Drones – What's going on, what's coming…

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AAPCO TECHNOLOGY WORKGROUP

Let's Just Call Them Drones

- **Remotely Piloted Aerial Application Systems (RPAAS)**
- **Unmanned Aerial Vehicles (UAV)**
- **Remotely Piloted Vehicle (RPV)**
- **Small Unmanned Aerial System (sUAS)**
- **Remotely Piloted Aircraft (RPA)**
- **Remotely Operated Aircraft (ROA)**
- **Unmanned Aerial System (UAS)**
- **Unmanned Aerial Spray System (UASS)**

By the Numbers

Drones and Drone Pilot registrations continue to rise drastically.

- Federal Aviation Administration (FAA)
  - 453,635 Commercial Drone Registrations
    - Over 100K increase since 2023
  - 481,760 Commercial Remote Pilots
  - Part 137
    - January 2025 – 1500 Part 137 Waivers for Ag Drones
    - 2021 – 40 Part 137 Waivers for Ag Drones

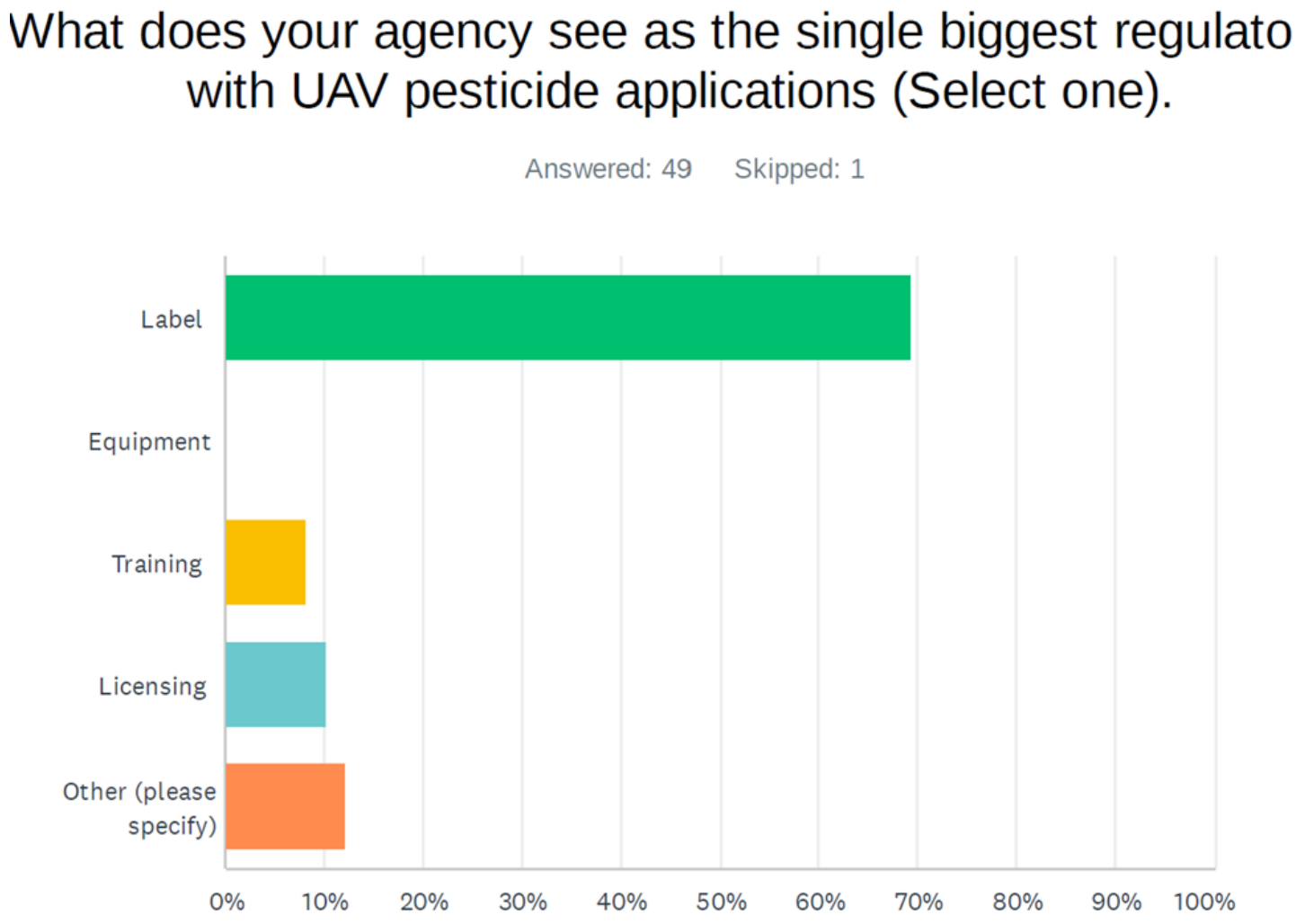
Up until 2025, Indiana averaged less than 30 conventional aerial application businesses

