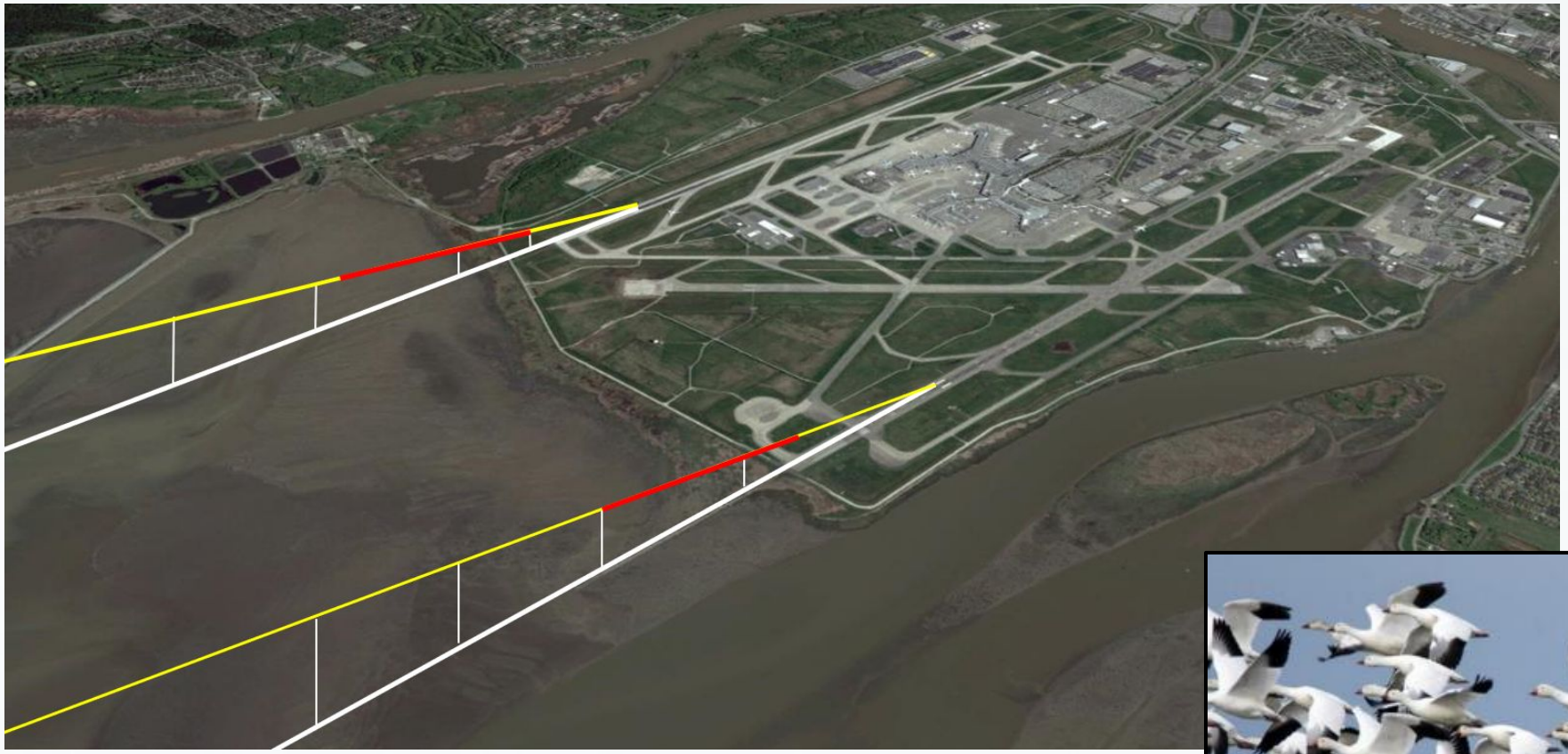
RPAS operations CYVR

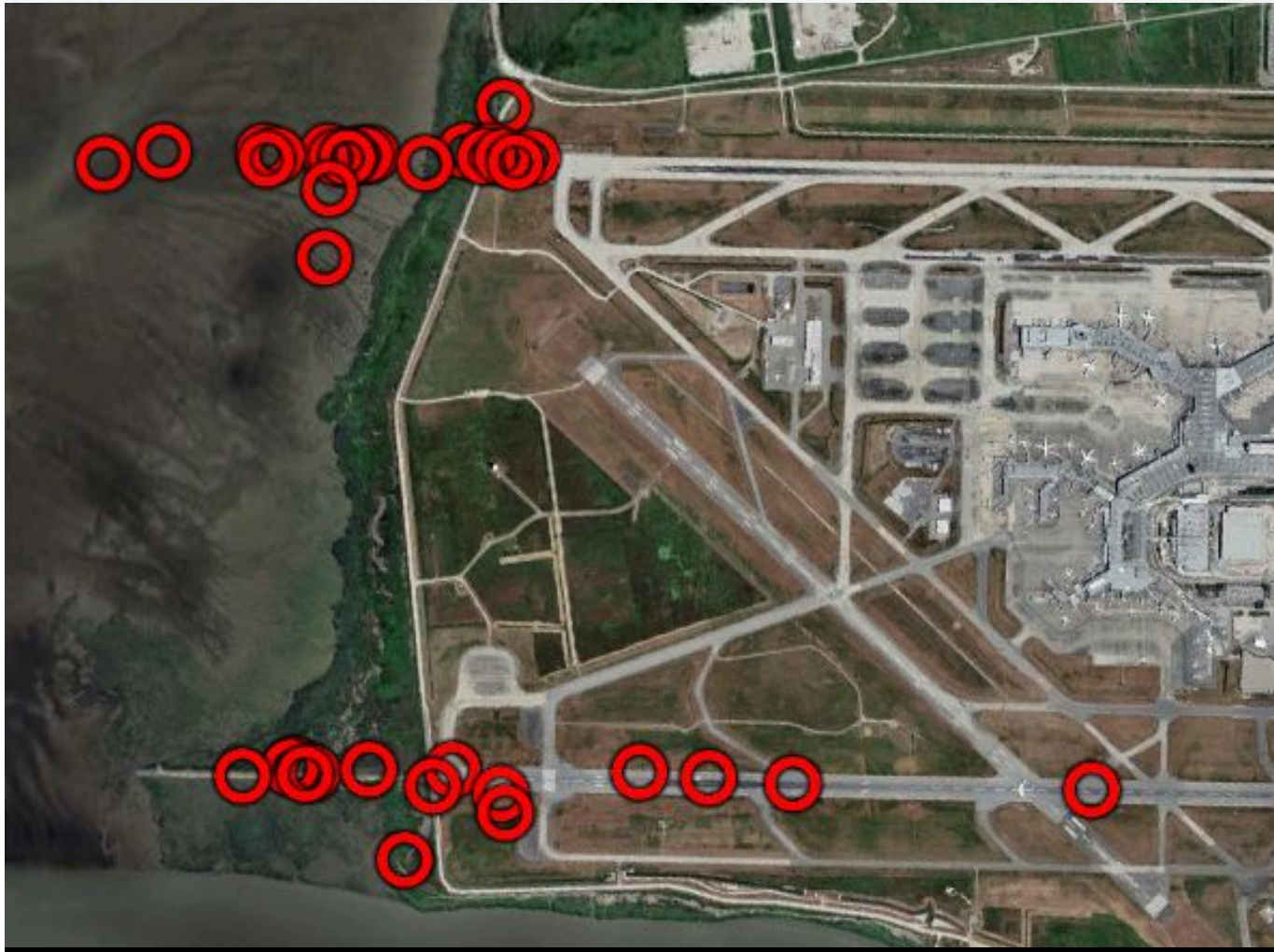
Uses of drones at YVR

- Wildlife management
  - Waterfowl dispersal
  - Animal monitoring
- Operational surveillance
  - Infrastructure inspections
  - Incident monitoring

