



Uncrewed Aircraft Systems Policy to Use UAS on Boulder County Open Space

Approved by Parks & Open Space Advisory Committee on January 30, 2022
Approved by the Board of County Commissioners on July 5, 2022

I. Policy Summary

The purpose of this policy is to provide direction for the safe use and regulation of Uncrewed Aircraft Systems (UAS) on Boulder County's open space properties. It guides Boulder County Parks and Open Space (BCPOS) to allow and permit this use for specific purposes, while protecting resources and visitor experiences. This policy requires that all UAS operations be performed in a manner that mitigates risks to safety, security, and privacy, ensures compliance with all Federal Aviation Administration (FAA) rules, regulations, and applicable laws. It also describes a framework for managing this use in an appropriate manner. Use of UAS on open space will be allowed only for activities that contribute to the understanding, management of, and protection of BCPOS properties and their resources. This permission includes uses such as natural resource monitoring and research, resource management activities, agricultural operations, education and outreach, project bidding, news media, emergency operations, and managing cultural resources. Persons seeking to operate UAS on any BCPOS property must receive written approval in advance, in accordance with this Policy. The operation of UAS for all other unpermitted uses (including recreational or hobby uses) will remain prohibited on BCPOS properties.

This Policy shall be periodically reviewed and revised, as needed, in response to scientific and technological developments, new agricultural methods and techniques, new regulatory or legal guidance, environmental changes, and the evolution of community goals for county open space.

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III. Policy Statement

This policy establishes an approval process and procedures to ensure safe and responsible operation of UAS on BCPOS properties in the U.S. national airspace system. Adherence to this policy ensures compliance with applicable laws, enhances safety, and preserves the security and privacy of the community. This policy applies to any person or BCPOS staff seeking to operate UAS on BCPOS properties.

BCPOS recognizes that UAS offer great potential as tools for research and other educational

functions, as well as providing opportunities across a diverse array of users and industries.

In addition, BCPOS must take into consideration public safety, privacy, and civil rights issues when allowing use of UAS on BCPOS properties.

Persons wanting to operate UAS on BCPOS lands must comply with the following:

1. Apply for and receive approval in advance from BCPOS to operate UAS on BCPOS properties. (Please see the UAS Permit Procedures Document for how to apply for a permit).
2. Operate in compliance with all applicable laws, regulations, and rulings.
3. Operate in a manner that ensures public safety, right to privacy, and civil rights.
4. Operate in compliance with the provisions provided in this Policy. Some exemptions to the provisions in this Policy may be made on a case-by-case basis after review and approval by the BCPOS Director.

IV. Background

Originally developed for military purposes, UAS have seen rapid growth and advancements since 2010. Today, UAS are found in a wide range of applications, including monitoring climate change, monitoring natural resources, surveying, search and rescue, wildland fires, delivering goods, and recreation. Because of this rapidly changing technology and the many beneficial uses, BCPOS created a policy in January 2016 to manage the commercial and research aspects that private and public sector UAS could provide.

Recreational use of UAS is not allowed on BCPOS open space properties.

Since adoption of the policy in April 2016, BCPOS has issued many permits for UAS operations on open space lands. Those uses included pollinator monitoring, geological surveys, weed monitoring, and flood recovery projects.

Recognizing the beneficial use of UAS, BCPOS created a UAS program in 2019 for monitoring open space properties and the resources on those properties. Projects include flood and wildland fire recovery monitoring, forest monitoring, weed monitoring, topographic surveys, and videos for project bidding.

V. Goals, Compliance, and Responsibilities

The goals of this policy are to ensure that all UAS activities are conducted in a manner that (1) ensures the protection and safety of park visitors, staff, natural and cultural resources, open space property, and the environment; (2) provides for privacy; (3) outlines acceptable uses of UAS; and (4) ensures compliance with all applicable laws and regulations. Achieving these goals is the responsibility of BCPOS staff and the public that operate UAS on Boulder County open space lands.

1. Safety

UAS use must not jeopardize the health, safety, and welfare of either county open space visitors or resources.

- A. UAS operators on BCPOS properties must comply with this policy, the department's Rules and Regulations, the department's UAS regulations, and all local, state, and federal laws, including FAA regulations.
- B. UAS operators must immediately cease operation on county open space when requested to do so by BCPOS Park Rangers, BCPOS staff assigned as the liaison to the flight operations, or the Boulder County Sheriff's Office.
- C. UAS operators assume all the risks associated with use on county open space and must meet Boulder County insurance requirements. Operators of UAS on county lands will be financially responsible for damage or injuries to persons, structures, vehicles, and resources caused by negligent actions.

