

Detection of Feral Hog Impacts on Water Quality



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Negatively impact native wildlife

- Wood and Barrett 1979; Singer et al. 1984; Elsey et al. 2012

Reservoirs for disease

- Wood et al. 1992; Mason and Fleming 1999

Harmful to native vegetation

- Bratton 1975; Mitchell and Mayer 1997

Complex legal status

Popular with some hunters

- Wood and Barrett 1979



Water Quality



**Mallin et al. 1997;
Stone et al. 1998**



**Belden and Pelton 1975, 1976
Kaller and Kelso 2003
Kaller et al. 2007**

West Bay and Ft. Polk WMAs

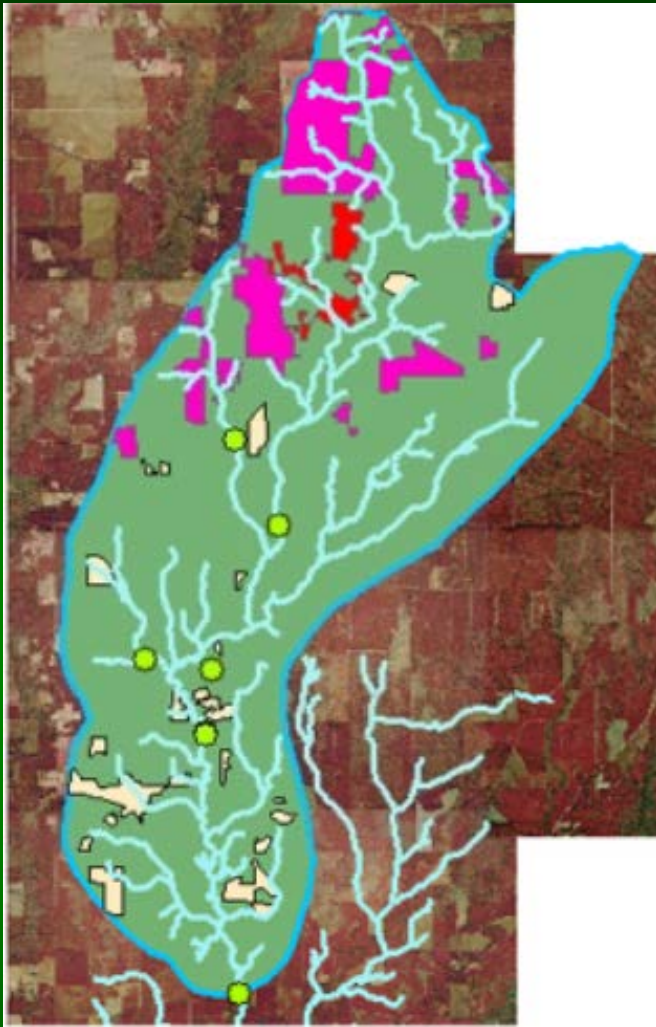
2002-2005

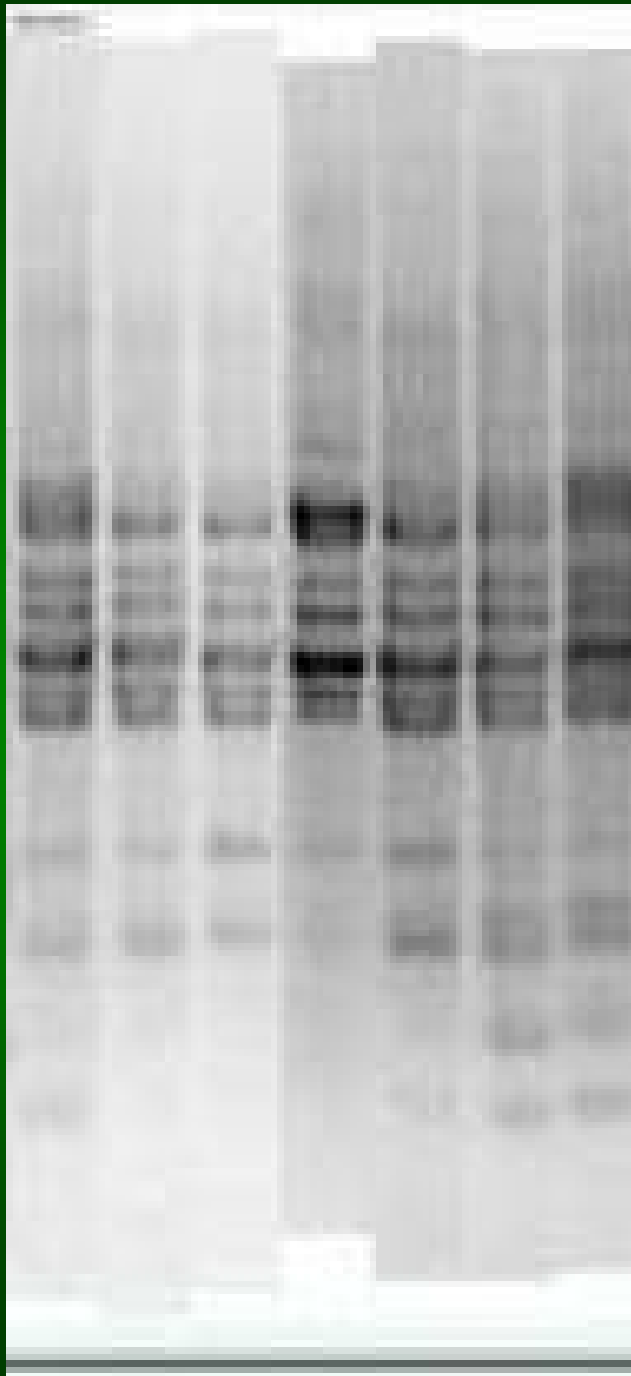
Excessive Fecal Coliforms (*E. coli*)
- 8 of 20 samples

