

# Avian Consumption at John Day Dam & The Dalles Dam 2010

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# FFU Avian work 2009 & 2010

- **Goal**

- ▶ Determine the impact of avian predators on juvenile salmonids at John Day & The Dalles Dam in 2010.

- **Objectives**

- ▶ Estimate number and composition of piscivorous avian species.
- ▶ Estimate smolt consumption
- ▶ Determine the effectiveness of boat hazing and a new synthetic avian line array at John Day Dam.

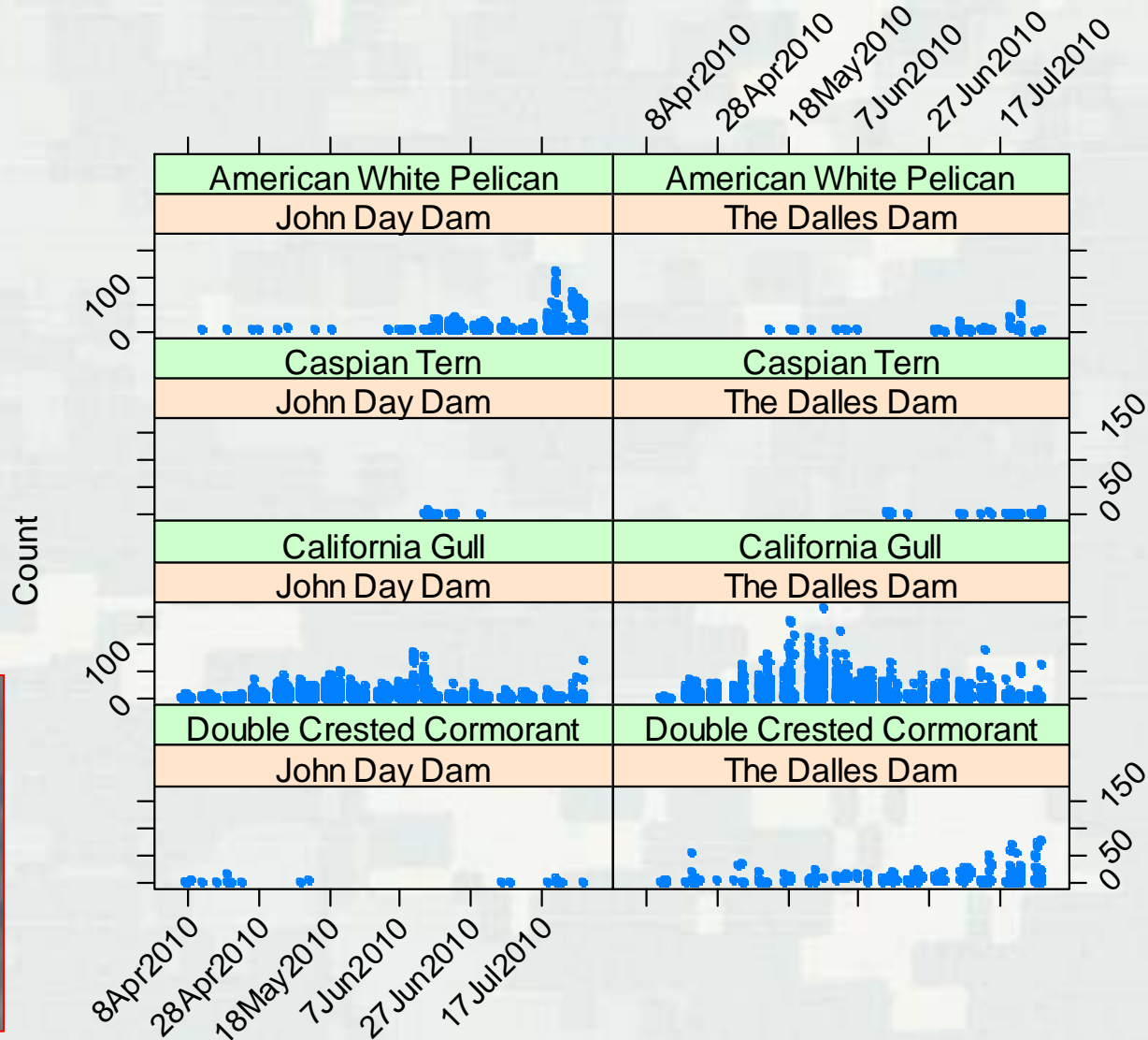


# Methods: Data collection

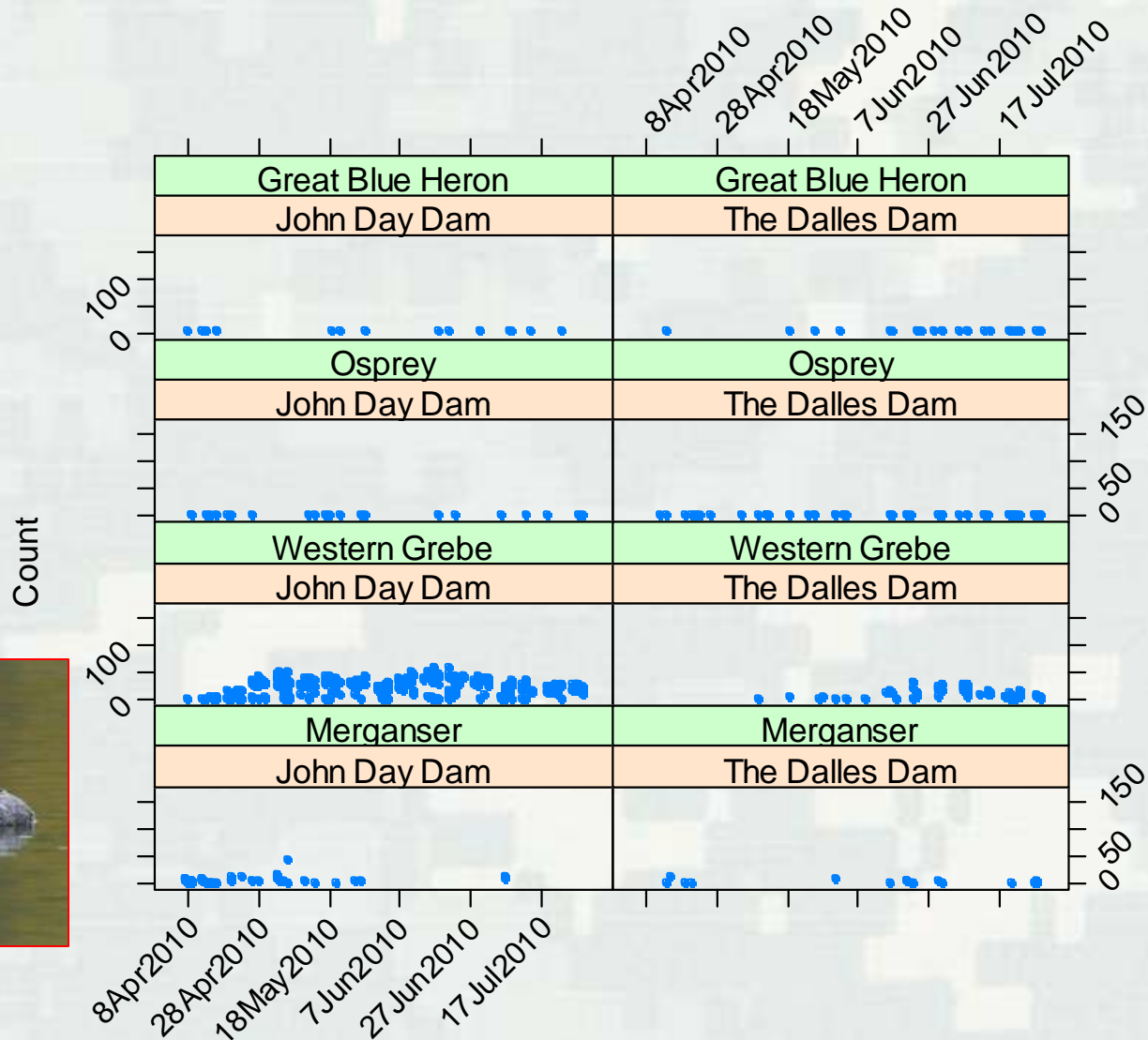
- Direct observation of zones
  - ▶ Dawn to Dark
  - ▶ Count birds by species
  - ▶ Count attacks then evaluate attacks (30 min + 30 min)
  - ▶ Count birds by species
  - ▶ Move to next zone
  
