



R & E Grant Application 13 Biennium

Project #:
13-094

UAV based fish and wildlife surveys

Project Information

R&E Project Request: \$30,000.00
Match Funding: \$19,828.00
Total Project: \$49,828.00
Start Date: 11/1/2014
End Date: 6/1/2015
Project Email: dan.j.avery@state.or.us
Project Biennium: 13 Biennium
Organization: ODFW - Newport

Applicant Information

Name: Dan Avery
Address: 810 SW Alder St, Suit eC
Newport, OR 97365
Telephone: 541-265-8306 x235
Email: dan.j.avery@state.or.us

Past Recommended or Completed Projects

This applicant has no previous projects that match criteria.

Project Summary

This project is NOT part of ODFW's 25 Year Angling Plan.

Activity Type: Monitoring

Summary: Oregon Department of Fish and Wildlife (ODFW) currently conducts aerial surveys of numerous fish and wildlife species using both fixed and rotary-winged, manned aircraft. The data collected from those aerial surveys provide vital information used in the decision making process for managing the fish and wildlife populations that are the foundation for an annual \$2.5 billion dollar recreational fishing, hunting and wildlife watching economy. Downward trends in state budgets are resulting in cancellation of some surveys and reduced effort on many of the remaining surveys. In 2013 an ODFW chartered helicopter crashed while conducting a Chinook redd survey on the S. Umpqua River. All three people inside the helicopter were severely injured. The Director of ODFW tasked staff to initiate an experimental Unmanned Aerial Systems (UAS) program to be used to conduct aerial fish and wildlife surveys as a step to reduce injury and loss of life for ODFW field staff. We are proposing to evaluate UASs as a way to significantly reduce per flight data

acquisition costs as well as reduce risk to ODFW staff. This grant will be used to acquire a UAV system.

Objectives:

There are three primary objectives for this proposal:

1. Reduce risk to staff, ODFW senior management has decided that ODFW staff will no longer fly high risk aerial surveys. The transition to using UAVs to maintain the advantages of an aerial survey and reduce risk to staff is a logical path to follow.
2. Maintain or increase aerial survey frequency while lowering expense. By replacing ODFW fish and wildlife population surveys currently conducted with manned aircraft systems with UAS we will likely realize a significant reduction in flight costs (conservatively estimated to be 10-50% decrease). Depending on the amount of cost savings ODFW could maintain existing levels of surveys or potentially increase the number of flights and therefore the frequency of surveys with a concurrent improvement in accuracy.
3. Improve survey accuracy. We believe that using high resolution aerial imagery will significantly improve fish and wildlife population surveys, by reducing ambiguous population counts, improve the ability to distinguish between similar species, and produce a fixed digital image record of the surveys which would facilitate further image analysis at a later date. This improvement in field counts has already been realized in some of our traditional helicopter based elk surveys where the observing biologists are now using digital cameras to photograph elk herds then count them at a later date once back in the office.