- As of November 2025
  - 205 Businesses
  - 311 Applicators

Favorite Name

- Ag Force One Drone Services LLC

What's the Issue?

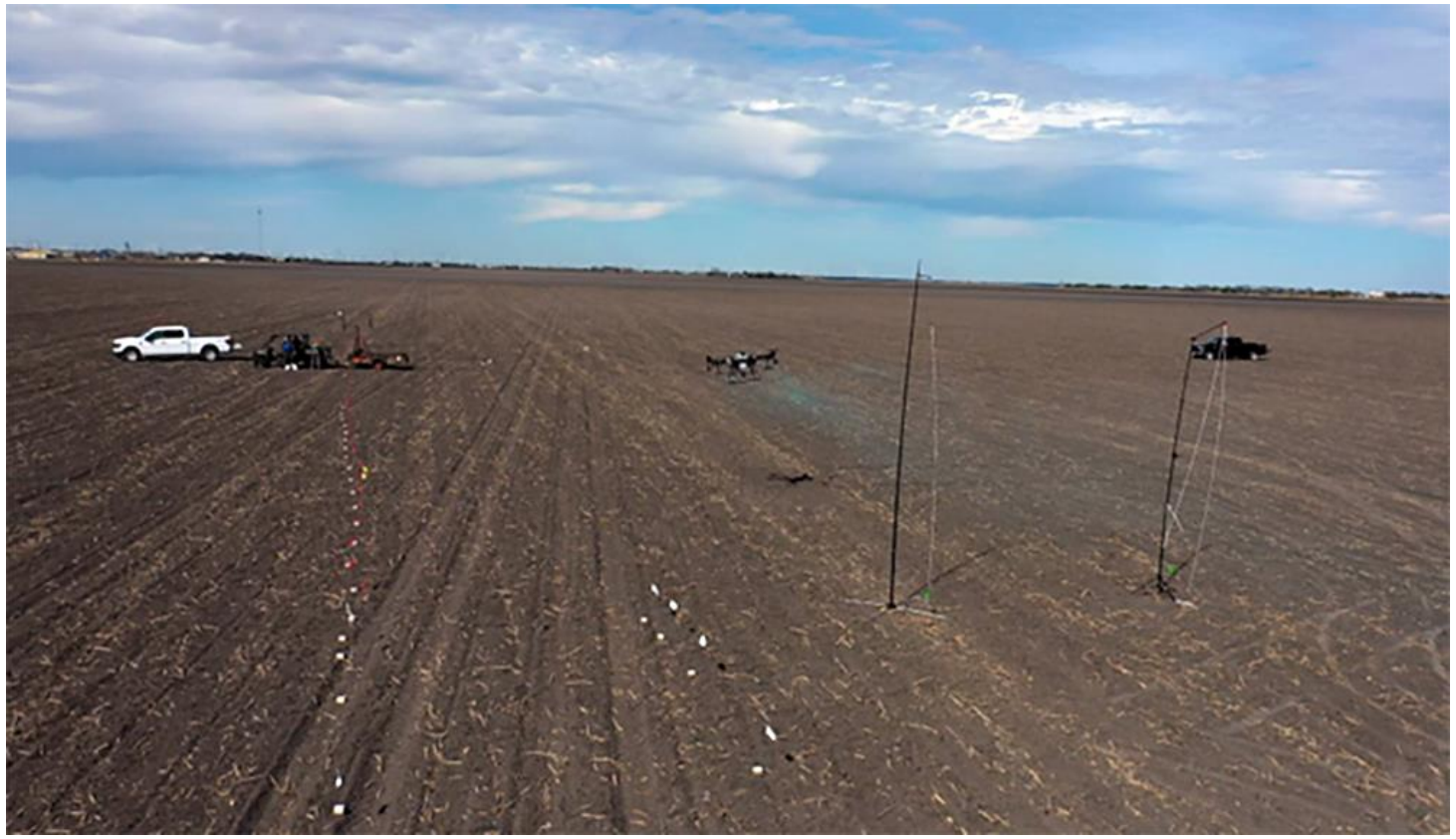


Why is this an Issue?

- No drone label language to follow.
- Default to aerial, doesn't really work, restrictive to conventional types.
  - Causes applicator guesswork
  - Word of mouth
  - Following non-researched based settings. #SocialMedia
  - Inexperienced Applicators
  - Not coming from pesticide related industry.
- Recommended Swath
