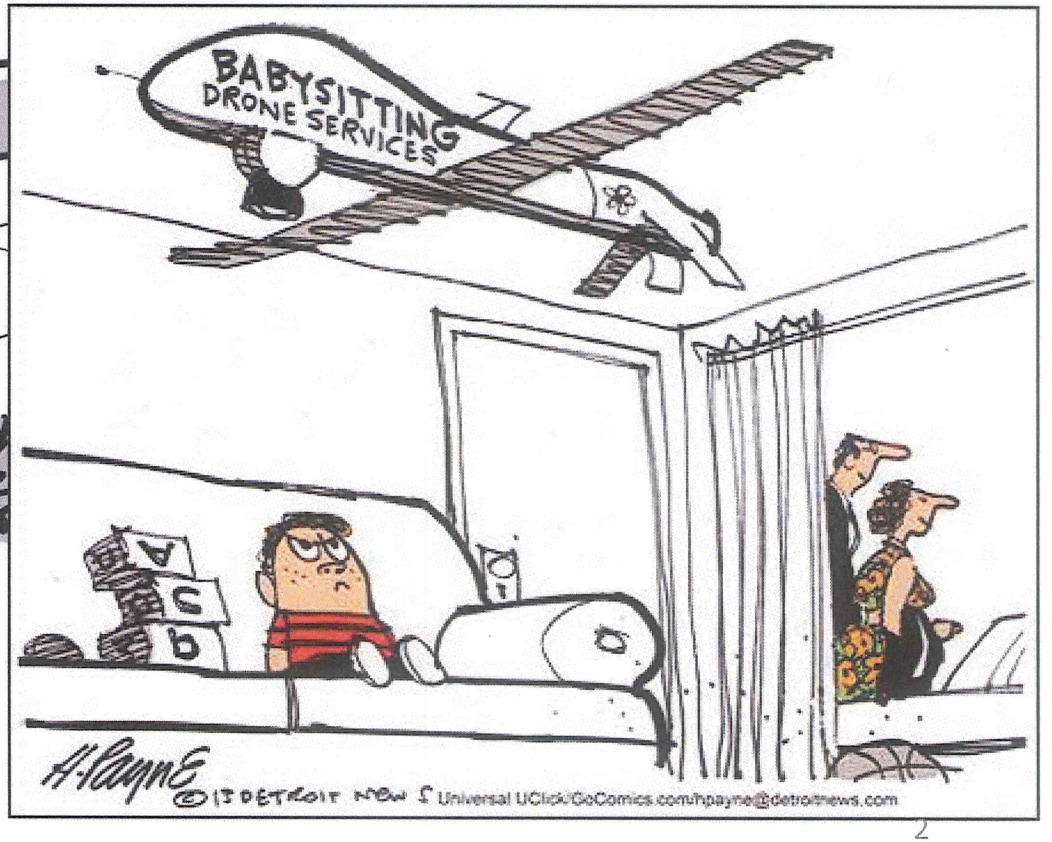
Unmanned Aerial Systems (UAS) aka "drones"

Drone

UAS

Pros and Cons



FAA Definitions

- **Drone:** Not used by FAA
- **Unmanned Aircraft (UA):** "aircraft" flown by a "pilot" regardless of where the pilot is located.
- **Unmanned Aerial Vehicle (UAV):** A term no longer used by FAA
- **Unmanned Aerial System (UAS):** A UA and its associated elements related to safe operations, which may include Control Stations (ground, ship, or air-based), control links, support equipment, payloads, flight termination systems (FTS), and launch/recovery equipment.
- **Certificate of Waiver or Authorization (COA):** An FAA grant of approval for a specific operation. COAs are issued by the Air Traffic Organization (ATO) as an authorization for public aircraft operators to conduct a specific UA activity.
- **Airworthiness Certification:** A condition in which the unmanned aircraft system (UAS) (including the aircraft, airframe, engine, propeller, accessories, appliances, and control station (CS)) conforms to its type certificate, if applicable, and is in condition for safe operation.