Wildlife Management – Waterfowl Dispersal

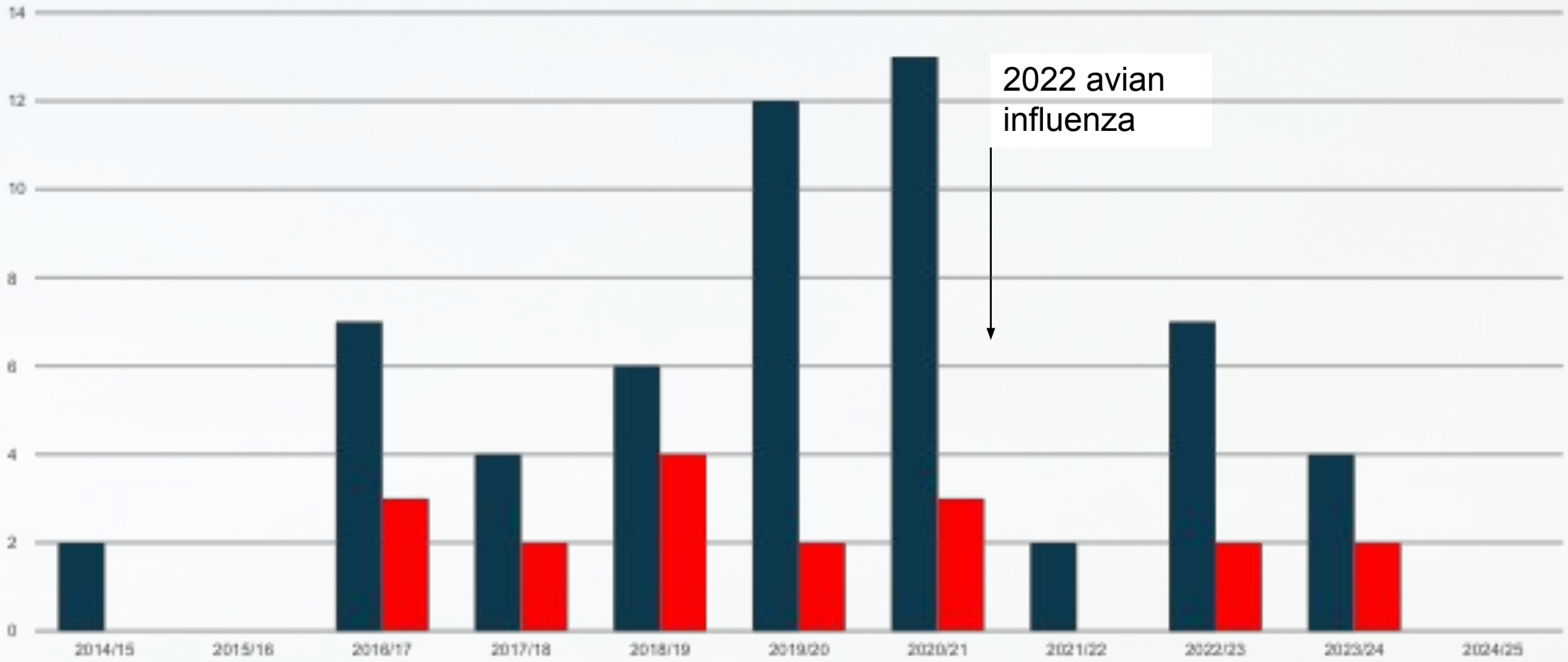


Snow Goose encounters



Snow Goose strike & near miss locations:
Oct 2019 to January 2022

Count of strike incidents involving Snow Geese, by winter period: 2014/15 to 2024/25

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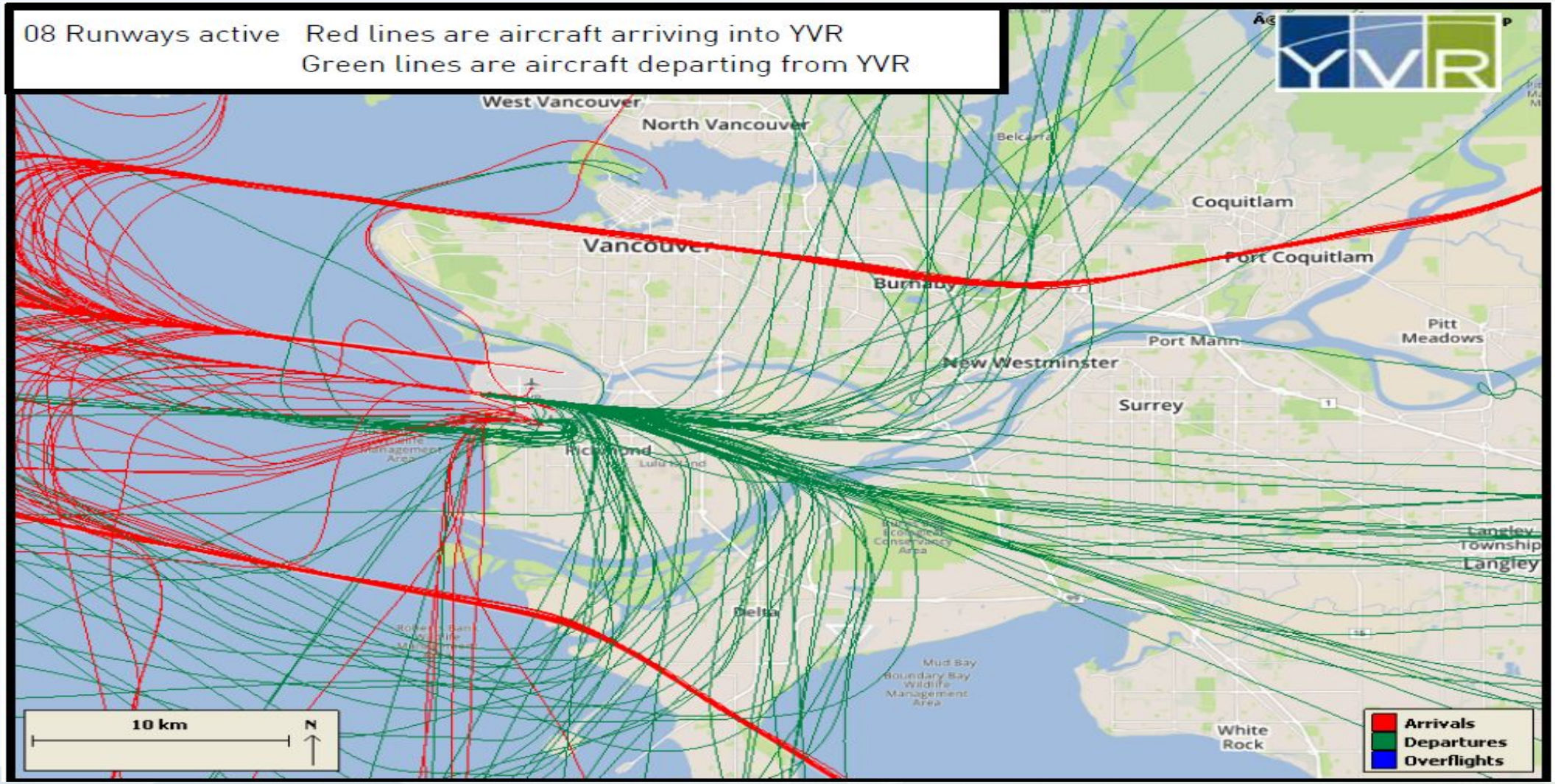
FALCON