  - Research indicates effective roughly have that.
  - Causes streaking, yield lose to grower.

Compliance Issues

- Large increase in spray drone applicators and businesses.
- Will we start to intake drone complaints in 2026?
  - Drift?
  - Unlicensed?
  - Label?
- Have you had a drone complaint?



What is being done?

Unmanned Aerial Pesticide Application System Task Force (UAPASTF)

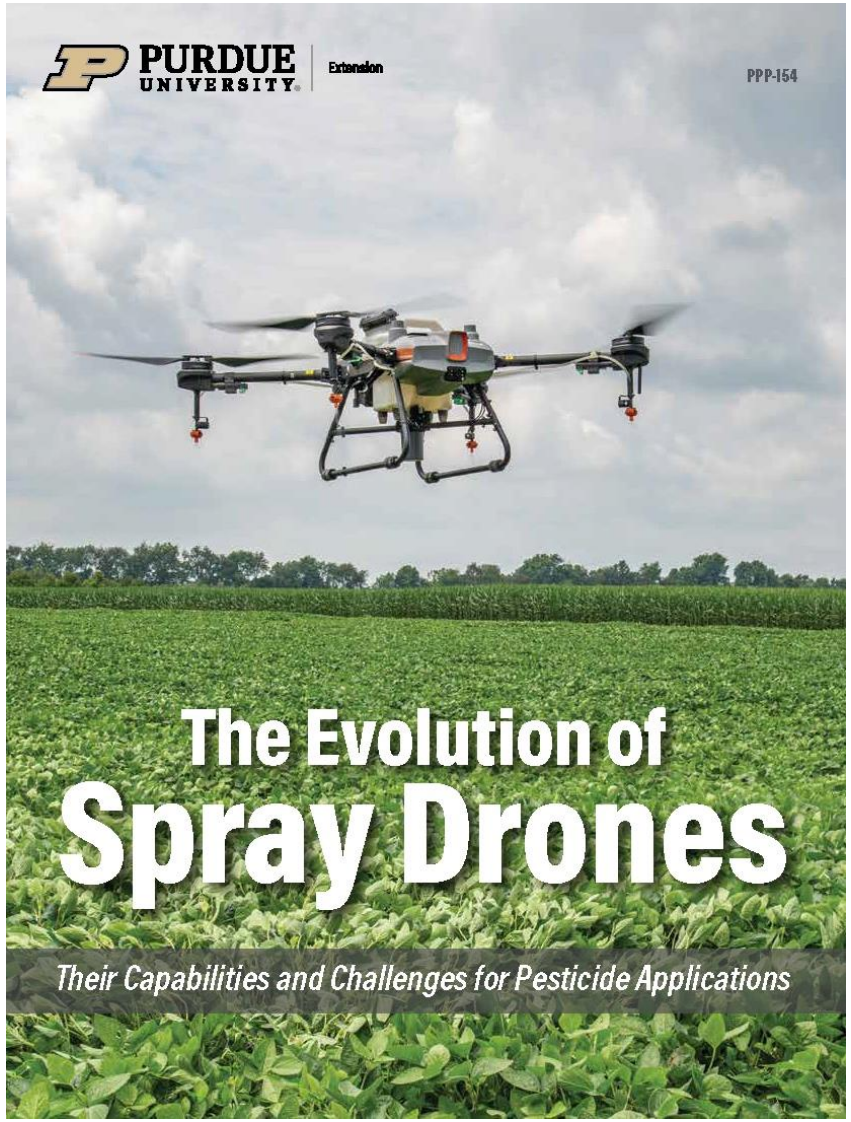
Global organization composed of pesticide manufacturing companies working together to gather data in support of the use of drones.