2. Acceptable Uses

UAS operations will be approved only for activities that contribute to the understanding or management of BCPOS properties or resources. These activities include scientific uses such as:

- A. Natural resource monitoring and research, resource management activities, agricultural operations, and cultural resources. In addition, proposed public UAS operations will be evaluated to determine their need, value, efficiency, and cost-benefit in the acquisition of aerial information.
- B. Emergency operations of UAS authorized by the BCPOS Director and/or the Boulder County Sheriff are considered an acceptable use. Emergency operations include, but not limited to, search and rescue, wildland fire, natural disasters, and law enforcement
- C. For the Boulder County Fairgrounds specifically, UAS use can be permitted for other uses in facility lease contracts but only after the BCPOS interdisciplinary team has reviewed the proposed use and determines it will not have significant resource or visitor impacts.
- D. News media activities that provide a better public understanding of the management of natural and cultural resources on BCPOS lands. Included are UAS operations that report on natural disasters and emergencies.

3. Protection of Resources and Recreation

Since the protection of cultural and natural resources and providing recreational opportunities are components of the primary mission of BCPOS, the department will approve and permit only UAS operations that do not diminish these values or their enjoyment by the visiting public.

- A. An interdisciplinary team of BCPOS staff will review each UAS request to assess the impact of the proposed operation on natural resources and visitor use.
- B. Following the review and evaluation by the BCPOS interdisciplinary team and the

department's management staff, only those UAS operations that have no unacceptable impacts to sensitive sites, cultural and environmental resources, popular locations and trails, and visitor use will be approved and permitted. Decisions will be based on current research and will continuously incorporate new research.

- C. BCPOS approval and permission for UAS operation apply only to Boulder County open space. BCPOS cannot permit or authorize use on adjacent private property or other public lands.
- D. UAS operations are allowed on fee-owned lands and may be allowed on properties with conservation easements, with approval of the landowners.
- E. BCPOS will designate a staff person to be a liaison to the UAS operator. The department's liaison will make periodic field inspections of the permitted UAS operations and as needed, provide direction and guidance. The liaison will also act as the department's contact for public and staff inquiries.
- F. UAS operators must immediately cease operation on county open space when any authorized member of BCPOS informs the UAS operator that its use is posing a threat to the public, and/or natural, cultural and park resources.

4. Privacy, Data Collection, Civil Rights Protection, and Program Monitoring

Privacy Protections and Data Collection: Considering the advancements in UAS technologies and diverse potential uses, it is essential that BCPOS take steps to implement a UAS policy that addresses privacy protections, procedures, and standards to ensure compliance with all privacy laws.

- A. All UAS collected data shall be made available to BCPOS upon request within five working days of the completion of the UAS flight permit date.
- B. BCPOS and approved public users shall use UAS collected information only to the extent that such collection or use is consistent with and relevant to an approved purpose and privacy laws.
- C. UAS-collected information will not be disseminated outside of BCPOS unless it is required by law or fulfills an authorized purpose and complies with both this policy and the approved UAS operations.
- D. Data collected by, or on behalf of, BCPOS or the public using UAS that may contain personally identifiable information shall not be retained longer than reasonably necessary to fulfill a purpose.
- E. UAS should not be used to monitor or record activities where there is a reasonable expectation of privacy.
- F. No UAS flights should occur over private property without landowner approval.
- G. On the day of UAS operations and prior to conducting flights, signs should be provided onsite to notify the public of the general timeframe and area that they may anticipate UAS collecting identifiable data.

Civil Right and Civil Liberties Protections: To protect civil rights and civil liberties, BCPOS shall:

- A. Adhere to Boulder County policies regarding the collection, use, retention, or dissemination of data in any manner that would violate the First Amendment or in any manner that would discriminate against persons based upon their ethnicity, race, gender, national origin, religion, sexual

- orientation, or gender identity, in violation of law.
- B. Ensure that UAS activities are performed in a manner consistent with the applicable laws.
- C. Contact the County Attorney's Office to investigate complaints received that address privacy, civil rights, and civil liberties.