Fishery Benefits:	It is anticipated that with the use of UAS ODFW will maintain or expand its data collection activities thereby providing agency managers with a more robust and accurate data set to use to make decisions related to fishing and wildlife management. Determining and managing the sustainable use pressure that fish and wildlife populations can withstand and remain healthy is a significant force in maintaining and expanding the already mentioned \$2.5 billion dollar recreational hunting, fishing and wildlife viewing economy that supports many rural communities within Oregon.
Watershed Benefits:	This proposal does not address physical habitat limiting factors. It does address the limiting factor of over harvest due to limited survey data and over estimation of fish and wildlife populations. Initiation of this pilot program will help ODFW maintain and improve the ability to manage diverse populations of fish and wildlife across the state through the collection of better quality field data.
Current Situation:	The frequency and duration of fish and wildlife surveys are declining state wide due to budget restrictions and management decisions to reduce risk to ODFW staff and contractors. ODFW senior management has terminated high risk aerial redd surveys.
Alternatives:	yes - not conducting surveys, different types of surveys (floating, and foot) and various other types of UAVs
Designer:	ODFW field and research staff will design the statistical changes needed to convert from full stream linear sampling to a reach scale probabilistic sampling protocol.
Methods:	<p>There are four major components to the proposal; 1) Permitting through the Federal Aviation Administration (FAA), 2) Landowner access and cooperation, 3) Aircraft acquisition, operation and data acquisition, and 4) Data analysis and storage.</p> <p>Permitting: Under current FAA rules a public agency must be registered with the FAA as a Public Entity. ODFW accomplished the goal in 2013. The second step is to acquire a Certificate of Waiver or Authorization (COA) from the FAA for each flight locations. COAs are highly detailed operational plans that are location, aircraft, and operator specific. ODFW has 6 COAs in development with the FAA at this time. The FAA has the final decision on all aspects of each flight, including location, type of air space, time of day, acceptable meteorological conditions, pilot in charge, pilot skill set, as well as the number, location and skill set of observers and all aspects of the aircraft and its operations.</p> <p>The ODFW draft COA locations and species surveys include: Double Crested Cormorant surveys at Three Arch Rocks (offshore west of Tillamook) and Bolon Island (lower Umpqua River), Chinook Salmon redd counts on the S.F. Umpqua River, Roosevelt Elk surveys at Jewell Wildlife Refuge (near Jewell) and in the Valselt Lake areas (east of Logsdan along the Siletz River), and a count of Colombian White Tailed Deer in the North Bank Wildlife Management Area along the N Umpqua River.</p>

Landowner access and cooperation - Field staff will use the traditional process of getting signed land access forms from landowners where we will launch, recover and image the stream corridor. ODFW will only image the active channel width and a few meters of riparian on each side of the channel.

Anticipated Schedule - 12/2012 FAA Public Entity Certification, 12/2014 FAA COA approval, 01/2015 ODFW UAV acquisition, 02/2013 test/training flights, 03/2015 landowner access, 06/2015 cormorant surveys, 10/2015 Chinook surveys.

Inspector: ODFW will evaluate the data sets and the aircraft operations. The FAA will also evaluate aircraft and flight operations.

Funding Elements: Acquisition of an Unmanned Aerial System, spare parts and some aircraft operation training.

Partners: Yes

USFWS (land access, Endangered Species Act clearance and data interpretation), BLM, USFS - land access. NOAA for ESA clearance.

As to be identified private landowners. With private landowners ODFW will acquire written permission to access their land and image the stream / field (depending on target species).

Existing Plan: No

Affected Contacted: Yes

Affected Supportive: Yes

Affected Comments: Federal landowners and different programs within ODFW including Corvallis research, OASIS, PST and various District Offices with both fish and wildlife programs. Private landowners have not yet been identified or contacted.

Project Schedule/Participants/Funding

Activity	Date	Participants
Schedule- 11/30/2012 issued FAA Cert of Public Entity Status 01/08/14 - began development of COA	1/1/0001	ODFW

Affected Species: Chinook Salmon

Project Permits

Name	Issued By	Secured?	Date Secured	Date Expected
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FAA Certificate of Authorization	Federal Aviation Administration	No	1/1/0001	11/1/2014
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Project Monitoring

Organization	Address	Activity	Frequency
ODFW - Umpqua Watershed District	4192 N. Umpqua Hwy Roseburg, OR 97470	Analysis of imagery - For each district we work in the district and / or regional Research staff that have previously conducted the traditional aerial surveys will read the images to count redds (or other targets) as a consistency control. For this example we have included the Roseburg District Office address.	The imagery will be processed (downloaded, color and contrast corrected, and potentially geo-rectified) and then read within 5 days of each flight.

