

Introduction

- Over 200 land based and 100 sea based commodities
- Total farm cash receipts:
 - \$1.51 billion in 2015 from sale of crops
 - \$1.53 billion from sale of cattle, hogs, poultry, eggs, dairy, honey and other animals and animal products
 - Economic losses from pests and predation can be considerable
 - Estimated predation losses to BC beef sector was \$ 4 million in 2011
 - Impacts from invasive plants predicted to rise to \$139/year by 2020

Summary of Impact

- Social impacts:
 - Creation of dangerous driving conditions – i.e. ungulates on roads
 - General nuisance and disturbance in urban areas (i.e. bird scare cannons)
 - Potential for spray drift
- Economic impacts:
 - Direct control and management costs
 - Destruction of pastures and crops
 - Profit loss (direct losses, decreased quality, impact to exportability)
 - Potential and actual disease transmission

Scenario (**Challenge**) #1 – Drones as Tools

- **Innovation Challenge**
 - An economic solution to software, and interpretation of NDVI, NIR in relation to specific crops and crop health
 - Economically viable and producer friendly software for birds of prey and drone scaring identification of predator presence (wolves, coyotes, bears)
 - Camera and software to distinguish elevated livestock temp, an identification of carcasses and herd health

Scenario (**Challenge**) #2 – High Value Crop/Livestock Loss

- Stored feed, grain, as well as other high value crops are at risk due to ungulates
- Predator control fencing to address 4 legged predators
- **Innovation Challenge**
 - Development of an economical and user friendly feedback electric fencer
 - Include cell phone notification
 - Could be linked to watering system updates
 - Reducing labour
 - Predator deterrence

Other pest challenges where innovative solutions are needed include:

- **Translation** of existing crop decision tools into other languages (i.e. Punjabi)
- **Pest Management** solutions to invasive plants in riparian areas
- **Data Management**, there are reams of spatial data from crop health how to best utilize

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