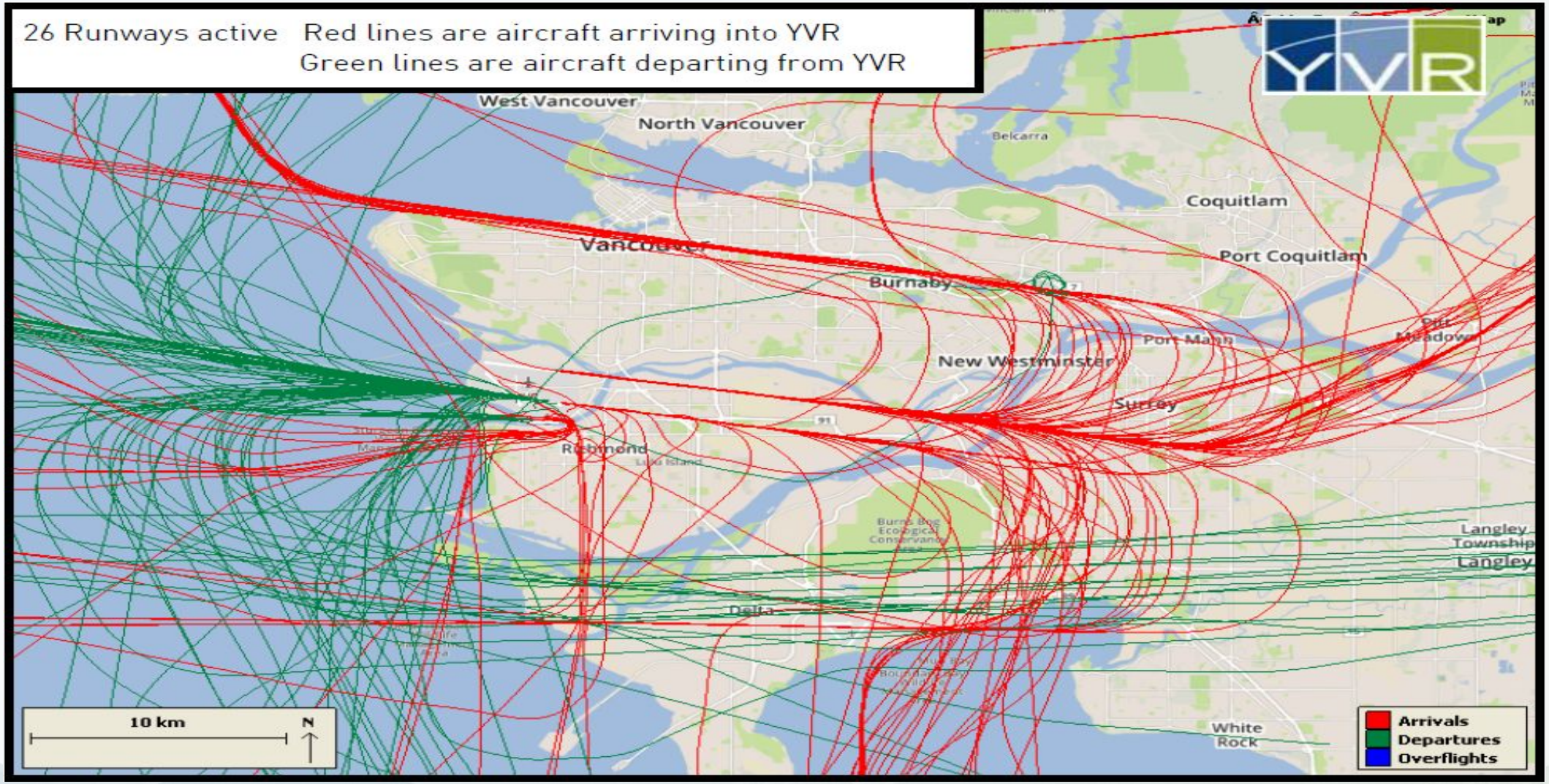
Can a drone increase effectiveness of wildlife dispersal on an intertidal estuary?