Project Maintenance

Organization	Address	Activity	Frequency
ODFW North Coast Watershed District	810 SW Alder St., Suite C Newport, OR 97365	Hardware Maintenance - Before and after each flight all systems are checked. This includes flight controller, motors, rotors, cameras, radio transmitters and receivers, batteries and all control software.	After each flight all batteries are removed, conditioned and charged and rotors are checked for balance and rebalanced if needed. Onboard flight logs are also reviewed.

Project Match Funding

Funding Source	Cash	In-Kind	Other	Description	Total	Secured?	Conditions?	Comments
R&E Request	\$30,000.00	\$0.00	\$0.00		\$30,000.00	No	No	
ODFW - North Coast Watershed District	\$0.00	\$19,828.00	\$0.00		\$19,828.00	Yes	No	
				Total Match Funding:	\$49,828.00			

Project Budget

Item	Item Type	Units	Unit Cost	R&E Funds	Match Funds	Total
Certificate of Approval	Administration	6	\$1,600.00	\$0.00	\$9,600.00	\$9,600.00
training	Contracted Services	1	\$5,000.00	\$5,000.00	\$0.00	\$5,000.00
Falcon Hover Quadcopter	Equipment	2	\$8,000.00	\$16,000.00	\$0.00	\$16,000.00
Ground Control Station	Equipment	1	\$4,500.00	\$4,500.00	\$0.00	\$4,500.00
Sony NEX7 Mapping Payload	Equipment	1	\$3,000.00	\$3,000.00	\$0.00	\$3,000.00
Image processing	Personnel	6	\$160.00	\$0.00	\$960.00	\$960.00
Pilot / Observer training	Personnel	1	\$5,609.00	\$0.00	\$5,609.00	\$5,609.00
miscellaneous	Supplies/Materials /Services	1	\$1,500.00	\$1,500.00	\$0.00	\$1,500.00
travel and flight time	Travel	1	\$3,659.00	\$0.00	\$3,659.00	\$3,659.00
					Total Budget:	\$49,828.00

Project Map



Additional Files

Click a link to view that particular file.

[Falcon Hover](#)

[HB 2712](#)

[Landowner Privacy Concerns](#)

[Sample Proposals](#)

[Survey Site Map](#)

[UAV signature.pdf](#)



UAV Survey Sites

Three Arch Rocks
Double Crested Cormorant Colony
UAV Survey

Jewell Wildlife Refuge
Elk UAV Survey Site

Trask and N.F. Trask River
Chinook Spawning Ground
UAV Surveys

Valsetz Lake Area
Elk UAV Survey



Bolon Island
Umpqua River
Double Crested Cormorant Colony
UAV Survey

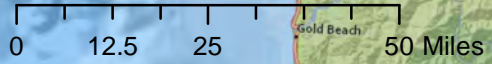
North Bank Wildlife Management Area
North Umpqua River
Columbian White Tailed Deer
UAV Survey

Cow Creek
Chinook Spawning Grounds
UAV Survey

South Umpqua River
Chinook Spawning Grounds
UAV Survey

Legend

-  UAV Survey Sites
-  Cormorant Colonies



Sample Proposals by Species

Double crested cormorant – data quality/platform trials –

Who: ODFW/NCWD, USFWS, NSC – Oregon Coast NWR, agency certified UAS pilot and observer

What: Survey known colonies for nest numbers, occupancy and species identification

Where: 1) Bolon Island, located in the Lower Umpqua River just downstream from the HWY 101 Bridge; 2) Three Arch Rocks, located approximately 1 km offshore from the town of Oceanside, Oregon

When: Multiple times in June – breeding season is from March through August

How: We will either obtain a permit (a Certificate of Waiver or Authorization (COA) from the Federal Aviation Administration (FAA) to operate our UAS at these locations (currently in process) or we will operate under the developmental COA that the NSC test facility will hold. We will obtain permission from landowners to fly over and access their lands to acquire the target imagery. We will use the UAS to take aerial images of cormorant nests at the colony sites, and use them to estimate the number of nesting cormorants. Further, we will compare images collected by the UAS to existing images of the same colonies taken by manned aircraft. We will also observe and document any bird responses to UAS presence.

