Gulls at Great Lakes Beaches

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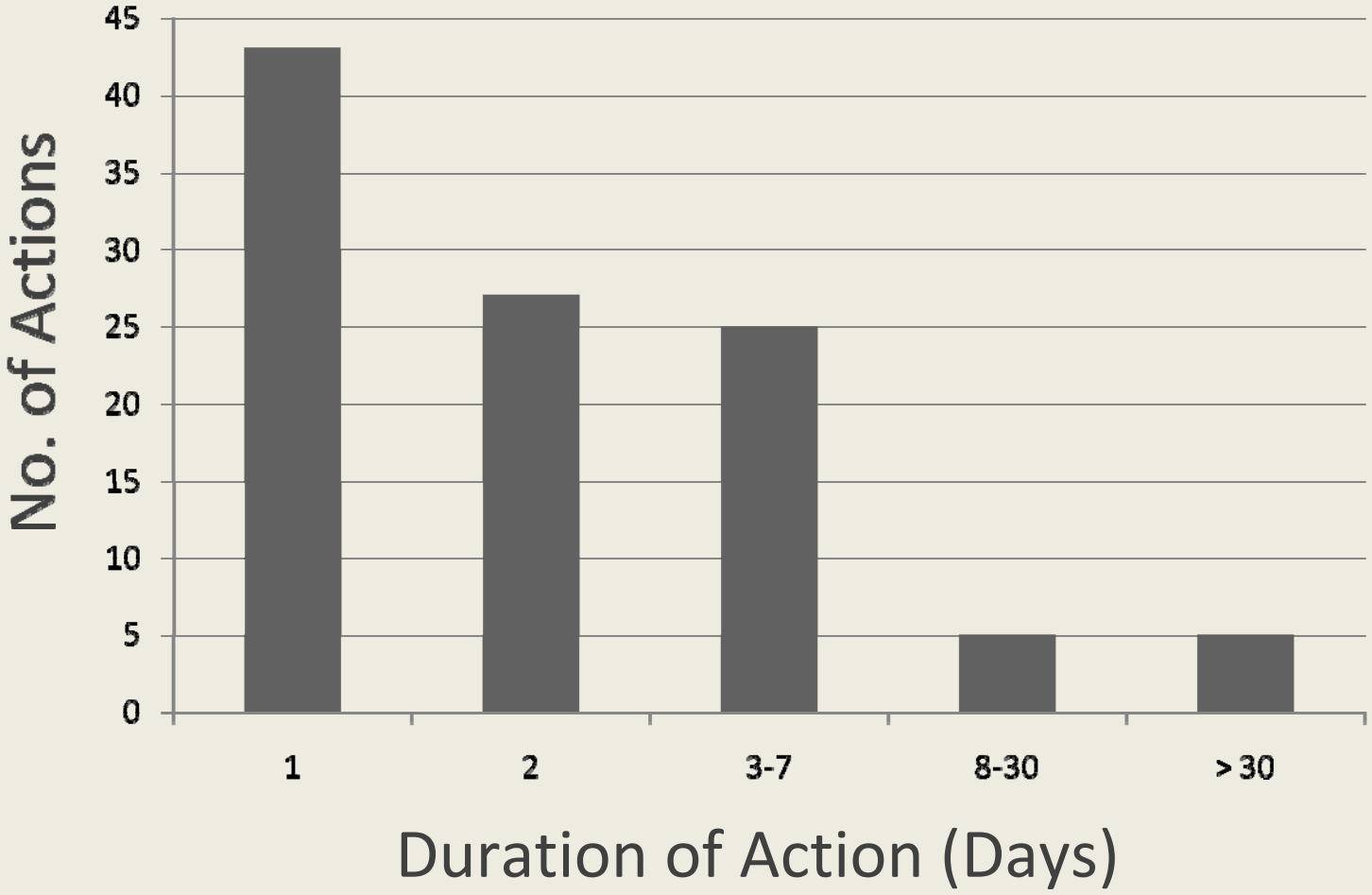
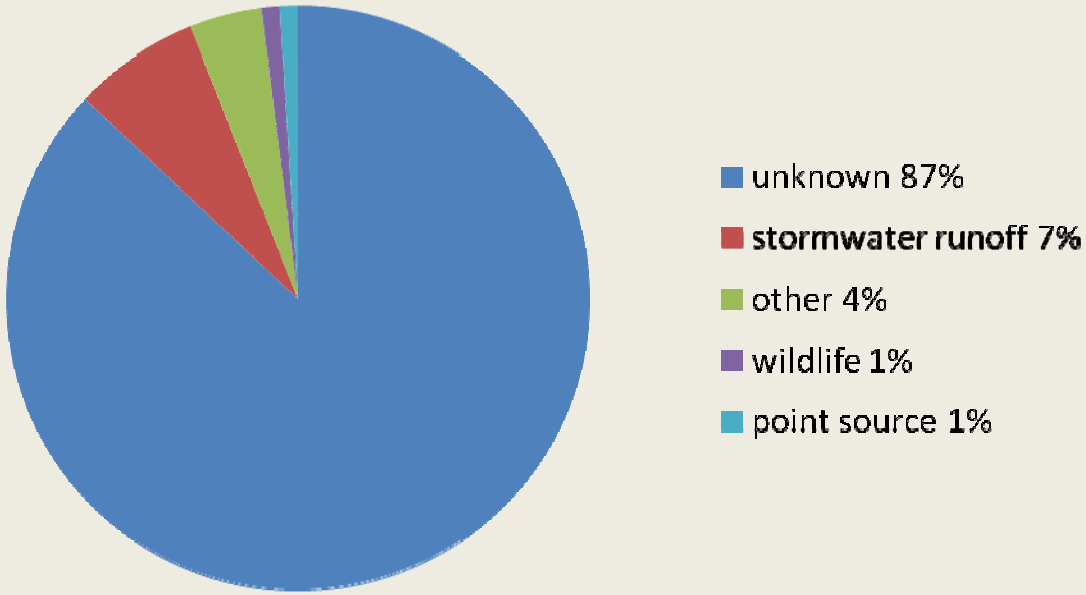
Michigan Beach Advisories 2010