UAS in Oregon

- Tasks:
  - Report to Legislature by Nov 1, 2014
    - Status of federal regulation of UAS
    - Recommendation on registering private use UAS
  - Registration of Public Use UAS by Jan 2, 2016
    - Database
    - Rulemaking
    - Fee structure
  - Coordination/Education of other public agencies
    - State agencies: Forestry, AG, ODFW, Universities/Colleges
    - Law enforcement: State, Counties, Cities

Federal Issues

- FAA Reauthorization bill 2012
  - directed 6 test sites around country
  - Directs UAS entry into National Airspace by 2015
- Control: <u>incredibly</u> restrictive (See National Policy)
  - Privacy, Due Process
  - Risk of collision with piloted aircraft
  - Feds Own **<u>All</u>** Airspace
  - COA and/or Airworthiness Certification Required
- Recreational Use:
  - Recreational Advisory Circular from 1981 still governs
  - No flight above 400 ft
  - Clear of airports, crowds

State Issues

- State Issues:
  - House Bill 2710
    - Law enforcement/privacy
    - Preemption; no local laws regulating UAS
    - No weaponization
    - Civil penalties for overflight (below 400 ft.)
    - Not applicable to recreational UAS
    - Airspace: Federal Preemption
    - State Preemption:
      - No regulation other than state level
  - Cottage Industry already exists in Oregon
    - Private enterprises using recreational UAS
    - Camera mounted (gyro stabilized)
    - Available at any hobby store/mail/home-built
    - Registration challenges:
      - "chasing bees" vice "access to the hives"

UAS are a Growth Industry, …and yet there are challenges

Unmanned aircraft industry poised to create 70,000 jobs in next three years
March 13, 2013 by General Aviation News Staff

Unmanned Aerial Vehicle Market to Reach $8351.1 Million by 2018 at a CAGR of 3.30%
July 30, 2013 - **New Report by MarketsandMarkets**

Privacy a looming issue as drone regulation loosens
http://news.yahoo.com/blogs/ticket/privacy-looming-issue-drone-regulation-loosens-111425343.html

Concerns rise about growing use of domestic drones
July 18, 2013 Tom Loftus, The (Louisville, Ky.) Courier-Journal

Town of Deer Trail considering hunting licenses for unmanned aerial vehicles, bounties for drones;
'They fly in town, they get shot down,' man says
Aug 9, 2013 –ABC Channel 7 News – Denver

FAA grounds Midwest journalism school drones
http://www.stltoday.com/news/local/education/faa-grounds-midwest-journalism-school-drones/article_3677929f-01d2-5cad-b018-0f7ad790480c.html

"Drone"

- Used by military as targets; could be towed or flown remotely

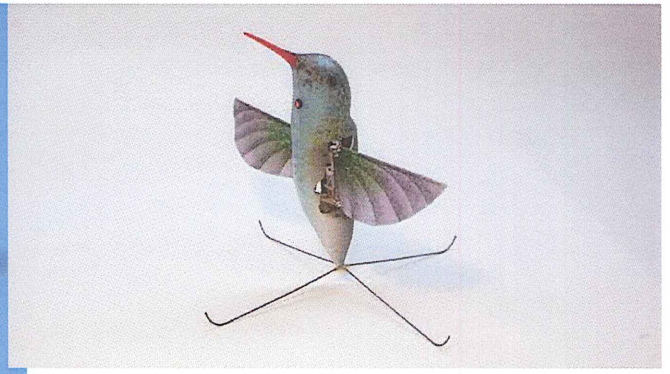
Predator
Unmanned Aerial System (UAS)

