

Using Border Collie Dogs for Nuisance Bird Control at USACE Projects and Facilities

Dena Dickerson

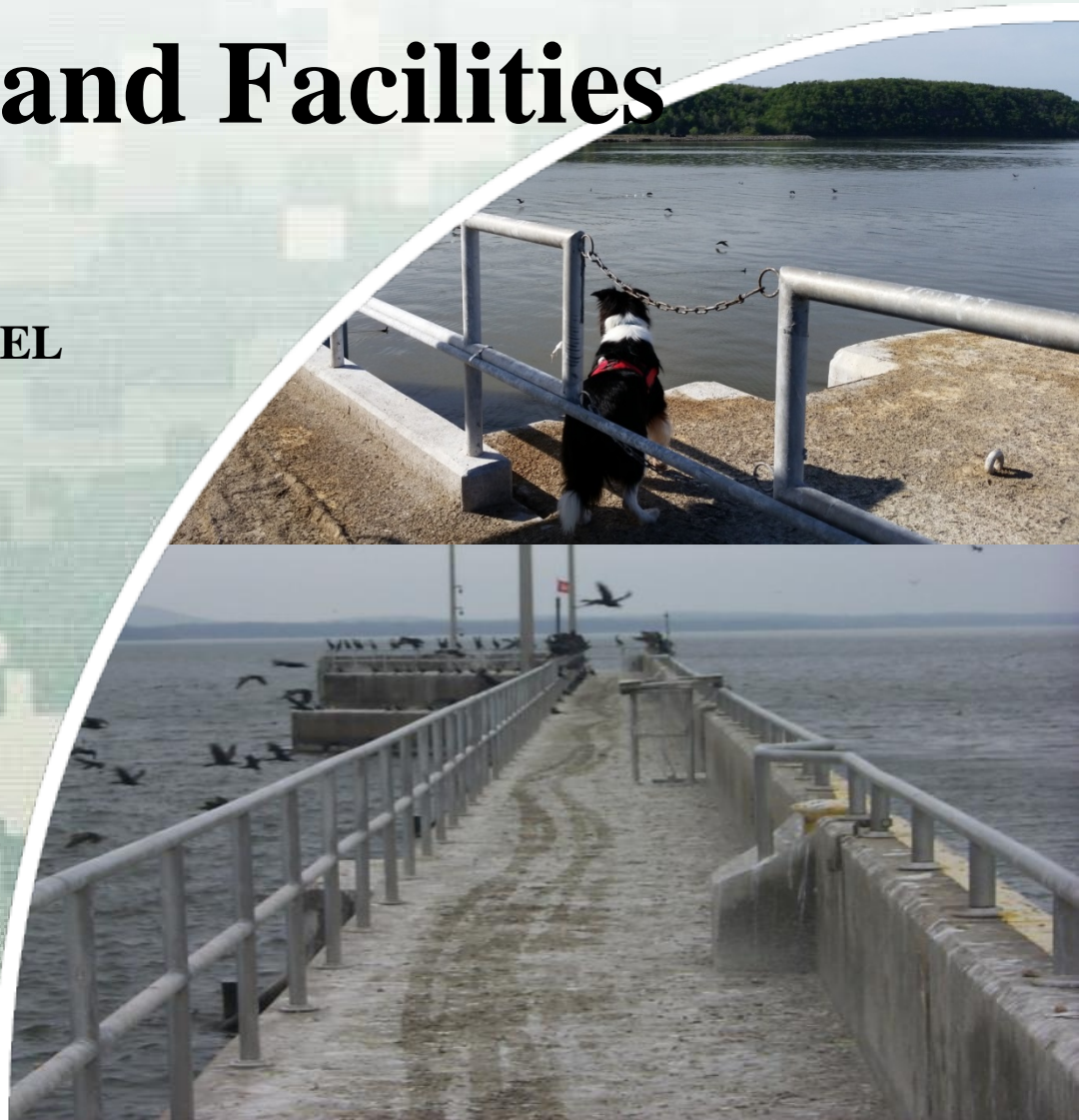
Research Biologist – ERDC EL

**Invasive Species Leadership Team
Webinar Series
18 July 2017**



®

**US Army Corps of Engineers
BUILDING STRONG®**



Team

- **Dredging Operations Technical Support Program**
 - ▶ Cynthia Banks and Burton Suedel (Program Managers)
- **Navigation Systems Program**
 - ▶ Eddie Wiggins (Program Manager)
- **Robert S. Kerr Lock & Dam**
 - ▶ Robert Steiner – Kerr Operations Manager
 - ▶ Jeremy Philpot – Ellie’s Manager
 - ▶ Kerr Lock Operators
- **Chicago Harbor Lock**
 - ▶ Bob Ojala – Lock Maintenance Engineer
 - ▶ Tyrone Valley – Lock Master
 - ▶ Chicago Lock Operators
- **Dena Dickerson – ERDC-EL**
- **Peggy Johnson – ERDC-EL, contractor**
- **Rebecca Moore – Flyaway Farms, NC**
- **Panda (Border Collie)**
- **Ellie (Border Collie)**



Border Collies

- Developed to herd sheep
- 18th & 19th Century (1894)
- Border counties of England and Scotland
- Suited for harsh climates and terrain
- Intelligent, learns quickly
- Works independent or in groups
- Quiet worker
- Herds without harming
- Few health problems
- Long-lived (average 12 yrs)