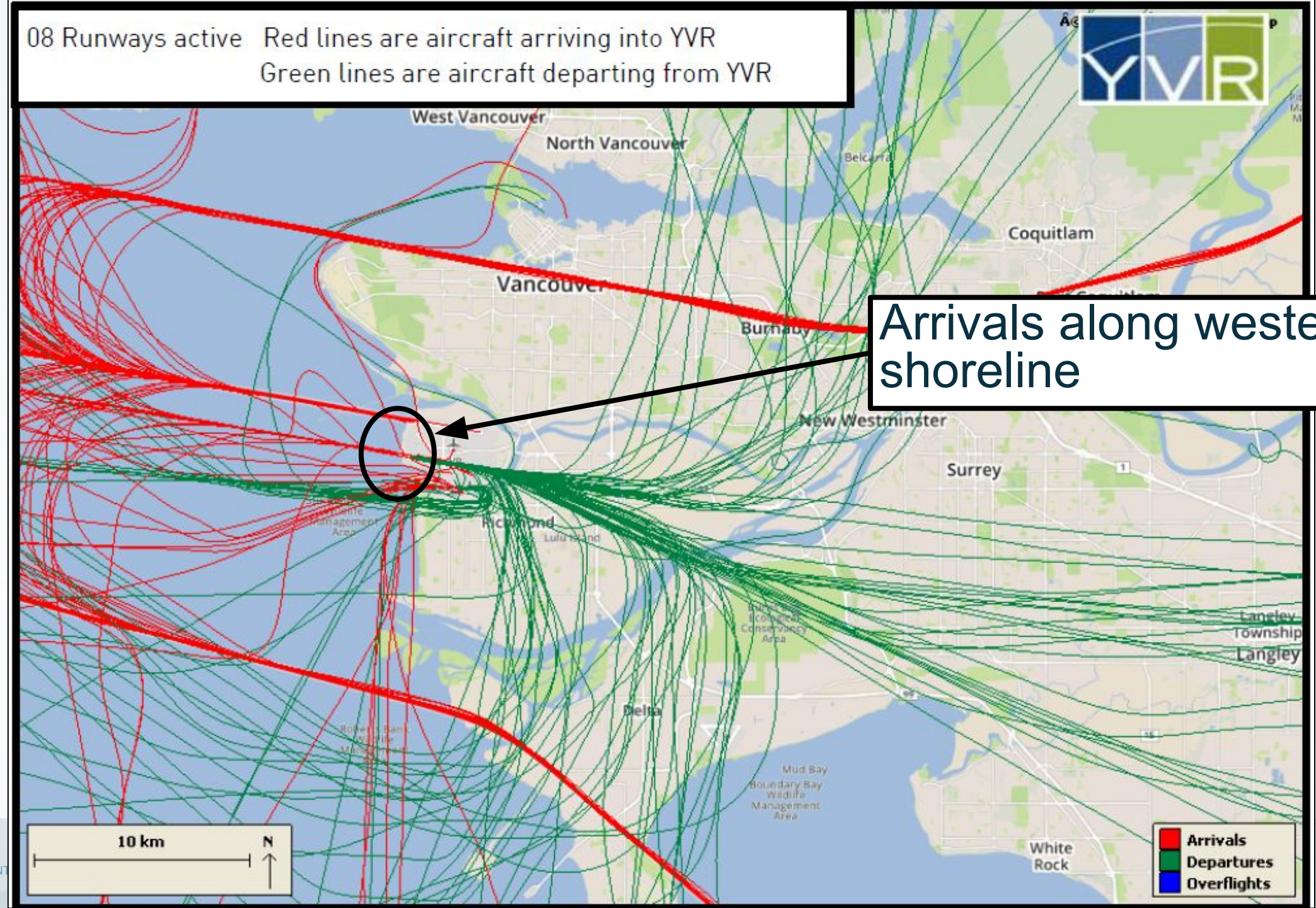
Safe drone operations in complex airspace