Program Monitoring: BCPOS will document public feedback about approved UAS operations and monitor impacts on county open space and its resources, such as visitor experiences and wildlife responses to UAS operations. This information will be saved and used to monitor the program and continually assess UAS impacts and benefits.

VI. Definitions

Boulder County Parks and Open Space (BCPOS): a county department responsible for management of county open space lands.

Certificate of Waiver or Authorization (COA): an authorization issued by the Air Traffic Organization to an operator for a specific uncrewed aircraft activity.

Federal Aviation Administration (FAA): the national aviation authority of the United States. An agency of the U.S. Department of Transportation, it has authority to regulate and oversee all aspects of American civil aviation.

Recreational Use: use of UAS for non-business purposes, as a hobby, or as part of a non-commercial, community-based organization.

Uncrewed Aircraft Systems (UAS): uncrewed aircraft and associated elements, including communication links and the components that control the uncrewed aircraft, which are required for the pilot to operate safely and efficiently in the airspace.

VII. Revision History

Date	Revision	Revision Type	Comments
12/20/2015	1.0	Major	Policy Created
02/28/2016			Approved by POSAC
04/12/2016			Approved by BOCC
01/30/2022	2.0	Major	Updated
01/30/2022			Approved by POSAC w/revisions
05/05/2022	2.1	Minor	Changes by Proofreader
07/05/2022			Approved by BOCC

Appendix A to the UAS Policy

Supplemental Policies for Use of Drones for Application of Herbicides on County Natural Lands

Overview

In 2024, the Board of County Commissioners approved the Integrated Weed Management Plan (IWM Plan) that included a range of policies concerning the use of herbicides on Boulder County Parks & Open Space (BCPOS) natural lands. The IWM Plan allows for aerial application of herbicide using drones to control noxious weeds, primarily cheatgrass, on county natural lands (IWM Plan Section 4.4). Drones are especially suitable to BCPOS natural lands with very high biodiversity that are also characterized by extreme grades and rough terrain where concern for worker safety is high such that lands are otherwise inaccessible for other application methods. The policies set forth below are intended to supplement general UAS policies for all BCPOS lands and to apply specifically to the use of drones for herbicide applications on BCPOS natural lands.

Application Site Selection

The following criteria will be used to identify drone treatment areas:

- Applications will be conducted in areas identified as mostly inaccessible by motorized ground vehicles or areas where it would reduce safety hazards for ground crews; for example, areas with steep grades and rocky terrain.
- Because of application height (8-12 feet is optimal) and drift potential (5-10 feet), herbicide applications will occur no closer than 660 feet from municipal boundaries or residential areas adjacent to BCPOS properties.

Notification of Drone Application

A variety of notifications for drone applications will be employed:

- Notice will be posted on the BCPOS Invasive Weeds webpage by 8 a.m. on the Friday prior to week of application. See www.boco.org/weeds.
- Members of the public will have the option to sign up for email or text messages; these notifications will post on the Friday prior to the week of application.
- Other notification methods may be used, including signage and property closures.

Drone Application Area Buffers

Drone application buffers are described below. Application area buffers are significantly greater than application buffers specified on product labels.

- 50 feet from the BCPOS property boundaries in cases where there are no adjacent residences.
- 50 feet from the edges of streams and open water.

- 1/8 of a mile (660 feet) from municipal boundaries or residential areas adjacent to Boulder County Open Space.

Drift Mitigation Measures for Drones

Drift mitigation measures are based on industry standards and best management practices including:

- No drones when wind speeds are greater than 8 mph.
- No treatment when weather forecasts predict rain in next 48 hours.
- On-site weather monitoring.
- Drone flight height 8-12'.
- Nozzle technology.
- BCPOS will monitor drift through use of drift cards wherever drone application is used.
 - Timing: drift cards will be placed in advance of flight
 - Placement: three drift cards will be placed on each side of buffer boundary
 - Evaluation: Drift cards will be evaluated after each application
 - Action: Buffers will be expanded (and spray area reduced) or herbicide application suspended if herbicide is detected at the buffer boundary

Annual Reporting

The IWMP Annual Report will include details about drone applications during the reporting period such as notifications, buffers applied, drift mitigation measures implemented and drift card results. Refer to IWM Plan Sections 2.1.1, 4.4 and 5.2 for more specific information about the IWMP Annual Report.