- July 2025 First-ever data submissions spray drift field trials using unmanned aerial spray systems (UASS)
  - U.S. Environmental Protection Agency (EPA),
  - Health Canada's Pesticide Management Regulatory Agency (PMRA),
  - Australia's Australian Pesticides and Veterinary Medicines Authority (APVMA),
  - United Kingdom's Health and Safety Executive (HSE) Chemicals Regulation Division (CRD).

Future work by UAPASTF will include more drift studies, developing drone best management practices, and estimating occupational exposure from drone applications.

AAPCO and CLA Drone Labeling Workshop

- 3-part virtual series will bring together drone and pesticide stakeholders across agriculture, non-agricultural uses, mosquito control, aquatics, registrants, regulators, and applicators to explore the future of drones in pesticide applications and the critical role of labels & labeling.
- Virtual Workshop Part 1: Overview
- Virtual Workshop Part 2: Drafting initial label language in breakout sessions.
- Virtual Workshop Part 3: Consolidating draft label language, come to a consensus on common label language.



Applicator Resources

- Conferences / Workshops
  - **Spray Drone End User Conference**
    - Largest US conference for applicators and manufactures.
    - Supporting ag drone operators across the US and world with credible information and practical knowledge related to drone spraying and spreading.
  - **Remotely Piloted Aerial Application Systems (RPAAS)**
    - Workshop brings together the global community of spray drone professionals, innovators, regulators, manufacturers and stakeholders
      - Offer free virtual registration for regulators.
  - Both request a regulatory update.

- **The Evolution of Spray Drones**
  - Purdue Pesticide Programs
  - First complete spray drone guide
  - Free on PDF


Long And
Winding Road
ahead

FAA's Part 108 rulemaking for Beyond Visual Line of Sight (BVLOS) Drone Operations

FAA Part 108 – Proposed Rule

FAA's Part 108 rulemaking for Beyond Visual Line of Sight (BVLOS) drone operations was released August 2025.

Direct result of Executive Order 14307 Unleashing American Drone Dominance

- Heavily focusing on logistics-based BVLOS operations
- Emphasis on highly automated operations AI with simplified user interfaces effectively precludes traditional pilot-in-the-loop control.

Rule coming Spring of 2026, implementation 6-12 months, Spring 2027

- Received 3000 public comments
  - Not all positive
  - Denied 2 requests to extend comment period.
    - Sighted 240-Day deadline set by Executive Order 14307 - Unleashing American Drone Dominance
    - Anticipate potential modifications to address at least some.
    - Will not know of modification until after review.

From Exemptions to a Set Streamlined Framework

- Covers Part 137 Exemption
- Can still operate under Part 107 / 137
- Can transition your part 107 to part 108 during your renewal process
- Will only be able to fly BVLOS with Part 108

Two-Tiered Framework

- **Permitted Operations**
  - Small Scale, low risk operations
    - Farmers
  - Up to 1,320 Pounds
  - Limit 10 Active Aircraft
  - Ag Spraying
  - Renew every 2-years
- Permitted agricultural operations are limited to category 1 population area.