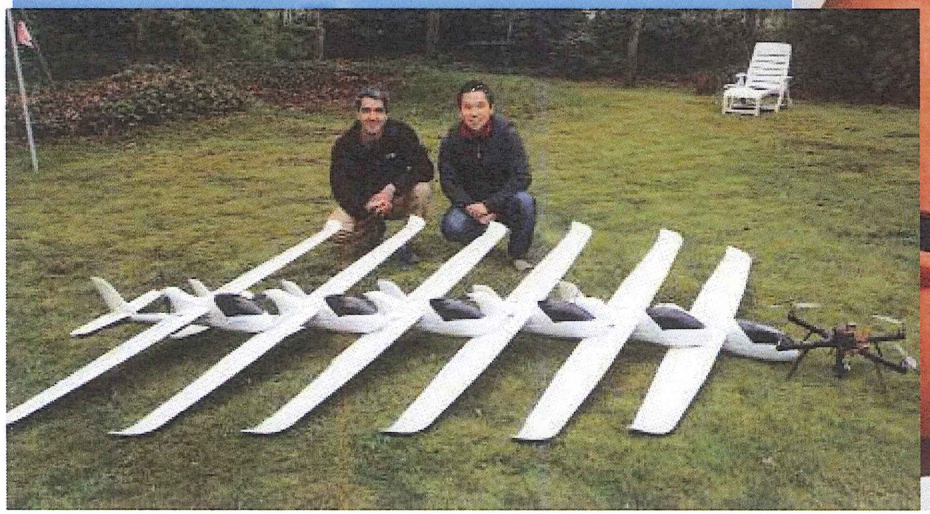
UAS Launched From Aircraft Carrier

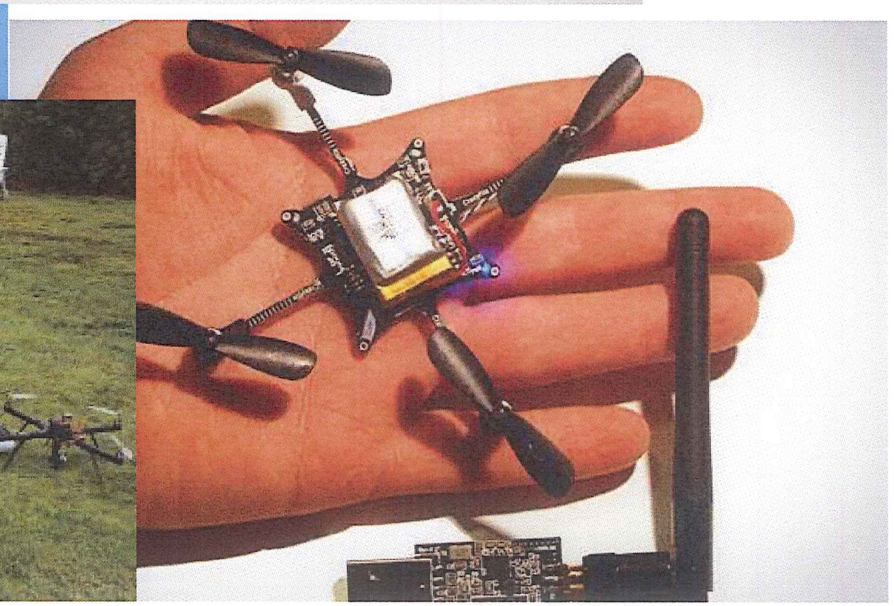
UAS come in many sizes

Commercial UAS

- Examples: fast growing industry







UAS Technology is Here Today!

http://www.youtube.com/watch?v=QmWD76jwjbQ&feature=player_detailpage&t=73

http://www.robotshop.com/cropcam-unmanned-aerial-vehicle-uav.html

UAS Usage Potential!

Agriculture –
- Field Evaluation for water, pesticide, fertilizer application focus,
- Animal counts and location.

Forestry –
- Fire detection
- Disease Tree vector location
- Invasive species location

Fish and Wildlife -
- Wildlife tracking and monitoring
- Invasive Species identification
- Law Enforcement – poaching, trespassing, illegal land use

Law Enforcement/Emergency Management –
- Search and Rescue
- Damage Assessment identification and documentation
- Overhead command and control (Swat, Traffic accident, major incident)

Questions?