Why: We wish to validate image resolution and platform capabilities at two Double-crested cormorant colonies of management importance, where UAS could replace the need for manned flights.

Chinook salmon – data quality/platform trials/sample design –

Who: ODFW – Umpqua Field office, UWD, or NCWD Staff, NSC, agency certified UAS pilot and observer

What: Survey fall chinook redds

What: Survey Chinook redds

Where The mainstem South Umpqua River and portions of Cow Creek,

When: October – December – multiple flights over 3 month period

Why: Validate image resolution and platform capabilities (stage1), validate random sample survey protocol (to be developed, stage 2).

How: We will either obtain a permit (a COA) from the FAA (currently in process) to operate our UAS at these locations or we will operate under the developmental COA that the NSC test facility will hold. We will obtain permission from landowners to fly over and access their lands to acquire the target imagery. We will use the UAS to take images of Chinook salmon redds and used those images to count the number and timing of those redds to determine spawner abundance. Conduct multiple flights using onboard GPS guidance to acquire temporally different images at the exact same locations and differentiate between old and new redds. Evaluate images for quality and evaluate a random sample survey design to help determine feasibility. Work with OSU/ODFW Corvallis statisticians to design and implement a random sample design to produce statistically valid survey results.

Roosevelt elk – data quality/platform trials/sample design

Who: ODFW NCWD, ODFW Jewell Wildlife Refuge, NSC, agency certified pilot and observer

What: Survey herd abundance and composition

What: Elk survey to determine herd composition and enumeration

Where: 1) Jewell Wildlife Refuge, located in Clatsop county about 35 miles east of Seaside Oregon, and 2) Valsetz Lake area, located in Lincoln County approximately 35 miles east of Logsdan, Oregon and along the Siletz River).

When: February - April

How: We will either obtain a permit (a COA) from the FAA to operate our UAS at these locations (currently in process) or we will operate under the developmental COA that the NSC test facility will hold. We will obtain permission from landowners to fly over and access their lands to acquire the target imagery. We will use the UAS to take images of previously located herds of elk on the refuge and take still images with onboard 24megapixel camera. Count herd members, determine sex and age range (stage 1). Conduct surveys over the Valsetz Lake area using a random sample protocol (stage 2). Work with OSU statistician to design and implement a random sample design to produce statistically valid survey results.

Why: Validate image resolution and platform capabilities (stage1); validate random sample survey protocol (stage 2) and ability to survey a larger area.

Columbian white-tailed deer – data quality/platform trials/sample design

Who: ODFW Wildlife Research, NCWD, NSC, agency certified Pilot and Observer

What: Aerial survey of deer populations on this wildlife management area

Where: North Bank Wildlife Management Area, North Umpqua River

When: to be determined

How: We will either obtain a permit (a COA) from the FAA to operate our UAS at these locations (currently in process) or we will operate under the developmental COA that the NSC test facility will hold. We will obtain permission from landowners to fly over and access their lands to acquire the target imagery. We will make multiple flights over refuge in a standard programmed grid pattern and take still images which will be used to count herd members, determine sex and age and species.

Why: Validate image resolution and platform capabilities and validate sample survey protocol. Compare to existing ongoing aerial surveys for quality and cost effectiveness. Test random sample protocol. Work with OSU statistician to design and implement a random sample design to produce statistically valid survey results.

Hardware

UAS - Falcon UAS - Two Falcon aircraft with fixed Sony Nex7 camera payloads, a complete ground control station setup with spare batteries, two battery chargers, spare parts, soft bags for individual aircraft, a hard case for both aircraft, a car kit for mobile operations, five days of training, a high performance mapping computer, and a single seat license for Photoscan image processing software.