Runway configuration 08



Runway configuration 26



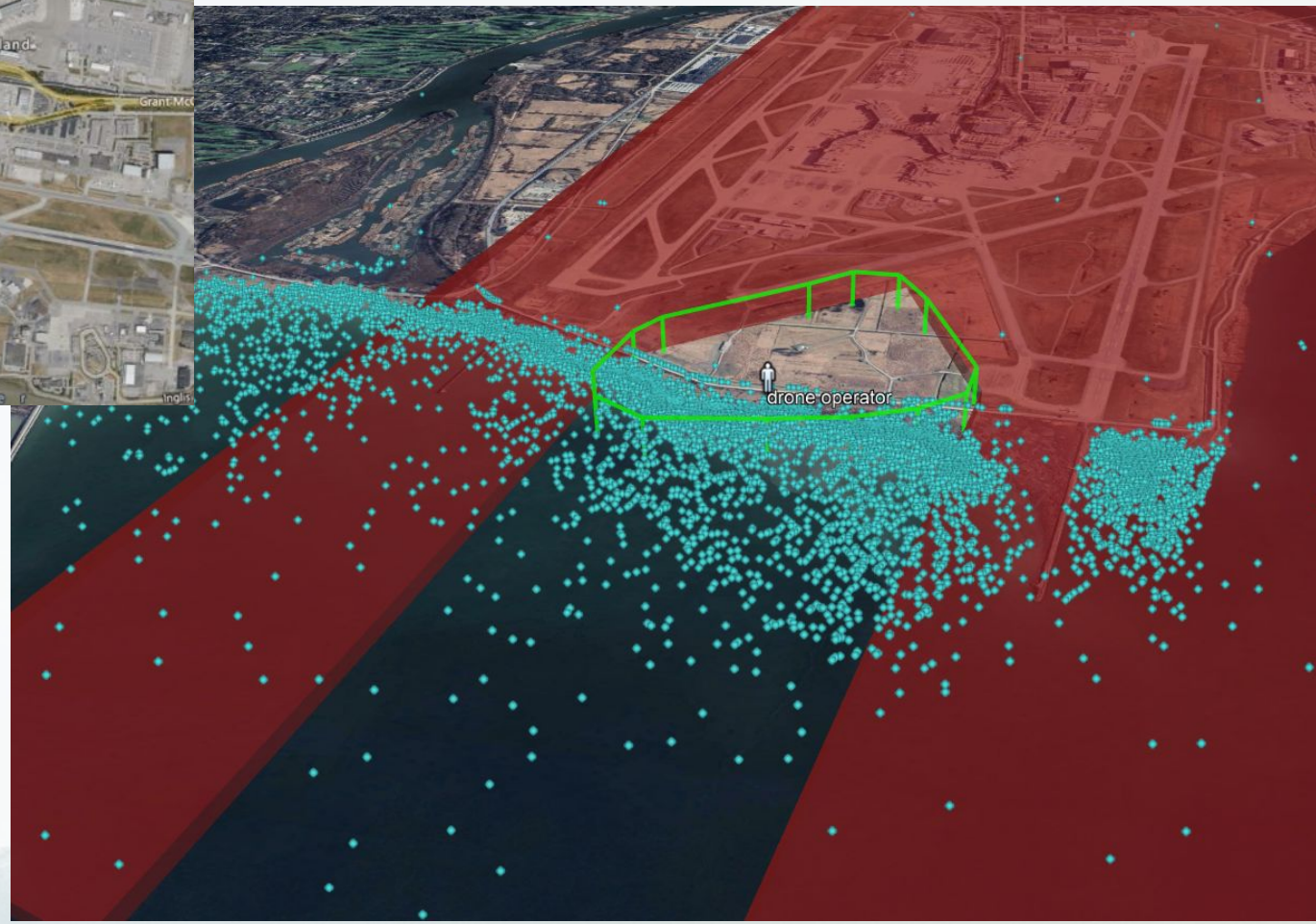


Arrivals along western shoreline

Drone ops restricted to 26 (westerly flow) operations

Operating Restrictions

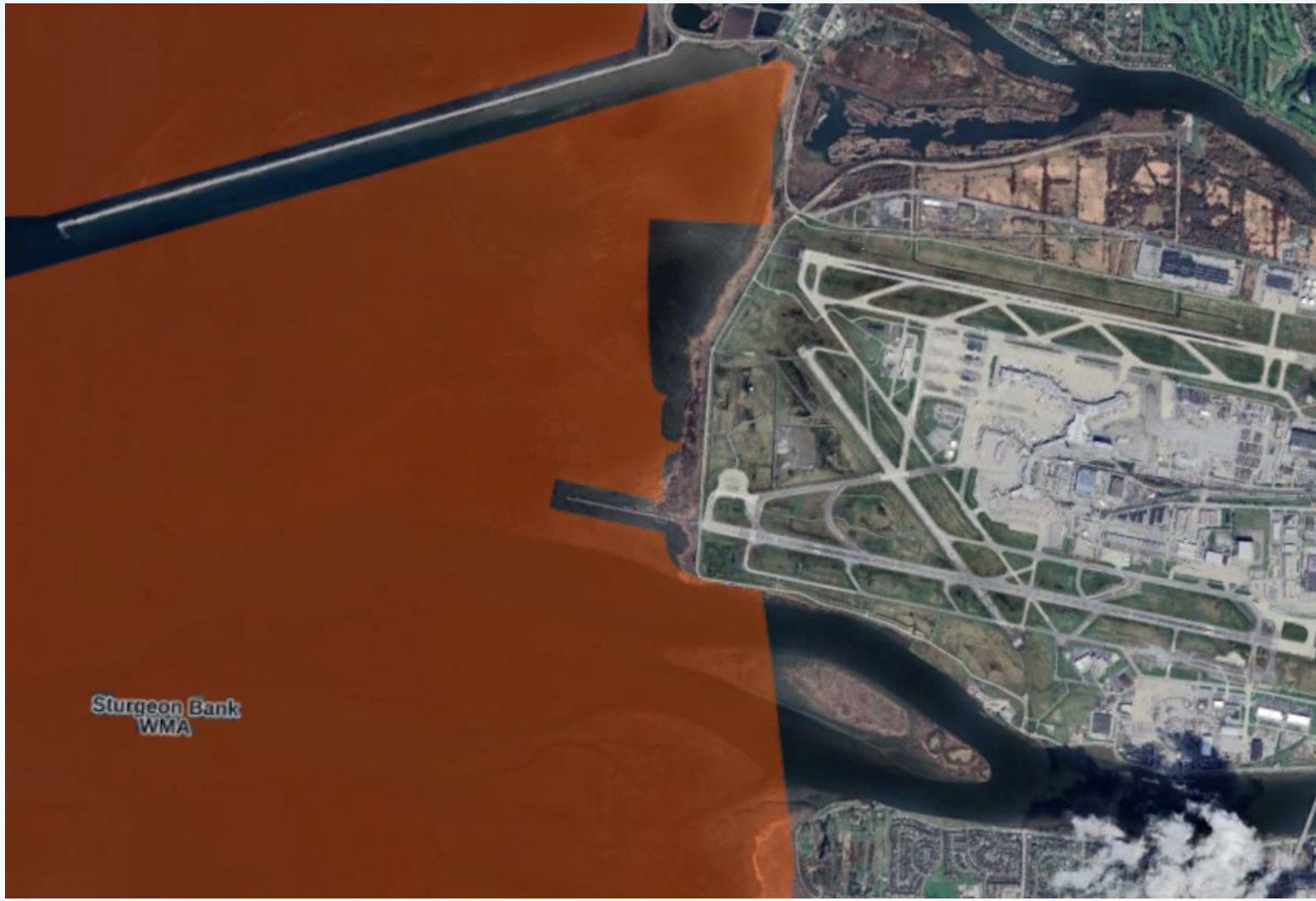
- This RPAS mission can only be activated when Runway 26L and Runway 26R are the active runways for departures and arrivals.
- When Runway 08L, 08R, 13, or 31 are active, this mission is not authorized.
- The Geo Fence must be in place protecting the OLS for the North and South Runways, with a height limit of 147 ft AGL (45m).
- Runway 13/31 must be NOTAM CLOSED for take-off/landing operations.
    - Note: Runway 13/31 can still be used as a taxiway
    - Note: Runway 31 THLD can still be used for helicopter take-off/landing operations.
- Only 1 RPAS is permitted to operate at a given moment.