Dog Intelligence Ranking

- 1. **Border Collie**
- 2. Standard Poodle
- 3. German Shepherd
- 4. Golden Retriever
- 5. Doberman Pinscher
- 6. Shetland Sheepdog
- 7. Labrador Retriever
- 8. Papillon
- 9. Rottweiler
- 10. Australian Cattle Dog

Source: Stanley Coren. 2006. "The Intelligence of Dogs"





**Master
of
Agility**



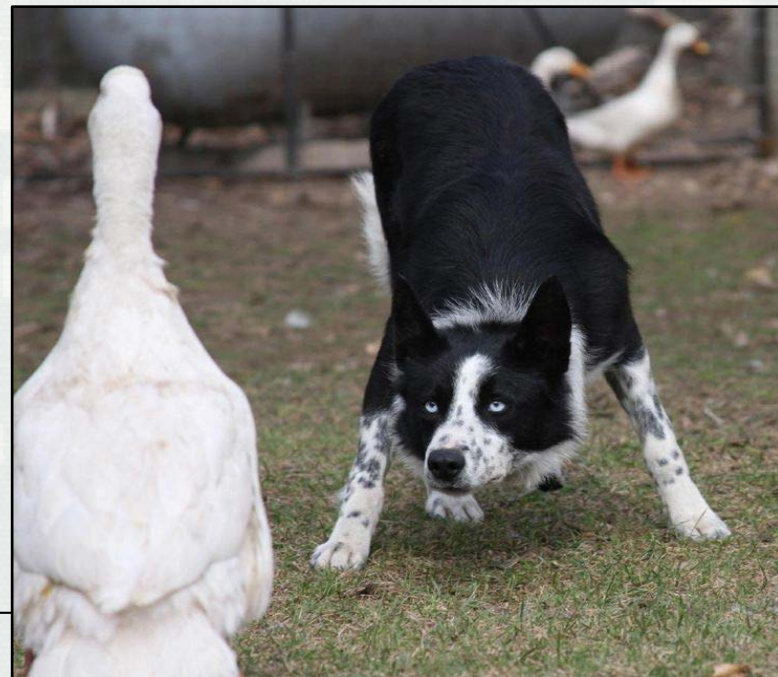
**Few Opportunities to
Herd in U.S.**

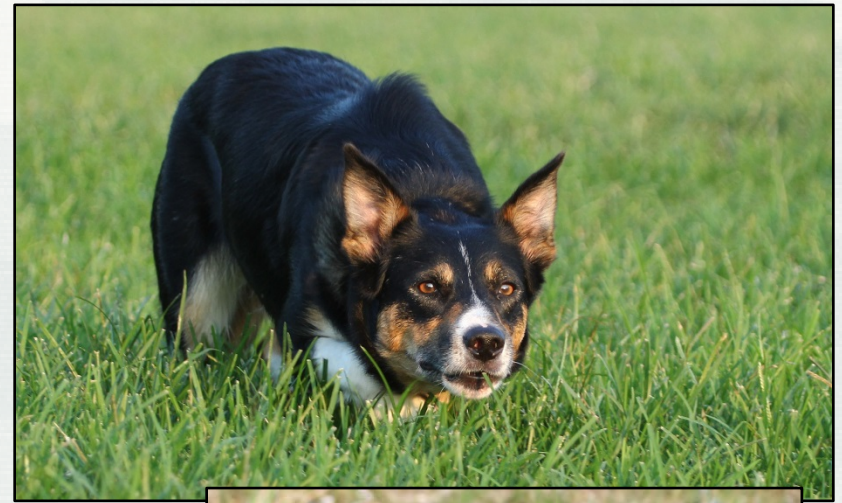


Herding is Genetic



They will Herd Anything





**Crouching
Predator with
“The Eye”**



**Civilized
Predator**

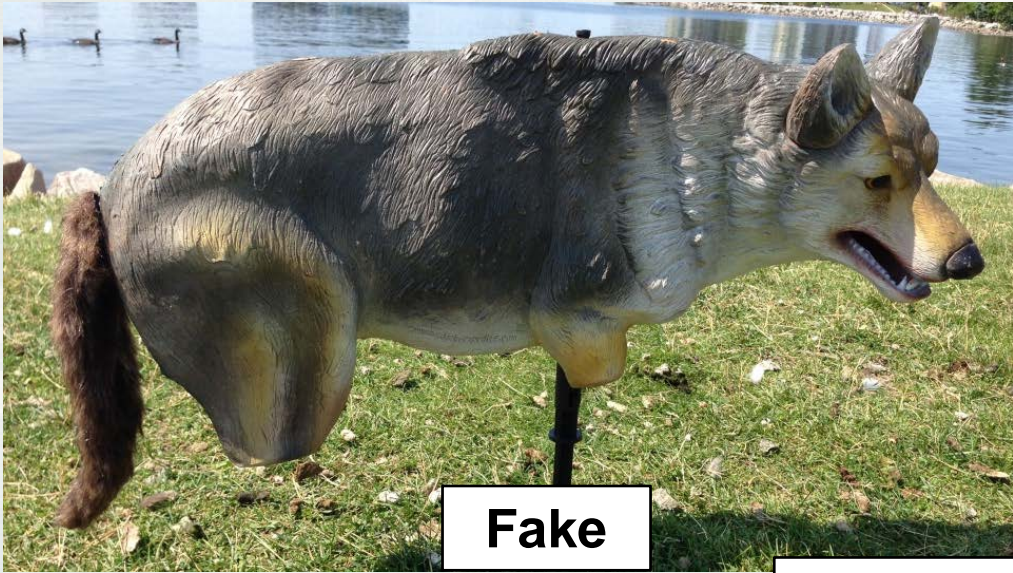




**Dog
Mimics
Wild
Predator**



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Fake



Real

Predators



Fake



Fake

Predator Decoy Useless



Nuisance Birds

Double Crested
Cormorant



Ring-Billed Gull



Canada
Goose



Nuisance Birds

- Annoying
- Aggressive
- Messy droppings
- Safety hazard
- Health hazard
- Costly cleanup
- Costly repairs