Sensor - Sony NEX 7 w/ Zeiss 36mm f1.8 lens (or manufacturer's recommendation)

Data Management – Software – Photoshop

Metadata will follow ODFW metadata guidelines

Output includes geo-referenced .jpg or .tiff image files

FAA Certificate of Authorization or Waiver (COA)

A separate COA will be needed for each survey site. Draft COAs for each site are underway and entered into the FAA online COA process. The option to use the COA held by the NSC for their test site is also available.

FAA Coordination – ongoing

Federal Endangered Species Act Coordination –

NOAA - Contacted – determining presence of marine mammals or other listed species

USFWS - Contacted – Determining presence / absence of Marbled Murrelets, Snowy Plover or other listed species

Applicant Signature Page
Fish Restoration and Enhancement Program
(Oregon Department of Fish and Wildlife Applicants)

I hereby make an application for financial assistance under the terms and conditions of the Fish Restoration and Enhancement Program as described in my project application. I acknowledge that:

- This proposal is an identified priority at the district, region, and/or state level and has been identified as such in the application (**check box** for appropriate level).
- This proposal is consistent with any applicable goals, policies, rules, species or basin management plans adopted by the F&W Commission and this has been explained in the application.
- This proposal will not be used to cover, back fill, or fund shift elements that have been cut or defunded as part of agency budget reductions. Approved deferred maintenance or projects with division approval are exceptions.

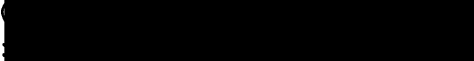
I understand that if my project proposal is approved for Restoration and Enhancement (R&E) Program funding, the following will apply:

- Applicants must sign an agreement containing the terms and conditions for the project implementation, release of funds, and documentation of completion. Non-compliance may impact future funding opportunities.
- The R&E Program will not pay for expenses which occur before the approved start date or after the end date.
- Funding is available one biennium only without prior authorization by the R&E Board.
- Applicant agrees to notify the R&E Program of all funds not needed for the project upon determination.
- Any inappropriate expenses using R&E funds will be corrected by the applicant immediately. By the close of the biennium any expenses exceeding, or not identified in, the grant approval will be reverted to a local cost code.
- Copies of all landowner, monitoring and maintenance agreements must be submitted to the R&E Program.
- Educational products resulting from projects are public domain.
- Information collected is subject to Oregon Public Records Law.
- As applicable, the project will be consistent with all federal, state, and local regulations, including the State Land Use Planning Goals & Local Land Use Plans, prior to any on the ground work.

By signing this application, I certify to the best of my knowledge that the information contained in the application are true, complete and accurate. If awarded funding the applicant agrees to follow all terms and conditions outlined in the agreement.

Project Title: UAV use for Fish and Wildlife Surveys

Applicant Name: Dan Avery Title: Coastal Implementation Coordinator

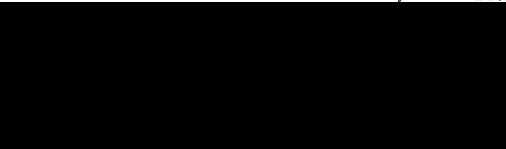
Applicant Signature:  Date: July 9, 2014

Manager Certification:

To be completed by Watershed Manger, Hatchery Coordinator, Program Manager, or higher level manager.

- I concur with the statements above and the applicant has permission to request these funds.

Manger Name: Shannon Hurn Title: North Coast Watershed Manager

Manager Signature:  Date: July 9, 2014

Landowner Privacy Concerns

ODFW is aware that there are many members of the public that are concerned about privacy issues as they relate to the use of Unmanned Aerial Vehicles. We take this concern seriously. ODFW has a long history associated with gaining access to private lands to conduct various types of biological and physical habitat surveys. Without private land owner cooperation, many if not all, of our survey programs would not be possible. ODFW will not put that landowner trust in jeopardy.