Geofences required to keep drones in prescribed operating area

Other regulatory permissions:

- Letter of authorization, Sturgeon Bank Wildlife Management Area
- Migratory Bird Damage-Danger Permit



Phase 1: Initial test flight with quadcopter ‘restricted’ geofence

Phase 2: fixed-wing ‘restricted’ geofence

Phase 3:fixed-wing ‘expanded’ geofence, and

Post incident inspection: aircraft overruns runway

- Collect evidence for TSB
- Aerial photos for initial damage estimates

Detecting and monitoring animals – exploring the use of drones for finding nesting birds

grassland nesting birds

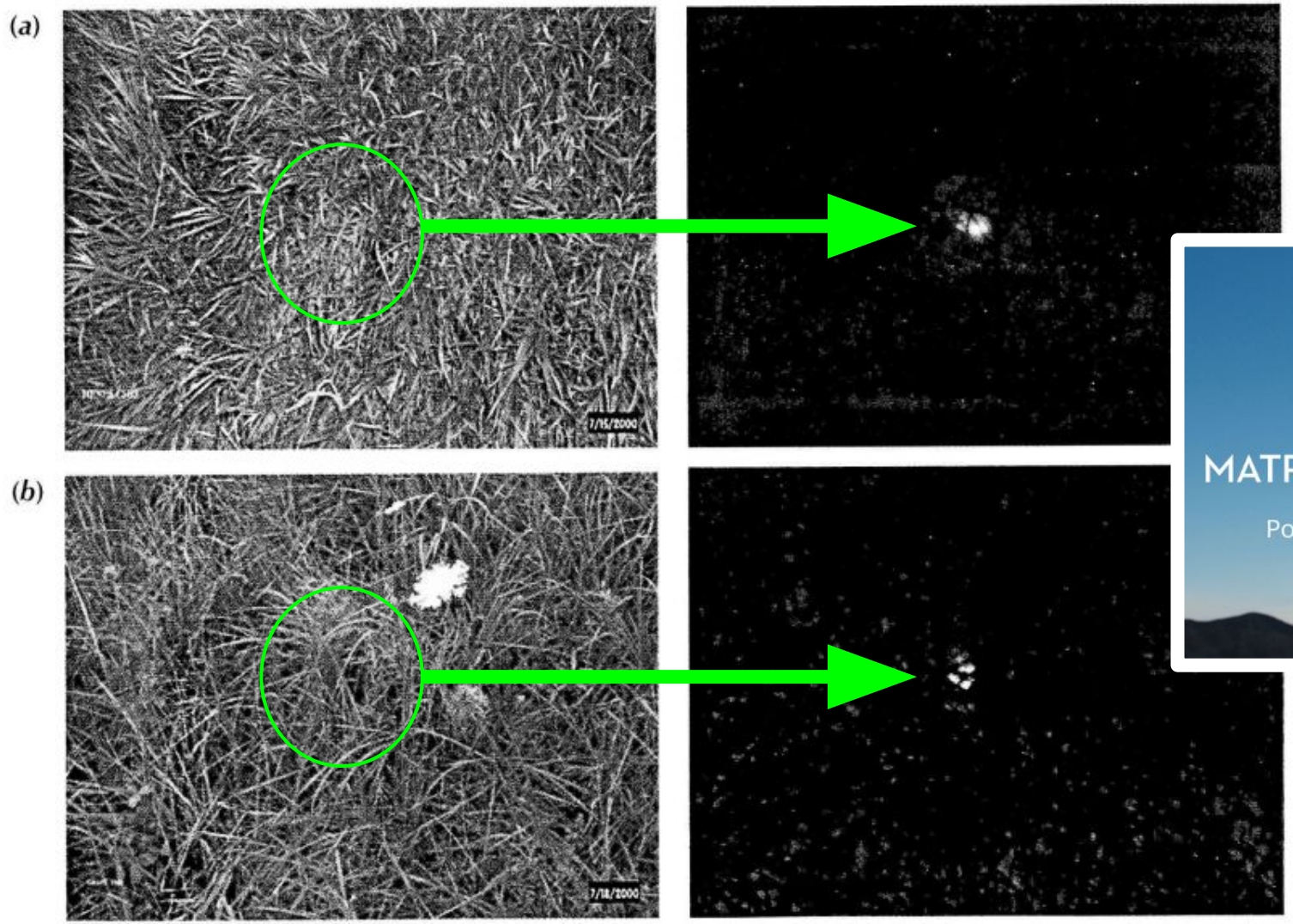


Figure 1. Visual and thermal images of a Henslow's sparrow nest (*a*) and a grasshopper sparrow nest (*b*). Both line-of-sight images were taken from about 2 m away from the nest. The temperature range of the Henslow's sparrow nest image was between 28.3°C (yellow-white) and 18.8°C (dark-purple). The temperature range of the grasshopper sparrow nest was between 23.3°C and 17.9°C. Both thermal images are as they appeared during the field search in the imager's viewfinder.