- **Certified Operations**
  - Large Operations
    - Commercials Ag Spraying
  - Populated Areas
  - Unlimited Active Aircraft
  - Up to 1,320 Pounds
  - FAA oversight, Safety Management System (SMS) and a training program.
  - Commercials Ag Spraying
  - **Up to category 3 depending on population density**
  - May Require Avoid and Detect per Category

Population Density Categories (Risk-Based)

Category 1: Remote areas, extremely low density.
Category 2: Rural areas, low density.
Category 3: Developments, moderate density.
Category 4: High density (commercial, multifamily).
Category 5: Dense urban centers, very high density

Category	Definition	Restrictions
Category 1	Further than 1 statute mile from a group of 10 people or more.	Must be conducted 50 feet from non-participants.
Category 2	Within 1 statute mile of a group of 10 people or more.	Cannot use radio links certified under 47 CFR Part 15, which requires different spectrum allocation.
Category 3	Within 1 statute mile of a group of 25 people or more.	Must meet Category 2 Operations and conduct the operation using the approved method for “strategic deconfliction.”
Category 4	Within ½ mile of a group of 100 people or more.	Must meet Category 3 Operations and hold an operating certificate.
Category 5	Within ½ mile of a group of 2,500 people or more.	All aircraft must avoid operating where it could create a hazard to people on the ground AND meet Category 4 operations, while ensuring all aircraft involved are able to automatically detect and avoid noncooperative aircraft.

New Roles

Both operations require

Operator

- Person or Business

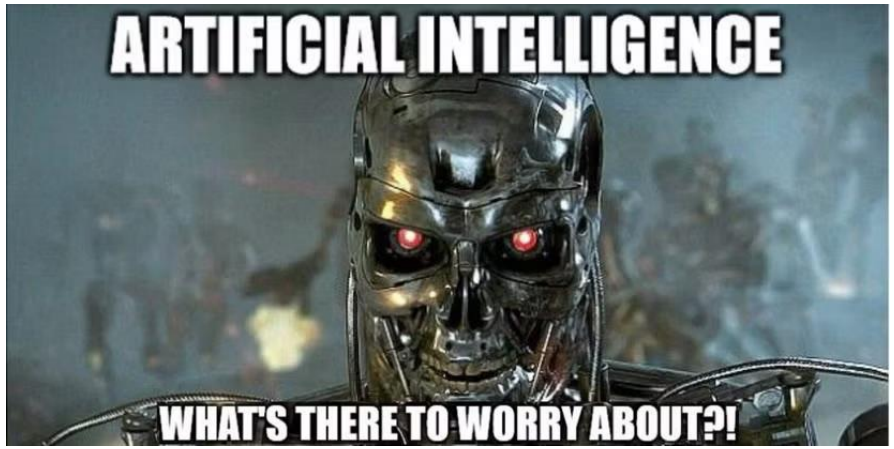
Operations Supervisor

- Final authority on safe and secure operations

Flight Coordinator

- Functions as pilot, does not need license, can operate multiple drones, 5 hours of experience
- They have limited access to drones due to requirement of simplified user interaction.
- Basically, just watching

Possible Issues



- Flight coordinators would issue high-level commands through automated systems (AI) rather than directly controlling aircraft.
  - Automated operations with simplified user interfaces effectively precludes traditional pilot-in-the-loop control.
    - Who is the certified applicator
    - 10 drones sent out to 10 fields?
    - How to regulate.
- How to maintain AEZ (Application Exclusion Zone)
- Detect and avoid for other aircraft required
- No required people/ground detection technology?
  - Will we require someone in-field?
  - Expensive add-ons
  - Label or regulation

Where’s it Going?

ROTOR SPRAYHAWK

PYKA PELICAN 2

Questions?

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- Normalizing Unmanned Aircraft Systems Beyond Visual Line of Sight Operations
- Docket ID: FAA-2025-1908