ODFW staff will use the same program protocols for accessing private lands to conduct UAV surveys as we use for our ground based salmon spawner survey programs. Once a river section has been identified as a likely target based on historic spawning surveys, and it meets the FAA imposed restrictions (i.e. the aircraft must not fly above 400ft, be in control by the pilot at all times, be in direct line of site of the pilot and the observer and never be more than 1 mile from the pilot), and it falls within the ODFW statistical survey design, ODFW staff will contact the landowner and ask permission to conduct an UAV based survey. Written approval from the land owner will be required. ODFW will only image the stream channel and a few meters of riparian on either side of the channel on the property of the cooperating landowner. All imagery will be available to the legal landowner.

The State of Oregon is a leader in developing UAV use laws and ODFW will follow all of the laws that are defined in HB 2710 (approved July 2013) , Chapter 686

<https://olis.leg.state.or.us/liz/2013R1/Measures/Text/HB2710/Enrolled>

CHAPTER 686

AN ACT

HB 2710

Relating to drones; and declaring an emergency.
Be It Enacted by the People of the State of Oregon:

DEFINITIONS

SECTION 1. As used in sections 1 to 17 of this 2013 Act:

(1) "Drone" means an unmanned flying machine. "Drone" does not include a model aircraft as defined in section 336 of the FAA Modernization and Reform Act of 2012 (P.L. 112-95) as in effect on the effective date of this 2013 Act.

(2) "Law enforcement agency" means an agency that employs police officers, as defined in ORS 133.525, or that prosecutes offenses.

(3) "Public body" has the meaning given that term in ORS 174.109.

(4) "Warrant" means a warrant issued under ORS 133.525 to 133.703.

**USE OF DRONES
BY LAW ENFORCEMENT AGENCIES**

SECTION 2. (1) Except as otherwise provided in sections 2 to 7 of this 2013 Act, a law enforcement agency may not operate a drone, acquire information through the operation of a drone or disclose information acquired through the operation of a drone.

(2) Any image or other information that is acquired through the use of a drone by a law enforcement agency in violation of sections 2 to 7 of this 2013 Act, and any evidence derived from that image or information:

(a) Is not admissible in, and may not be disclosed in, a judicial proceeding, administrative proceeding, arbitration proceeding or other adjudicatory proceeding; and

(b) May not be used to establish reasonable suspicion or probable cause to believe that an offense has been committed.

SECTION 3. (1) A law enforcement agency may operate a drone, acquire information through the operation of a drone, or disclose information acquired through the operation of a drone, if:

(a) A warrant is issued authorizing use of a drone; or

(b) The law enforcement agency has probable cause to believe that a person has committed a crime, is committing a crime or is about to commit a crime, and exigent circumstances exist that make it unreasonable for the law enforcement agency to obtain a warrant authorizing use of a drone.

(2) A warrant authorizing the use of a drone must specify the period for which operation of the drone is authorized. In no event may a warrant provide for the operation of a drone for a period of more than 30 days. Upon motion and good cause shown, a court may renew a warrant after the expiration of the 30-day period.

SECTION 4. A law enforcement agency may operate a drone for the purpose of acquiring information about an individual, or about the individual's property, if the individual has given written consent to the use of a drone for those purposes.

SECTION 5. (1) A law enforcement agency may operate a drone, acquire information through the operation of a drone, or disclose information acquired through the operation of a drone, for the purpose of search and rescue activities, as defined in ORS 404.200.

(2) A law enforcement agency may operate a drone, acquire information through the operation of a drone, or disclose information acquired through the operation of a drone, for the purpose of assisting an individual in an emergency if:

(a) The law enforcement agency reasonably believes that there is an imminent threat to the life or safety of the individual, and documents the factual basis for that belief; and

(b) Not more than 48 hours after the emergency operation begins, an official of the law enforcement agency files a sworn statement with the circuit court that describes the nature of the emergency and the need for use of a drone.