Jobs for Border Collies

Civil & Military Airfields



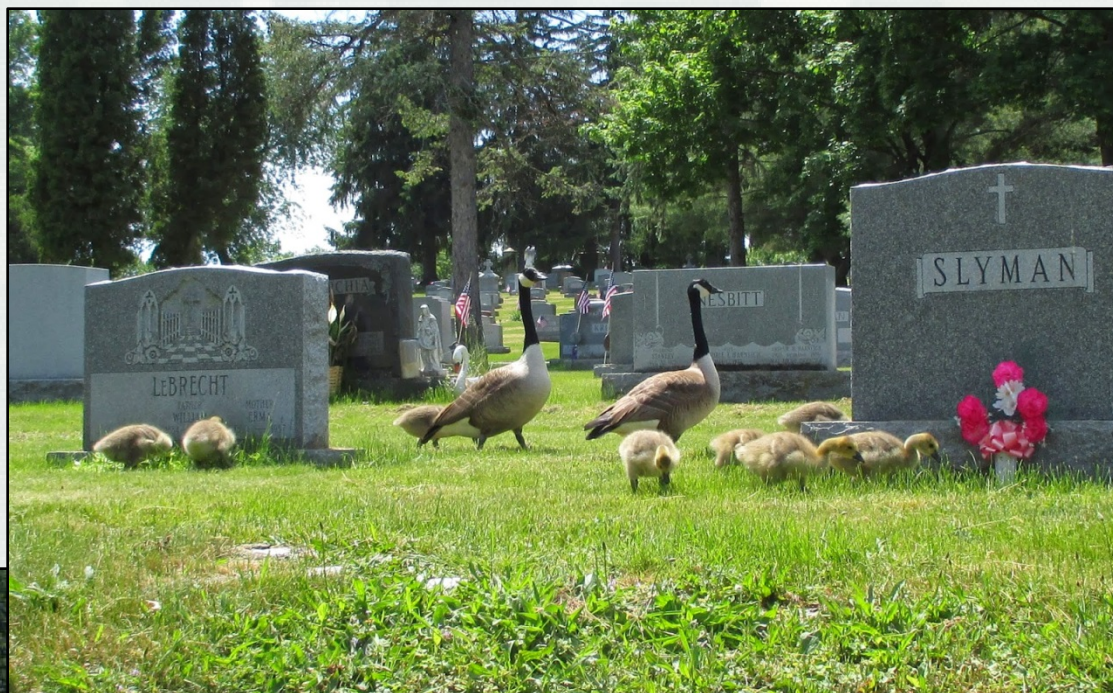
**Reduce
Bird Strikes
to Planes**



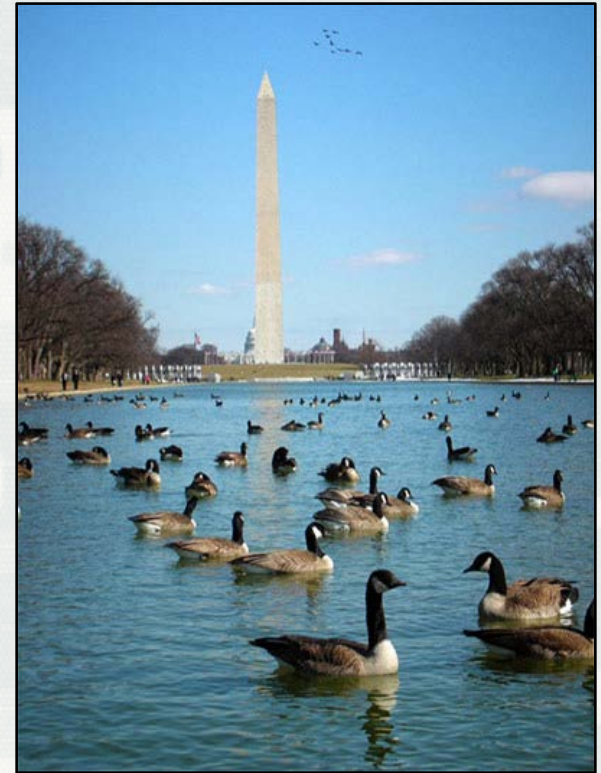
Golf Courses



Cemeteries



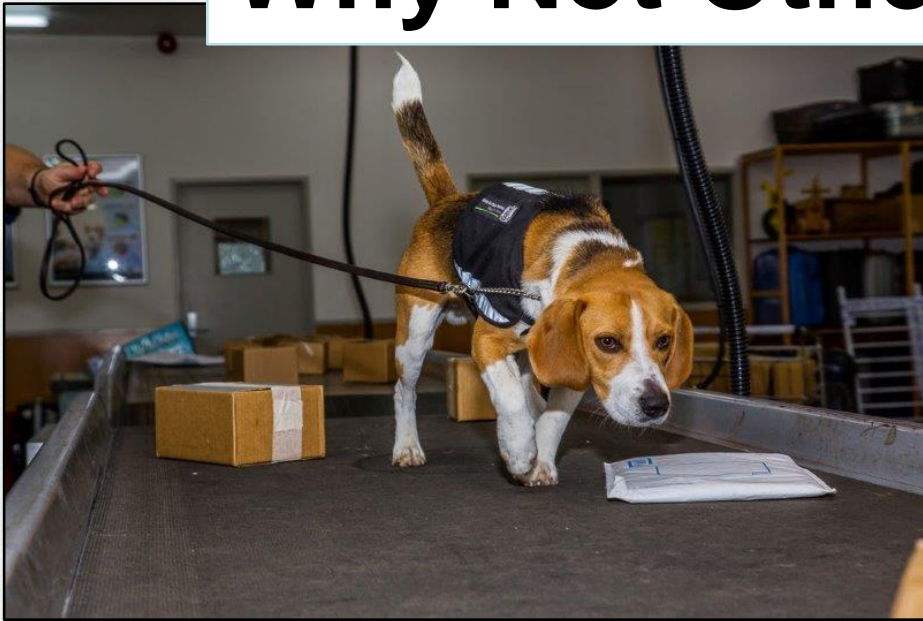
US National Mall National Parks Service



Beach Patrol *E.coli* Control



Why Not Other Dog Breeds?



Why Not Other Dog Breeds?



The USACE Problem

A Tail of Two Locks



Robert S. Kerr Lock and Dam
USACE Tulsa District
Sallisaw, Oklahoma
Arkansas River

Chicago Harbor Lock
USACE Chicago District
Chicago, Illinois
Chicago River/Lake Michigan



