must wear a high-visibility safety vest throughout the operation.

- **Purpose:** The vest signals to park rangers and staff that you are conducting official work, reducing the likelihood of people approaching and interrupting you. It also distinguishes you from tourists, lowering the risk of visitors assuming it is safe to exit their vehicles.
- **Importance:** Minimising distractions is essential for maintaining focus. Unnecessary interactions during flight operations can lead to mistakes or safety risks.

## **Contacting ATC**

Before and after every **flight block** (typically 2 to 6 hours), you must contact **Nanyuki ATC Tower** (+254 xxx xxx xxx). If you plan to operate early in the morning, call the evening before (before **18:30**) to confirm approval.

When calling, state the following:

***"Drone flight request. Request no objections to drone operations within the Ol Pejeta Conservancy, [East/West] of the Ewaso Nyiro River, not above 250 feet above ground level, between [INSERT i.e. 14.30] and [INSERT] local time. My contact number is [INSERT]. I will call back on completion."***

## Logging Flights

**Logging Flights:** RPIC's must log all flights on **DroneLogBook**. SDU will create accounts for each RPIC to ensure accurate flight data is recorded for operational tracking and compliance purposes.

**GoPro Footage Storage:** RPIC's are required to store **GoPro footage** for a minimum of **1 week** after each flight before it can be deleted. **GoPro footage** of any **incident or accident** must be kept **permanently**. An **incident** refers to any event with the potential to affect safety, such as a near miss collision with an aircraft, while an **accident** involves actual damage, injury, or a serious safety event, both requiring further investigation and reporting.

**Weekly Debrief:** Each RPIC is required to send a weekly debrief email to the WildDrone operational safety team listed at the top of this document. This email should detail the flights conducted during the week, and should include:

- The number of flights and total flight durations.
- Locations.
- Any incidents or near misses.
- Deviations from planned operations.
- Lessons learnt and suggestions for future improvements. This debrief aids in monitoring operational performance and identifying areas for enhancement.

## Incident and Accident Reporting

An **incident** refers to any event that could affect safety but does not necessarily result in damage or injury. For example, a drone unexpectedly taking off manually or a loss of communication with the drone during flight are incidents. On the other hand, an **accident** involves actual damage, injury, or a serious safety issue. Examples in the context of flying drones in Ol Pejeta could include a collision with a manned aircraft or a drone crash due to a system failure.

It is imperative to **report all incidents and accidents**. This process helps us identify areas where safety protocols can be improved, refine operational procedures, and ensure safer future operations. Reporting is the only way to detect weaknesses in current procedures and make necessary adjustments to avoid similar situations in the future. A **reporting template** will be provided to ensure that all relevant details are documented accurately and thoroughly.

## Version history

Version	Date	Description	Authors
1.0	12-02-2025	First version of the document.	Guy Maalouf Kjeld Jensen
1.1	17-02-2025	Added procedures for nighttime operations.	Guy Maalouf Kjeld Jensen