- Weekly diet analysis
  - ▶ Ad hoc collection of stomachs each week from USDA-WS
  - ▶ Analyze soft tissue (recent prey)
  - ▶ Lab ID bones (less recent prey)



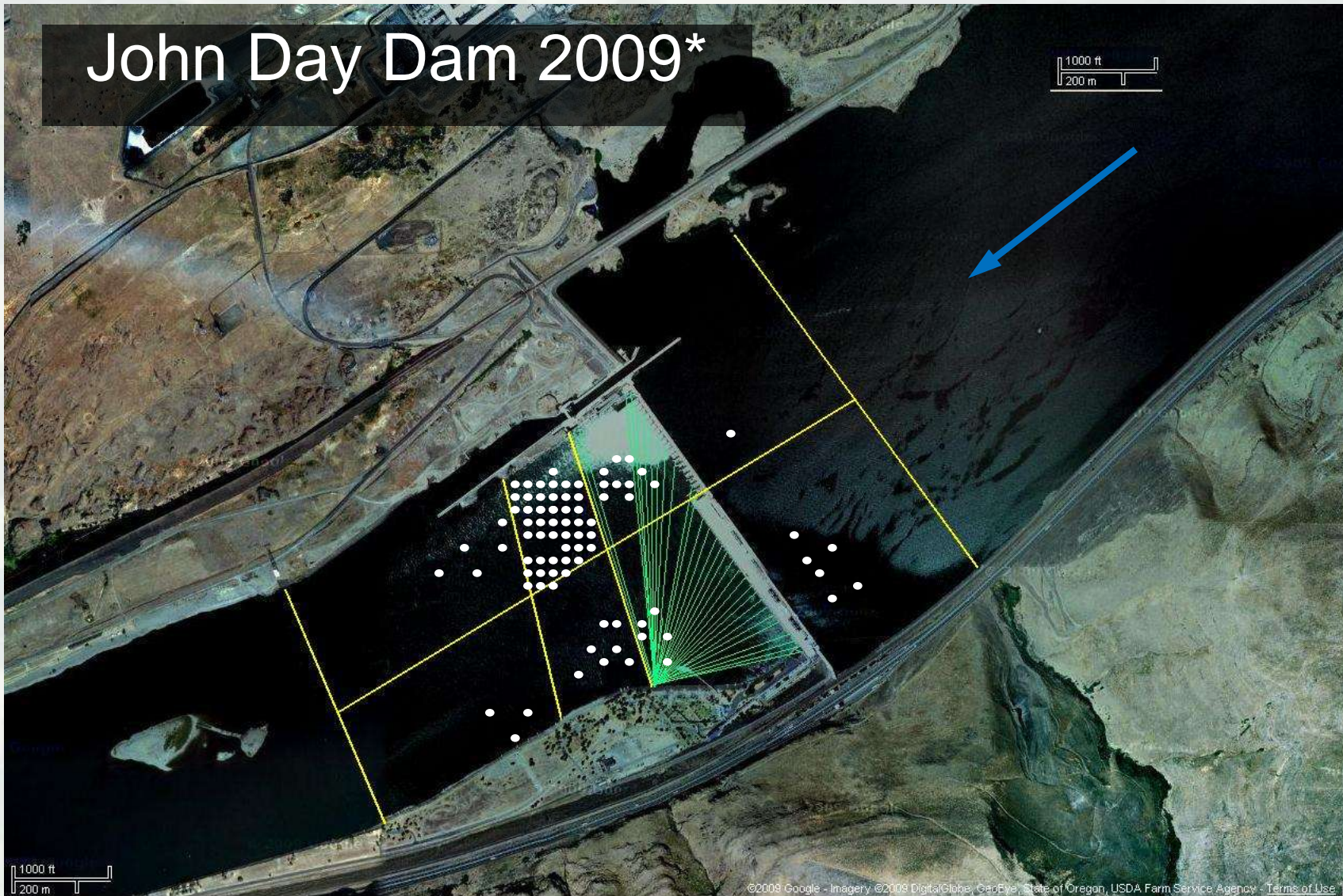
# Results: Raw Counts



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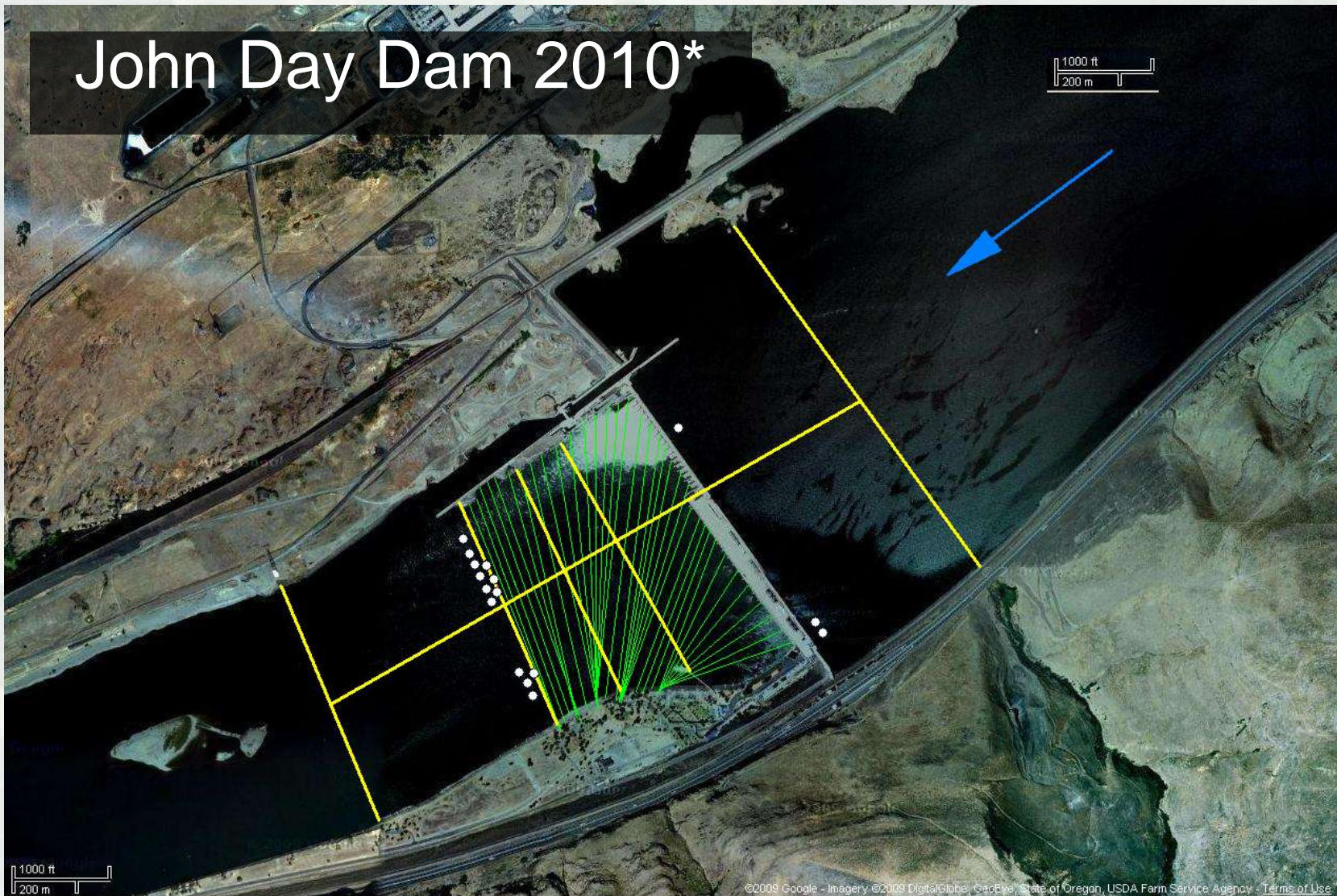
# John Day Dam 2009\*