Robert S. Kerr Lock and Dam

Mile 336.2 on Arkansas River

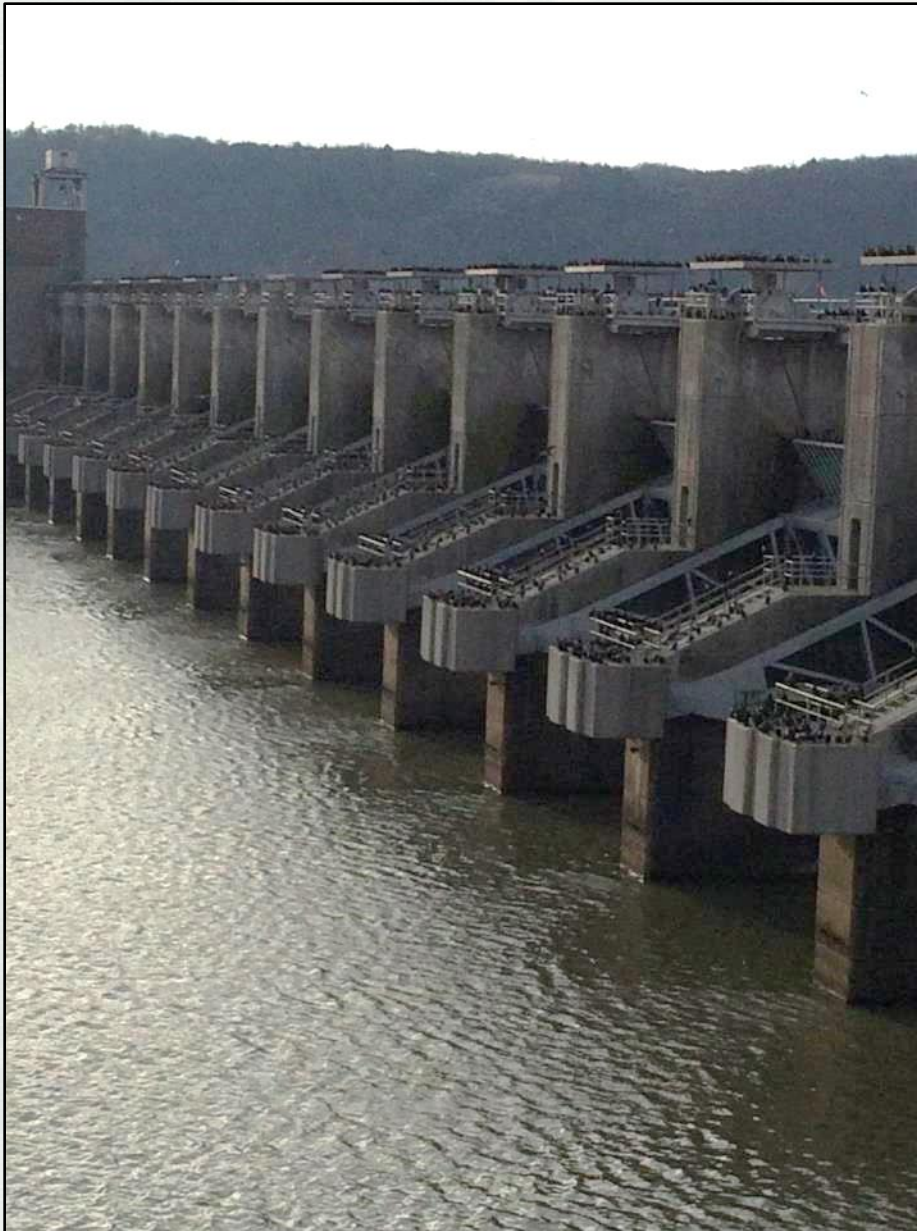




Chicago Harbor Lock

Chicago River
and
Lake Michigan





Robert S. Kerr Lock and Dam

Winter Roost 2015

(Oct – Apr)

Birds of a Feather Flock Together!!!

- 5,000-6,000 Cormorants
- 3,000-4,000 Seagulls
- Populations increasing



Why do they like Kerr Lock?

- **Mild winter weather**
- **Available food**
 - ▶ **43,796 acres of water**
 - ▶ **Protection of Lock**
 - ▶ **18 spillway gates**
 - ▶ **Power plant**
- **Ample roosting area – entire structure**
- **Protection from predators**



The Feeding Grounds



Roosting Sites



Trunnion Blocks



Light Fixtures



Lock Guide Walls



Increasing Problem Annually

5000 – 6000 Cormorants

+

3000 – 4000 Gulls

+

Large amount of fish consumed daily

= 5 to 10 tons of bird droppings



Over 2 inches cover the facility!



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Negative effects of roosting:

- **Health hazards to operators and maintenance personnel**
- **Corrosion from acids**
 - ▶ **Structural damage**
 - ▶ **Equipment damage**
- **Annual costs \$\$\$\$**
 - ▶ **Clean up**
 - ▶ **Damage repairs**



Health hazards

- **Histoplasmosis fungal spores – inhaled as dust off bird feces**
- **Ammonia fumes when droppings are wet**
- **Safety Hazard**
 - ▶ **Slipping danger when wet**
 - ▶ **Unusable hand rails**
- **Carried to undesired areas on boots & tools**



Structural damages



Equipment damage



Annual Costs \$\$\$\$

- **Clean up**
 - ▶ Over 250 man hours
 - ▶ \$ 20K labor/equipment
 - ▶ Labor intensive
- **Damage repairs**
 - ▶ Over \$13K labor/equipment



Bird Deterrents Tried

NOT EFFECTIVE & COST PROHIBITIVE

- Propane canons
- Electronic sounding devices
- Predator decoys
- Hotwired handrails
- Spikes and Spiders
- Netting
- Shooting