(3) A law enforcement agency may operate a drone, acquire information through the operation of a drone, or disclose information acquired through the operation of a drone, during a state of emergency that is declared by the Governor under ORS chapter 401 if:

(a) The drone is used only for the purposes of preserving public safety, protecting property or conducting surveillance for the assessment and evaluation of environmental or weather related damage, erosion or contamination; and

(b) The drone is operated only in the geographical area specified in a proclamation pursuant to ORS 401.165 (5).

SECTION 6. (1) A law enforcement agency may operate a drone, acquire information through the operation of a drone, or disclose information acquired through the operation of a drone, for the purpose of reconstruction of a specific crime scene, or similar physical assessment, related to a specific criminal investigation.

(2) The period that a law enforcement agency may operate a drone under this section may not exceed five days for the purpose of reconstructing

tion of a specific crime scene, or similar physical assessment, related to a specific criminal investigation.

SECTION 7. (1) A law enforcement agency may operate a drone for the purpose of training in:

(a) The use of drones; and
(b) The acquisition of information through the operation of a drone.

(2) Any image or other information that is acquired through the use of a drone by a law enforcement agency under this section, and any evidence derived from that image or information:

(a) Is not admissible in, and may not be disclosed in, a judicial proceeding, administrative proceeding, arbitration proceeding or other adjudicatory proceeding; and

(b) May not be used to establish reasonable suspicion or probable cause to believe that an offense has been committed.

REGISTRATION OF DRONES USED BY PUBLIC BODIES

SECTION 8. (1) A public body may not operate a drone in the airspace over this state without registering the drone with the Oregon Department of Aviation.

(2) The Oregon Department of Aviation may impose a civil penalty of up to \$10,000 against a public body that violates subsection (1) of this section.

(3) Evidence obtained by a public body through the use of a drone in violation of subsection (1) of this section is not admissible in any judicial or administrative proceeding and may not be used to establish reasonable suspicion or probable cause to believe that an offense has been committed.

(4) The Oregon Department of Aviation shall establish a registry of drones operated by public bodies and may charge a fee sufficient to reimburse the department for the maintenance of the registry.

(5) The Oregon Department of Aviation shall require the following information for registration of a drone:

(a) The name of the public body that owns or operates the drone.

(b) The name and contact information of the individuals who operate the drone.

(c) Identifying information for the drone as required by the department by rule.

(6) A public body that registers one or more drones under this section shall provide an annual report to the Oregon Department of Aviation that summarizes:

(a) The frequency of use of the drones by the public body during the preceding calendar year; and

(b) The purposes for which the drones have been used by the public body during the preceding calendar year.

(7) The State Aviation Board may adopt all rules necessary for the registration of drones in Oregon that are consistent with federal laws and regulations.

SECTION 9. (1) Except as provided in subsection (2) of this section, section 8 of this 2013 Act becomes operative January 2, 2016.

(2) The Oregon Department of Aviation and the State Aviation Board may take any action before January 2, 2016, including the adoption of rules, that is necessary to allow implementation of section 8 of this 2013 Act on January 2, 2016.

PROHIBITION ON USE OF WEAPONIZED DRONES BY PUBLIC BODIES

SECTION 10. A public body may not operate a drone that is capable of firing a bullet or other projectile, directing a laser or otherwise being used as a weapon.

USE OF INFORMATION ACQUIRED BY PUBLIC BODY DRONES

SECTION 11. Any image or other information that is acquired by a public body through the use of a drone that has not been approved by the Federal Aviation Administration, and any evidence derived from that image or information:

(1) Is not admissible in, and may not be disclosed in, a judicial proceeding, administrative proceeding, arbitration proceeding or other adjudicatory proceeding; and

(2) May not be used to establish reasonable suspicion or probable cause to believe that an offense has been committed.