\*Daily mean gull count  $n = 99$   
One dot = one gull



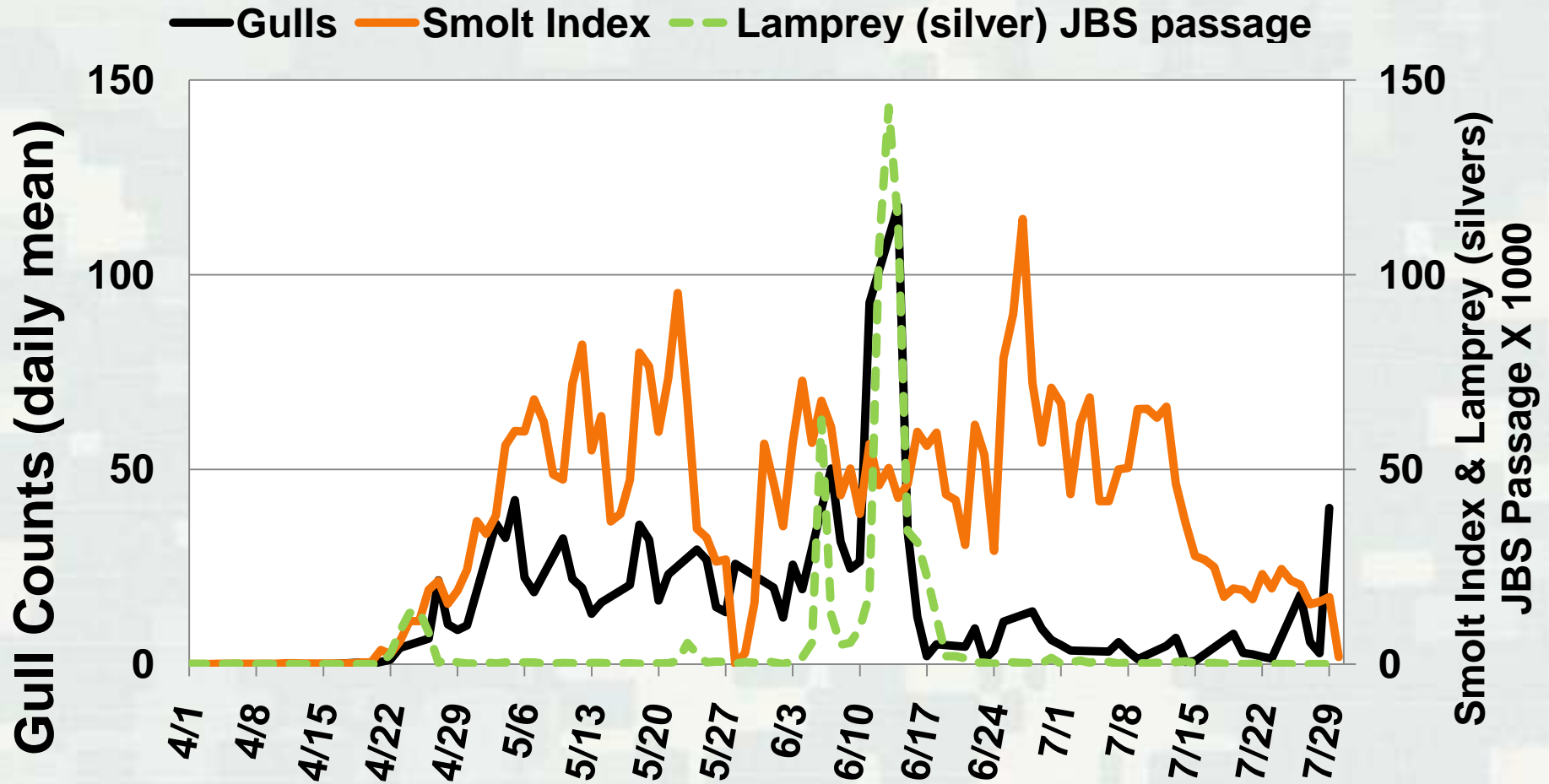
# John Day Dam 2010\*



\*Daily mean gull count  $n = 17$   
One dot = one gull



# Results: John Day Gulls and Fish Passage





# Results: Diet John Day

## 2009

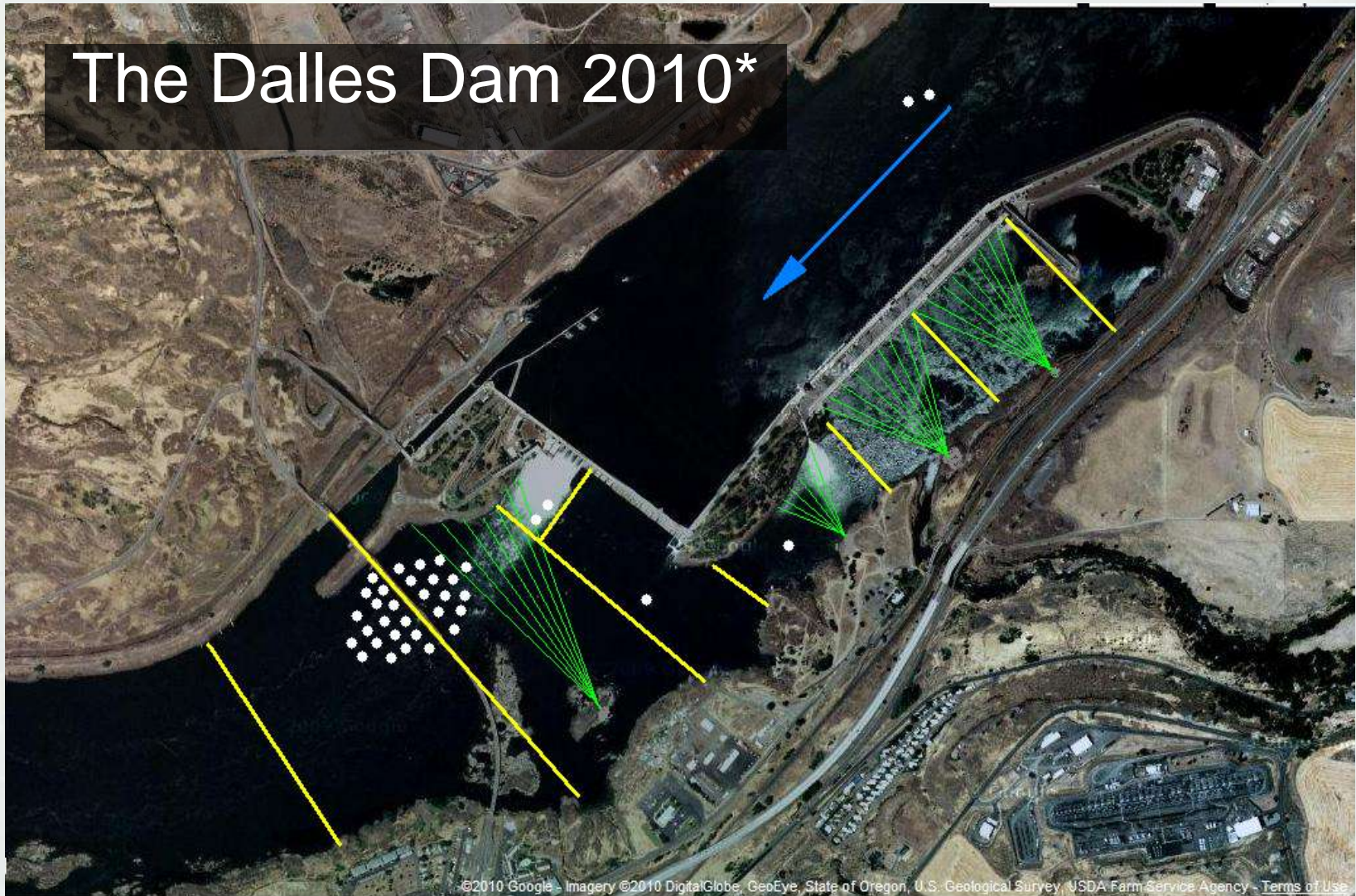
- 39% (49/127) of stomachs contained soft tissue fish
- 129 salmonids, 1 unidentified fish, and 4 lamprey.
- 5 readable PIT tags
- 9 un-readable PIT tags
- Other : insects, french fries, fruit seeds, vegetation, fish bones, and rock pebbles