Bird Deterrents



Spikes



Hotwire Handrail



Netting



Spiders



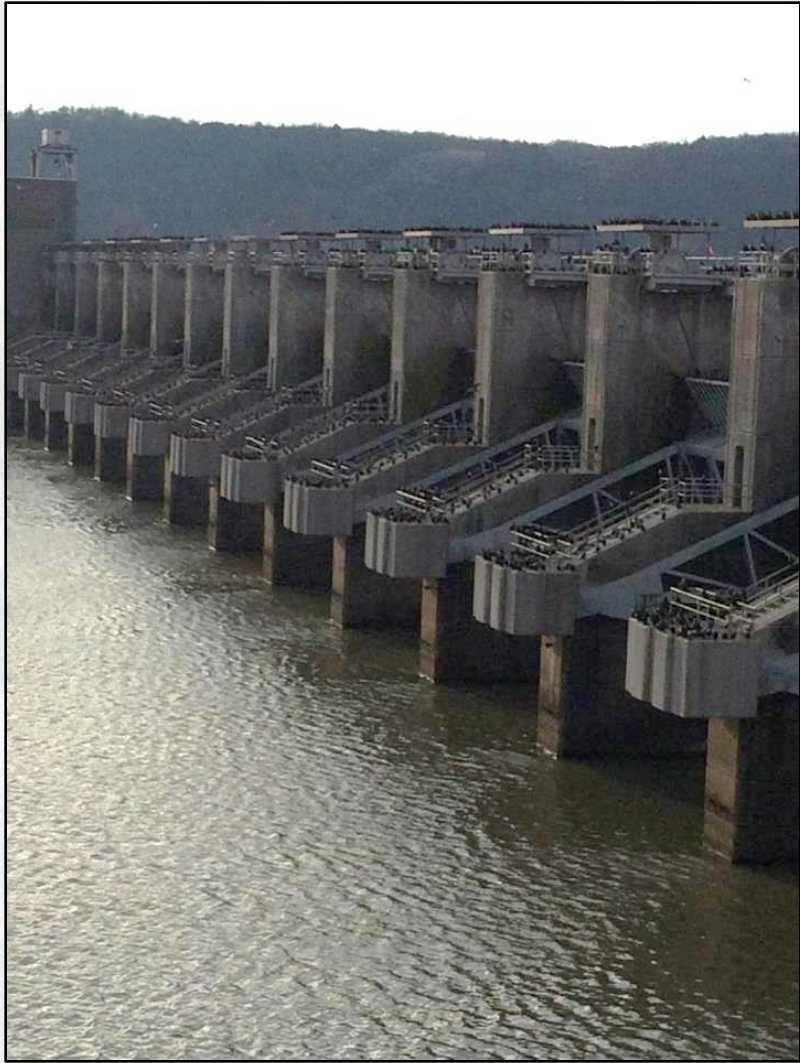
Wires and Coils

Bird Deterrent Costs



- **\$6,000 - 1 spillway gate (done)**
 - ▶ **\$2,500 materials**
 - ▶ **\$3,500 labor 5 people**
- **\$108,000 - 18 spillway gates**
 - ▶ **Cost prohibitive**
- **Partially effective for equipment**
- **Ineffective for walkway**





- **Bird populations growing.**
- **Problem likely to worsen without effective deterrent**



Dog Patrol

Initial Test – 10 April 2015



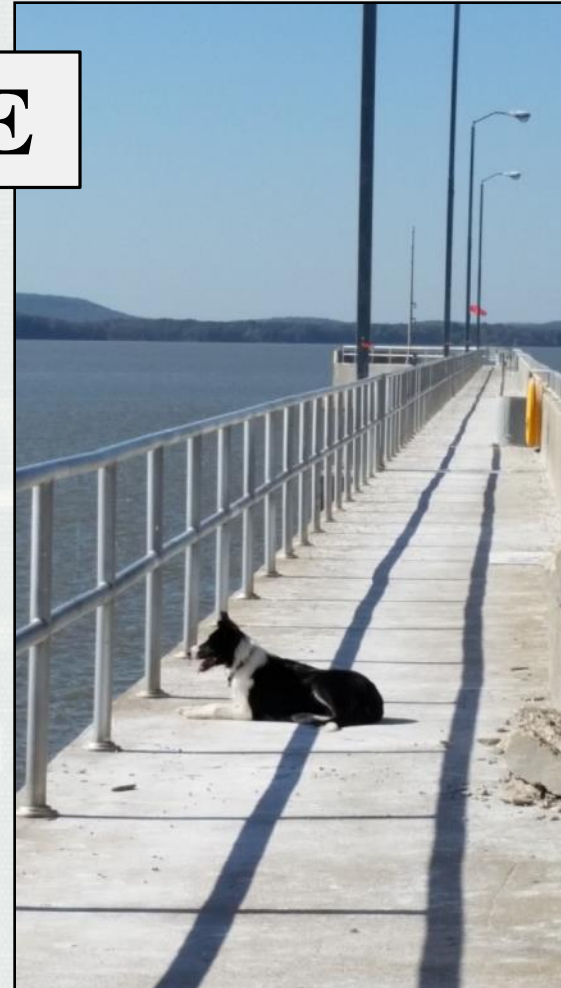
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Dog Patrol Implemented