EPA's Beach Report 2010 Swimming Season

Non-point sources

- Point source – identifiable, contained, discrete
- Non-point source - diffuse in nature



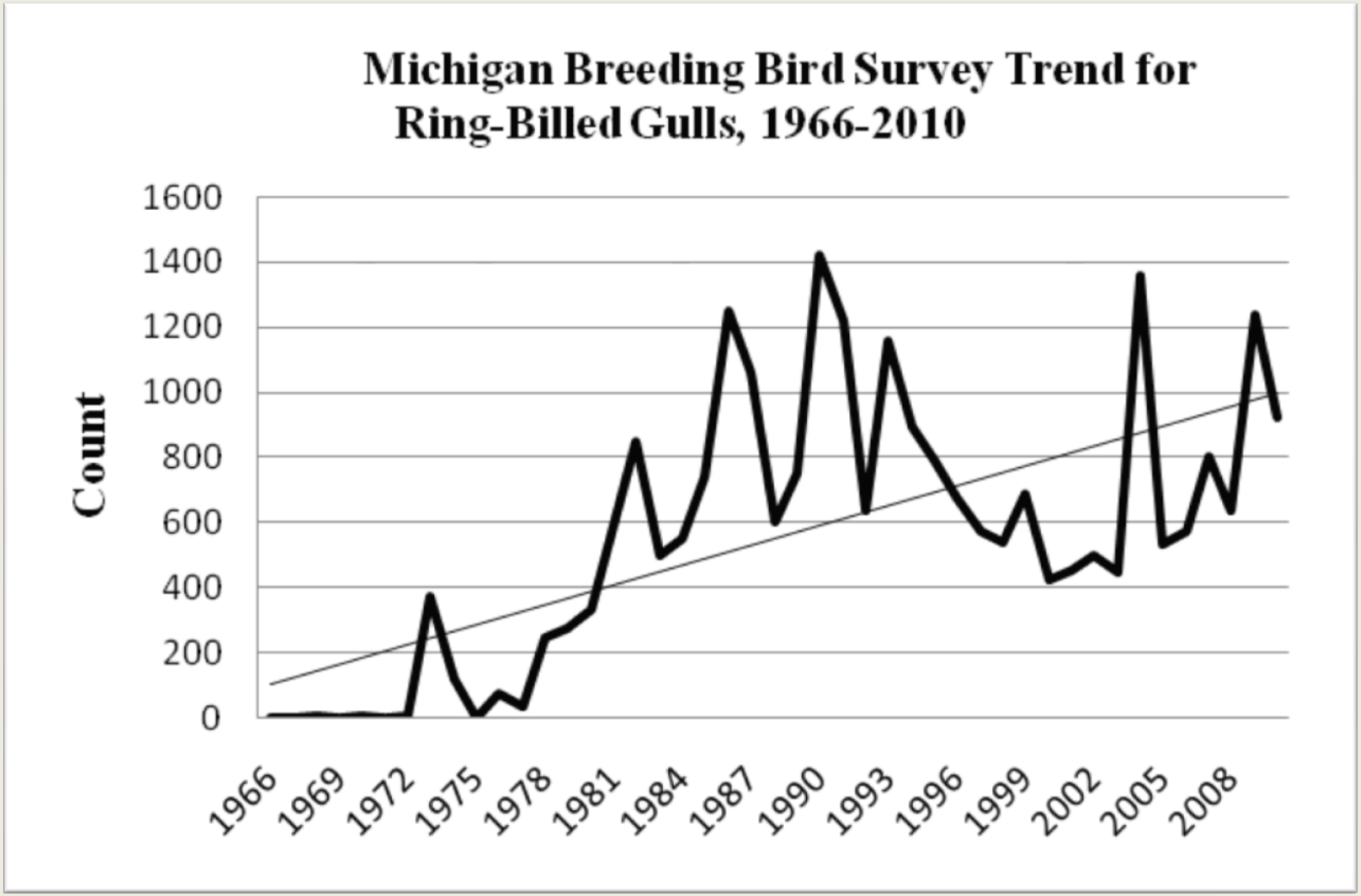
NRDC Testing the Waters 2011

Numbers of gulls at beaches have increased

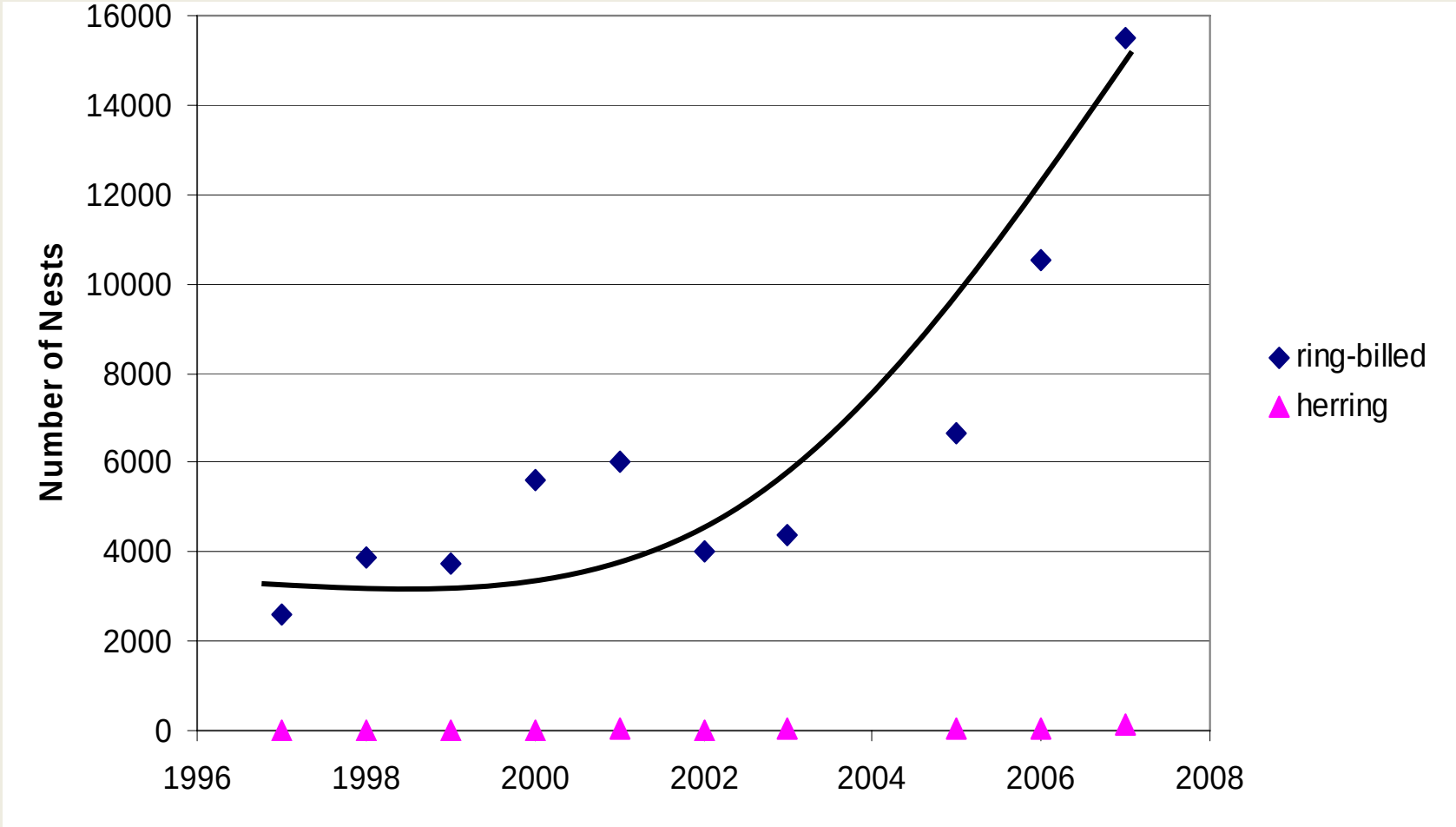
Great Lake Gulls

Ring-billed Gull

Herring Gull


Michigan Breeding Bird Survey Trend for Ring-Billed Gulls, 1966-2010
Count
1600
1400
1200
1000
800
600
400
200
0
1966
1969
1972
1975
1978
1981
1984
1987
1990
1993
1996
1999
2002
2005
2008

Nests at the Muskegon Wastewater Management System (Muskegon Co.)