## 2010

- 30% (58/194) of stomachs contained soft tissue fish
- 93 salmonids, 8 unidentified fish, 3 other, and 7 lamprey.
- 6 readable PIT tags
- 8 un-readable PIT tags
- Other: insects, starch, fruit seeds, vegetation, fish bones, and rock pebbles



# The Dalles Dam 2010\*

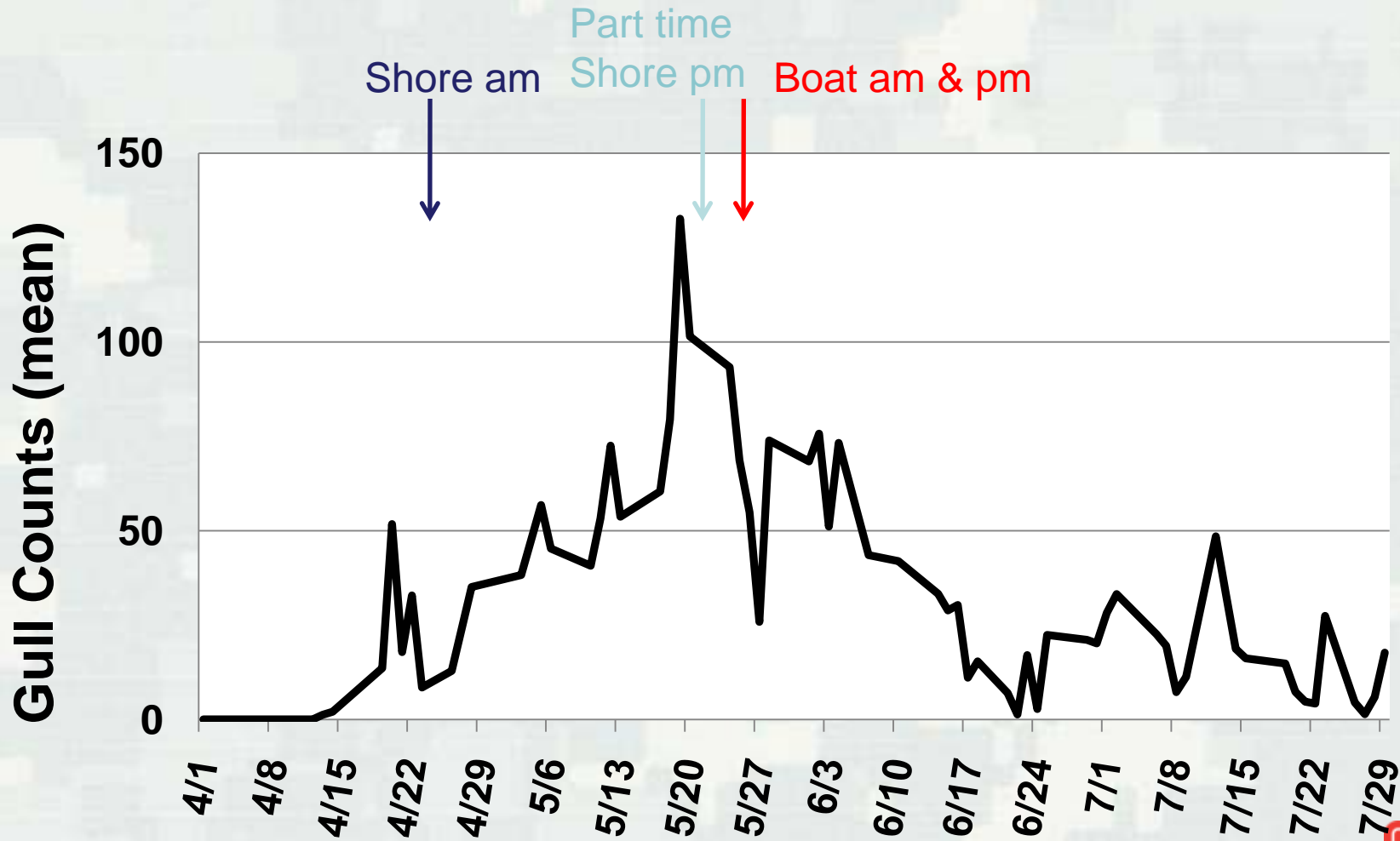


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\*Daily mean gull count  $n = 34$   
One dot = one gull