SECTION 12. Section 11 of this 2013 Act is repealed January 2, 2016.

CRIMES INVOLVING DRONES

SECTION 13. (1) A person commits a Class A felony if the person possesses or controls a drone and intentionally causes, or attempts to cause, the drone to:

(a) Fire a bullet or other projectile at an aircraft while the aircraft is in the air;

(b) Direct a laser at an aircraft while the aircraft is in the air; or

(c) Crash into an aircraft while the aircraft is in the air.

(2) A person who intentionally interferes with, or gains unauthorized control over, a drone licensed by the Federal Aviation Admin-

istration, or operated by the Armed Forces of the United States as defined in ORS 351.642, an agency of the United States or a federal, state or local law enforcement agency, commits a Class C felony.

CIVIL REMEDIES

SECTION 14. In addition to any other remedies allowed by law, a person who intentionally interferes with, or gains unauthorized control over, a drone licensed by the Federal Aviation Administration, or operated by the Armed Forces of the United States as defined in ORS 351.642, an agency of the United States or a federal, state or local law enforcement agency, is liable to the owner of the drone in an amount of not less than \$5,000. The court shall award reasonable attorney fees to a prevailing plaintiff in an action under this section.

SECTION 15. (1) Except as provided in subsection (2) of this section, a person who owns or lawfully occupies real property in this state may bring an action against any person or public body that operates a drone that is flown at a height of less than 400 feet over the property if:

(a) The operator of the drone has flown the drone over the property at a height of less than 400 feet on at least one previous occasion; and

(b) The person notified the owner or operator of the drone that the person did not want the drone flown over the property at a height of less than 400 feet.

(2) A person may not bring an action under this section if:

(a) The drone is lawfully in the flight path for landing at an airport, airfield or runway; and

(b) The drone is in the process of taking off or landing.

(3) A prevailing plaintiff may recover treble damages for any injury to the person or the property by reason of a trespass by a drone as described in this section, and may be awarded injunctive relief in the action.

(4) A prevailing plaintiff may recover attorney fees under ORS 20.080 if the amount pleaded in an action under this section is \$10,000 or less.

(5) The Attorney General, on behalf of the State of Oregon, may bring an action or claim for relief alleging nuisance or trespass arising from the operation of a drone in the airspace over this state. A court shall award reasonable attorney fees to the Attorney General if the Attorney General prevails in an action under this section.

APPLICABILITY TO ARMED FORCES

SECTION 16. Sections 1 to 17 of this 2013 Act do not apply to the Armed Forces of the United States as defined in ORS 351.642.

PREEMPTION OF LOCAL LAWS REGULATING DRONES

SECTION 17. Except as expressly authorized by state statute, the authority to regulate the ownership or operation of drones is vested solely in the Legislative Assembly. Except as expressly authorized by state statute, a local government, as defined ORS 174.116, may not enact an ordinance or resolution that regulates the ownership or operation of drones or otherwise engage in the regulation of the ownership or operation of drones.

REPORT TO LEGISLATURE

SECTION 18. On or before November 1, 2014, the Oregon Department of Aviation shall report to a joint interim committee of the Legislative Assembly related to the judiciary, or other appropriate interim committees, on:

(1) The status of federal regulations relating to unmanned aerial vehicles; and

(2) Whether unmanned aerial vehicles operated by private parties should be registered in Oregon in a manner similar to that required for other aircraft.

CAPTIONS

SECTION 19. The unit captions used in this 2013 Act are provided only for the convenience of the reader and do not become part of the statutory law of this state or express any legislative intent in the enactment of this 2013 Act.

EMERGENCY CLAUSE

SECTION 20. This 2013 Act being necessary for the immediate preservation of the public peace, health and safety, an emergency is declared to exist, and this 2013 Act takes effect on its passage.

Approved by the Governor July 29, 2013
 Filed in the office of Secretary of State July 30, 2013
 Effective date July 29, 2013