Impact of gulls on beach quality

Gull feces contain microbes

Microbial burden

- One gull dropping weighs 0.48 grams
  - *E. coli* range from < 1.0×10^5 – 10^9 per g
  - Enterococci range from 10^4 – 10^8 per g

Potential Pathogens

- *Salmonella*
- *Campylobacter*
- *Listeria monocytogenes*
- *Yersinia*
- *Cryptosporidium*
- *Giardia*
- Avian influenza

Gull-derived microbes in water

Beach sand can harbor bacteria

- Re-suspended into water
- Direct ingestion of sand

Gull Deterrents

- Population management
  - Shooting
  - Damaging nests/eggs/oiling
  - Poisoning
- Habitat management
  - Eliminating fresh water
  - Eliminating food
  - Grid wires
- Harassment
  - Distress calls
  - Pyrotechnics/ cannons

MIGRATORY BIRD TREATY ACT
16 U.S.C. §§ 703-712, July 3, 1918, as amended 1936, 1960, 1968, 1969, 1974, 1978, 1986 and 1989.

Gull Deterrents

- Harassment
  - Dogs

City of Racine, WI

10 day treatment with border collies

	Before dogs	With dogs	After dogs
Gull numbers	997.1	10.4	543.3
E. coli	49.1	6.5	47.7

Numbers are averages of counts/ samples 1x per day for 10 days

Julie Kinzelman, Health Department Laboratory, City of Racine, presentation to GLBA 2011

Goals and Objectives

- Implement an effective gull management tool
  - Further evaluate border collies as a gull deterrent

Study Design – Year 1

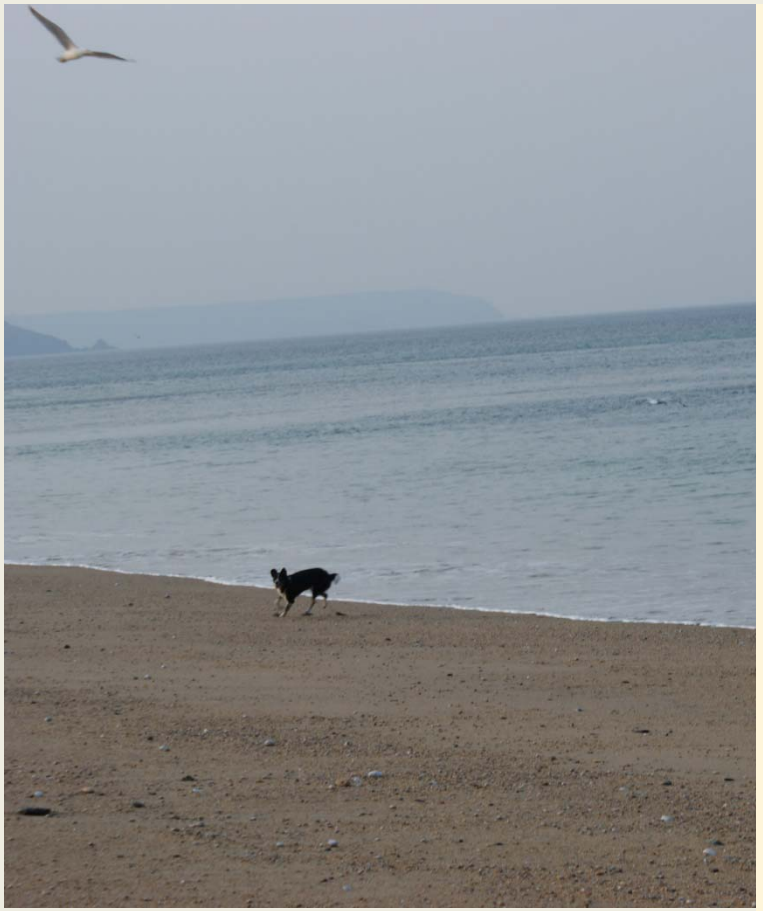
Design – Before/After Treatment

- •Gull counts
- •*E. coli* counts in water and sand
- •Potential pathogens

Treatment with dogs vs Control without dogs

- •Continuous use of dogs (June-August)

Determine effectiveness of dog treatment at reducing numbers of gulls and *E. coli.*



Study Design – Year 2

Design – Before/After Treatment

- •Gull counts
- •*E. coli* counts in water and sand
- •Potential pathogens

Treatment with dogs vs Control without dogs

- •Alternating use of dogs (June-August)

Determine frequency of use of dog treatment