# Results: The Dalles Mean Gull Counts



# Results: Diet The Dalles

- 32% (51/155) of the stomachs contained soft fish parts.
- 72 salmonids, 95 lamprey, and 3 unidentifiable fish
- 5 readable PIT tags
- Other: landfill scraps, insects, fruit seeds, vegetation, fish bones, and gravel.



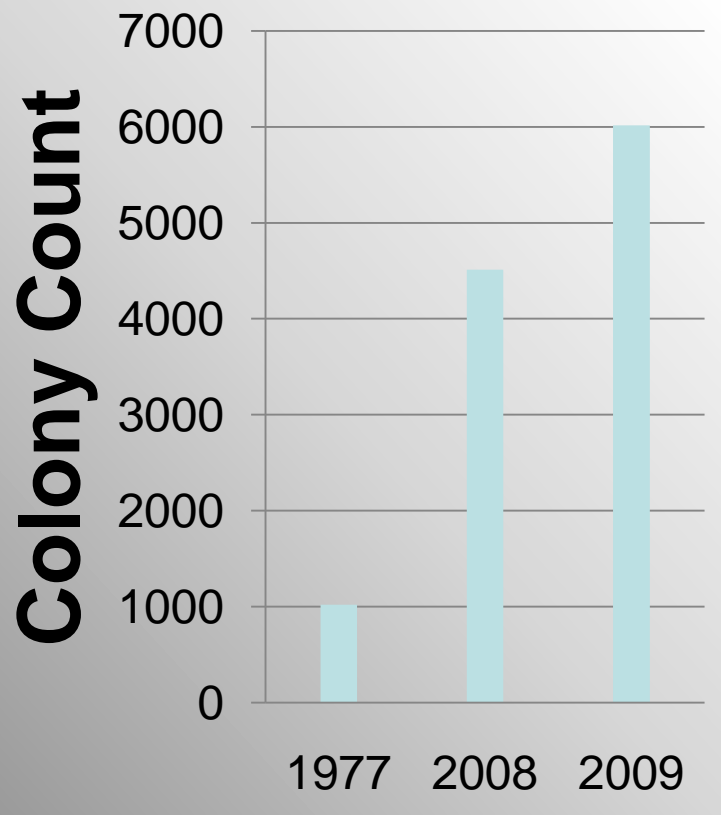
# History of bird predation

Consumption Estimate	Project	Year	Primary Predator	Author
11,000* – 26,000	John Day	2010	CAGU	Present Study
58,000- 145,000*	The Dalles	2010	CAGU	Present Study
50,000-110,000	John Day	2009	CAGU	Zorich et al. 2010
94,176	John Day	1998	CAGU	Jones et al. 1999
22,772	John Day	1997	CAGU	Jones et al. 1998

\*Preliminary estimates subject to change (95% CI's)



# Miller Island Rocks?



© 2000 Airphoto - Jim Wark



# Agriculture, landfills, dams



# Conclusions 2010

- Gull numbers were highly variable
- Consumption focused on spillway tailrace
  - ▶ JD's Temp Spillway Weir plume & north of TDA's Wall
  - ▶ 2010 avian lines worked well
    - Consumption reduced by 62,000 smolt
- Moved to PH side for peak lamprey passage
- Recommendations
  - ▶ More avian lines at The Dalles
  - ▶ Sustained hazing program
    - Boats & shore based
    - Mobile crews responding to bird movement
    - Apply a variety of tools & innovative methods
  - ▶ **Habitat modification at MIR to prevent nesting**





