Environmental Canine Services:
Scent tracking projects overview

Ottawa County 6th Annual Water Quality Forum
2011
Can We Use a Canine?
Born to Sniff

- **75% Nature, 25% Nurture**
- **Scent Receptor Area**
  - Human 1 sq inch (size of a postage stamp)
  - Dog 60 sq inch (size of a Kleenex)
- **Chemical Signals**
  - Create odor image
  - More detailed than a photograph for people
- **Scent discrimination**
There Are A Few Exceptions . . .
The Nose Knows!

- **Narcotics**
- **Evidence** (guns, knives, money, etc.)
- **Live human search** (airscent and tracking)
- **Human remains search**
- **Drowning victims search**
- Explosives
- Arson
- Avalanche
- Toxic Molds
- DVDs
- Mercury- 1mg
- Fruits, vegetables, meats
- Fox scat
- Grizzly Bear scat
- Whale feces
- Bedbugs and termites
- Gas leaks
- Water leaks
- Abalone
- Truffles
- VOC’s
- Cancer
- Diabetic alert
- Cooling fluid for underground power lines
IDDE – Scott & Sable
Environmental Canine Services LLC
2009
Canine Training

- Septage from residential, sewage from WWTP
- Imprinting
- The alert (chaining)
- Proofing
Scott, Sable, & Jack
Karen, Logan, & Bella
Dan & Sky
ECS Projects/Success!

- Santa Barbara, CA
- Traverse City, MI
- Chippewa County, MI
- Ottawa Co, MI
Santa Barbara, CA 2010

WERF Funded Research Study
-UCSB and City of SB Creeks Div

- Blind study-ECS
- Microbial Source Tracking vs. Canine Scent Detection
Checking RVs for blackwater discharges
La Cumbre Shopping Plaza - Hope Drain Diversion to WWTP
Robotic Camera verifies discharge to storm drain
The Fix
Canine responses were significantly associated with human specific waste markers

ZERO false negatives

When at least 1 human marker was present Logan = 100%

The dogs may respond to lower concentrations than detection limits of the human-specific markers

Canine instant results, lab results 5 months
Outstanding Stormwater Research Project 2011
California Stormwater Quality Association
Traverse City, MI 2010 & 2011

2010
- City
- County
- Non Profit
MMC 23
CB at detention inlet to storm drains to 079003

2011

Outfall 93
Results – 2010 & 2011

- Up to 50 structures
  - ~6 hours
- Reduced sampling
  - $6,000 saved
- Immediate feed back
- Reduced environmental impact
- Commercial carwash discharge found
- Hospital discharge found

Chris & Dave – Our Heros!
Chippewa County, MI 2011
Findings

- Brimley State Park aging infrastructure
  - Sanitary stations
  - Vault toilets
  - Sewage ponds
- Wind conditions
  - North wind – beach closed
  - South wind – beach open
- Canine confirmed
Ottawa County, MI
The Doggie Bag

- Rapid results = in the field decision making
- In the field decisions = reduced sampling
- Reduced sampling = less costs
- Furry dogs = Positive Press
Questions?

Is that mine?