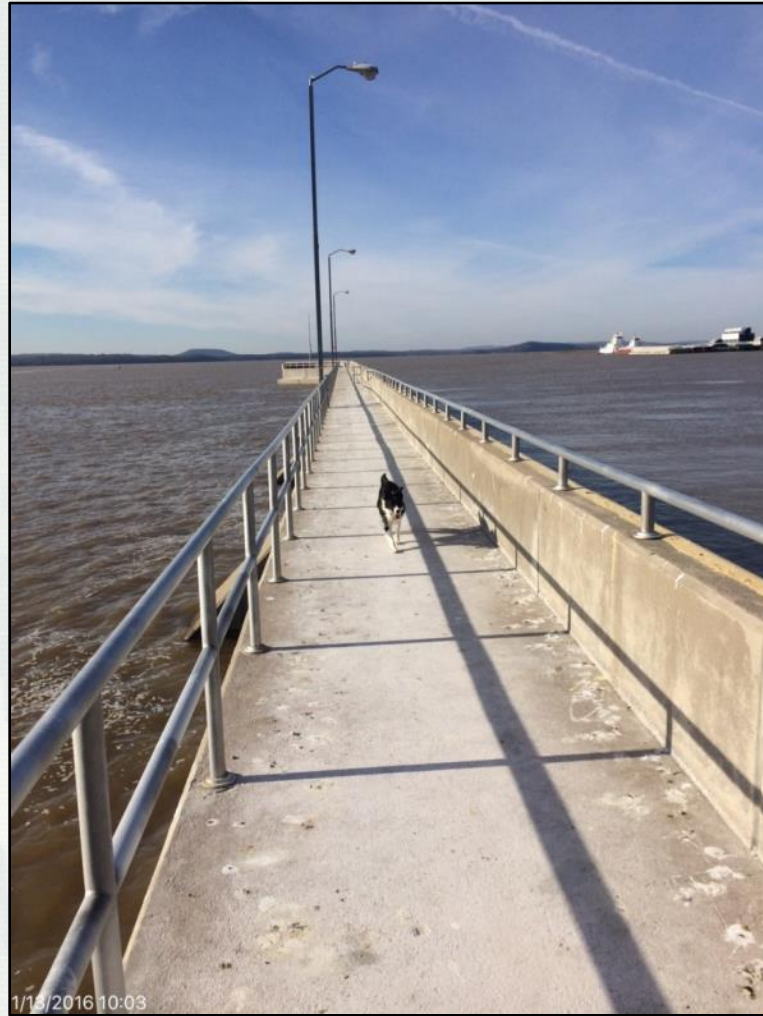
19 Oct 2015



ELLIE



Birds Hazed During Day



Spillway Results

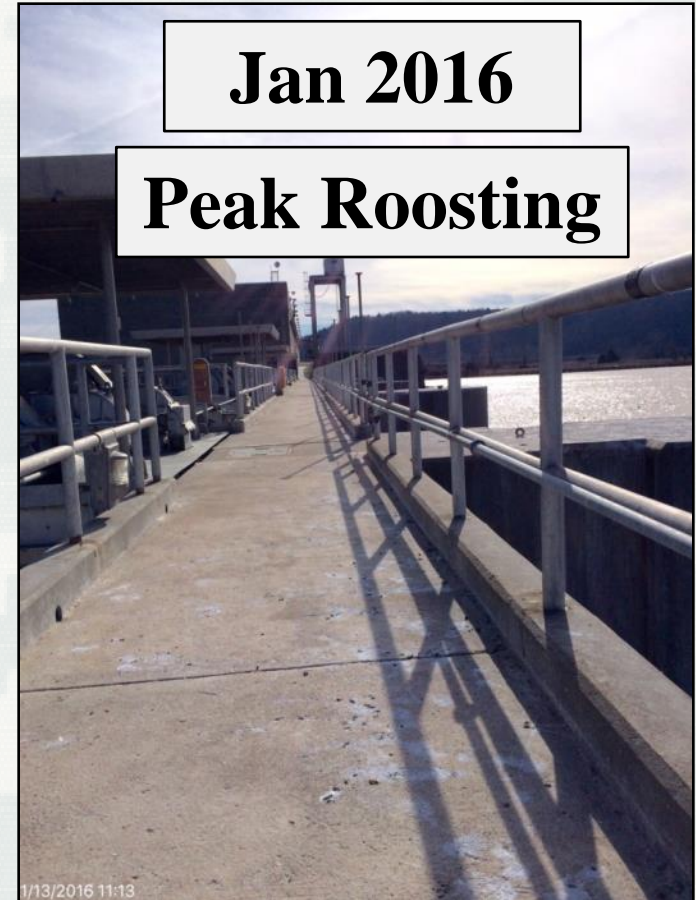
Apr 2015

End of Roosting



Jan 2016

Peak Roosting



Upper Guide Wall Results

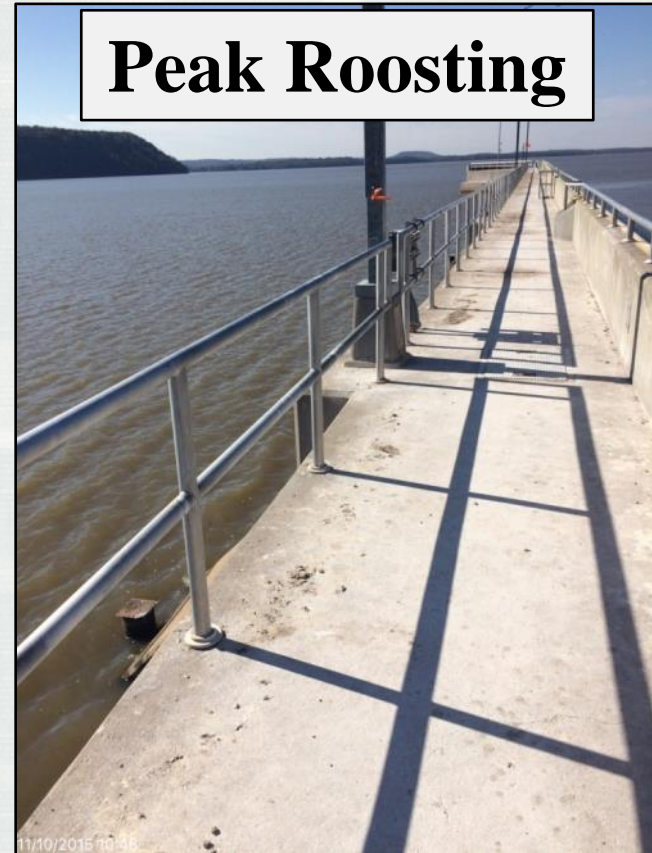
Apr 2015

End of Roosting



Jan 2016

Peak Roosting



Lock Wall Results

Jan 2016

Peak Roosting



Pillar Results

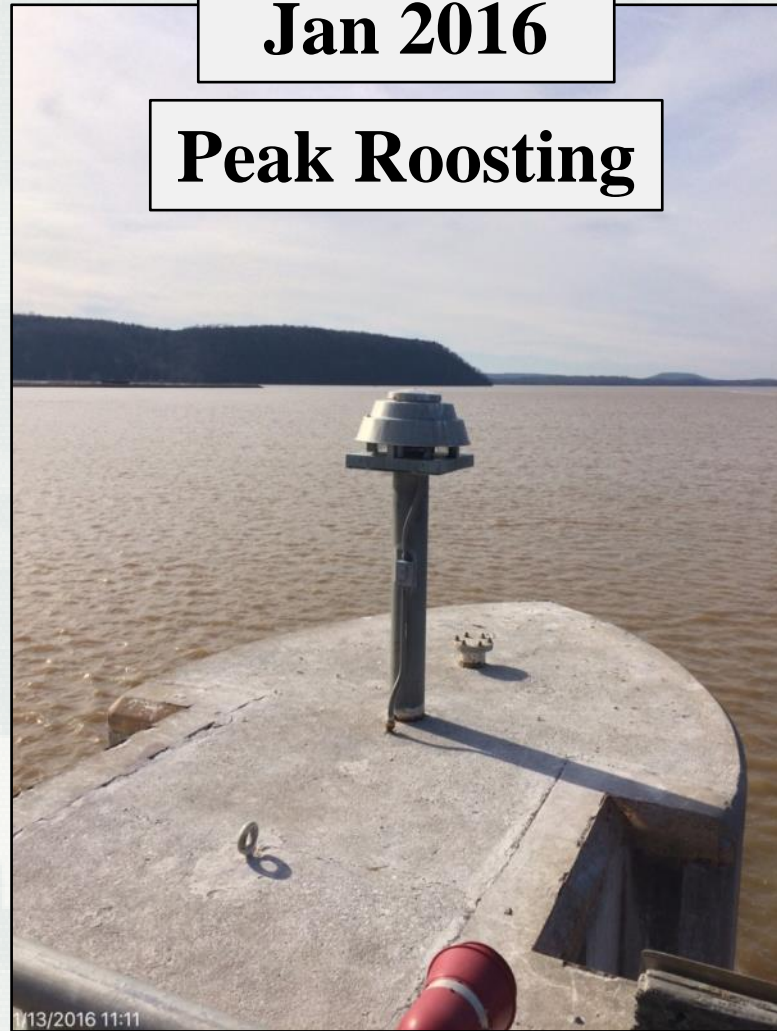
Oct 2015

Ellie Starts



Jan 2016

Peak Roosting

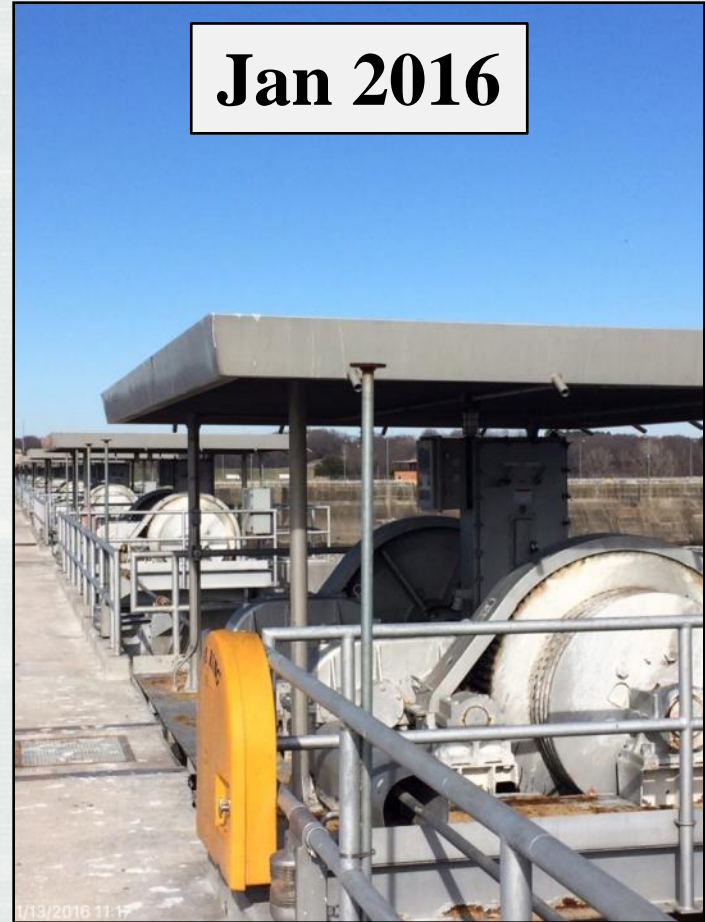


Equipment Damage Results

Apr 2015



Jan 2016



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Birds Displaced from Structure

BEFORE DOG



AFTER DOG





Chicago Harbor Lock

Chicago River
and
Lake Michigan



© 2010 by Tiger Simonsen

Ring Billed Gulls & Canada Geese

Nesting Mar-Aug

Highly Aggressive

2,000 - 4,000 Seagulls

10 - 50 Geese

Population increasing



Before Dog Arrived



Ellie Arrived

(22 May 2017)



10 Days After Ellie Arrived



Low Cost, Win-Win Solution



- Improved health environment
- Increased human safety
- Reduce equipment/structure damage
- Substantial cost savings
- Dog has paid for herself (\$4,500)!
 - ▶ Dog rental \$1,500
 - ▶ Dog purchase \$2,000
 - ▶ Annual maintenance/care \$1000
- Dog can be shared with other facilities in off season
- Increased employee morale



Other Uses for Dog Patrols in the USACE

- **Goose control at recreation facilities**
- **Prevent bird nesting during beach nourishment projects**



Teamwork Finds a Solution



Questions? Other ideas?