Identified pathogens: *Aeromonas*,
Enterococcus, *Staphylococcus aureus*,
and *Shigella*.

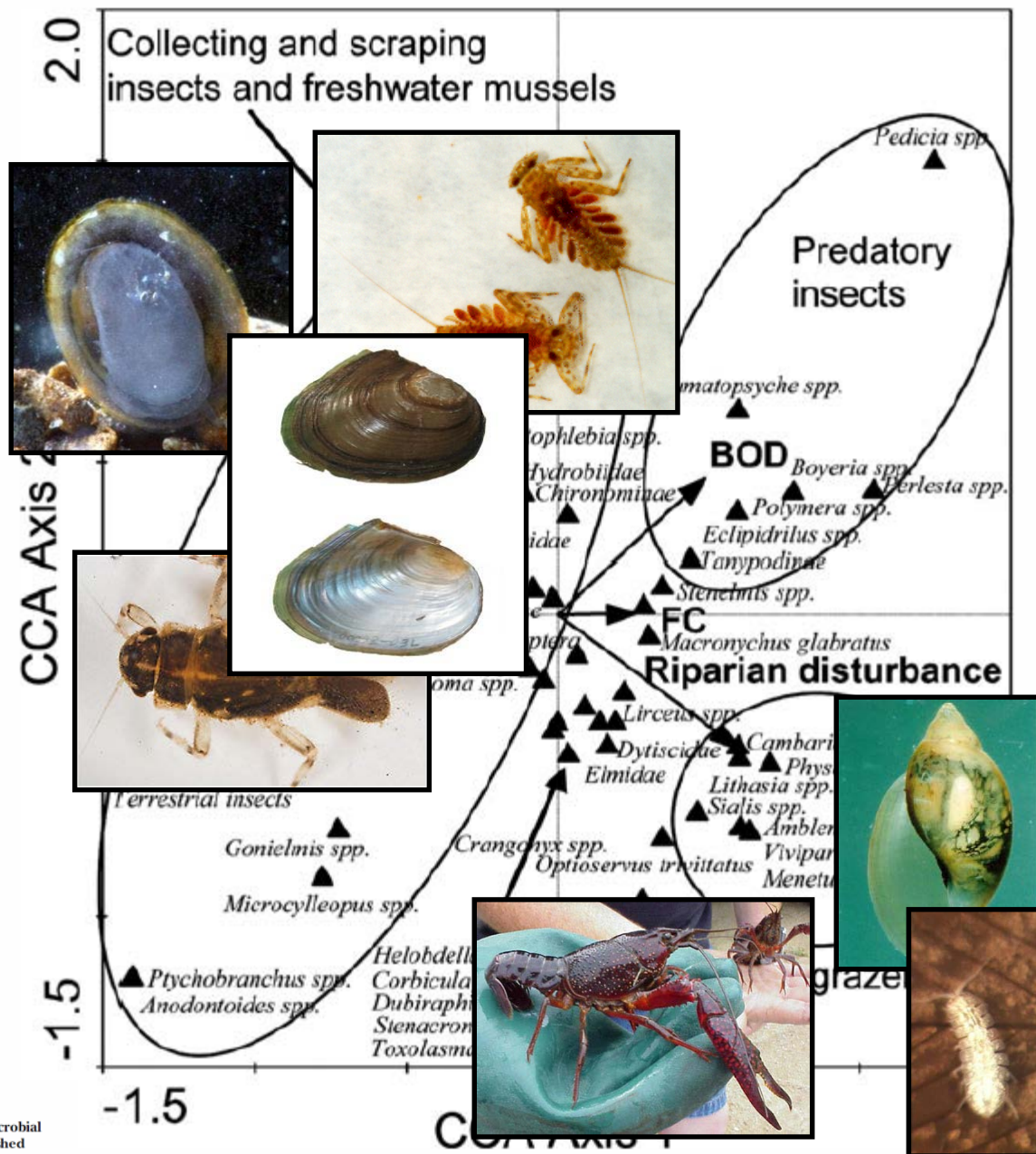
Statistical and DNA fingerprinting
association with feral hogs

Significant impacts to aquatic
organisms and habitat





1. Water 47
2. Water 49
3. Water 29
4. Feral Hog 39
5. Water 02
6. Water 09
7. Water 31



Kisatchie National Forest

Summer 2014

Excessive Fecal coliforms (*E.coli*)

17 of 31 sites

Leptospira and *Klebsiella*

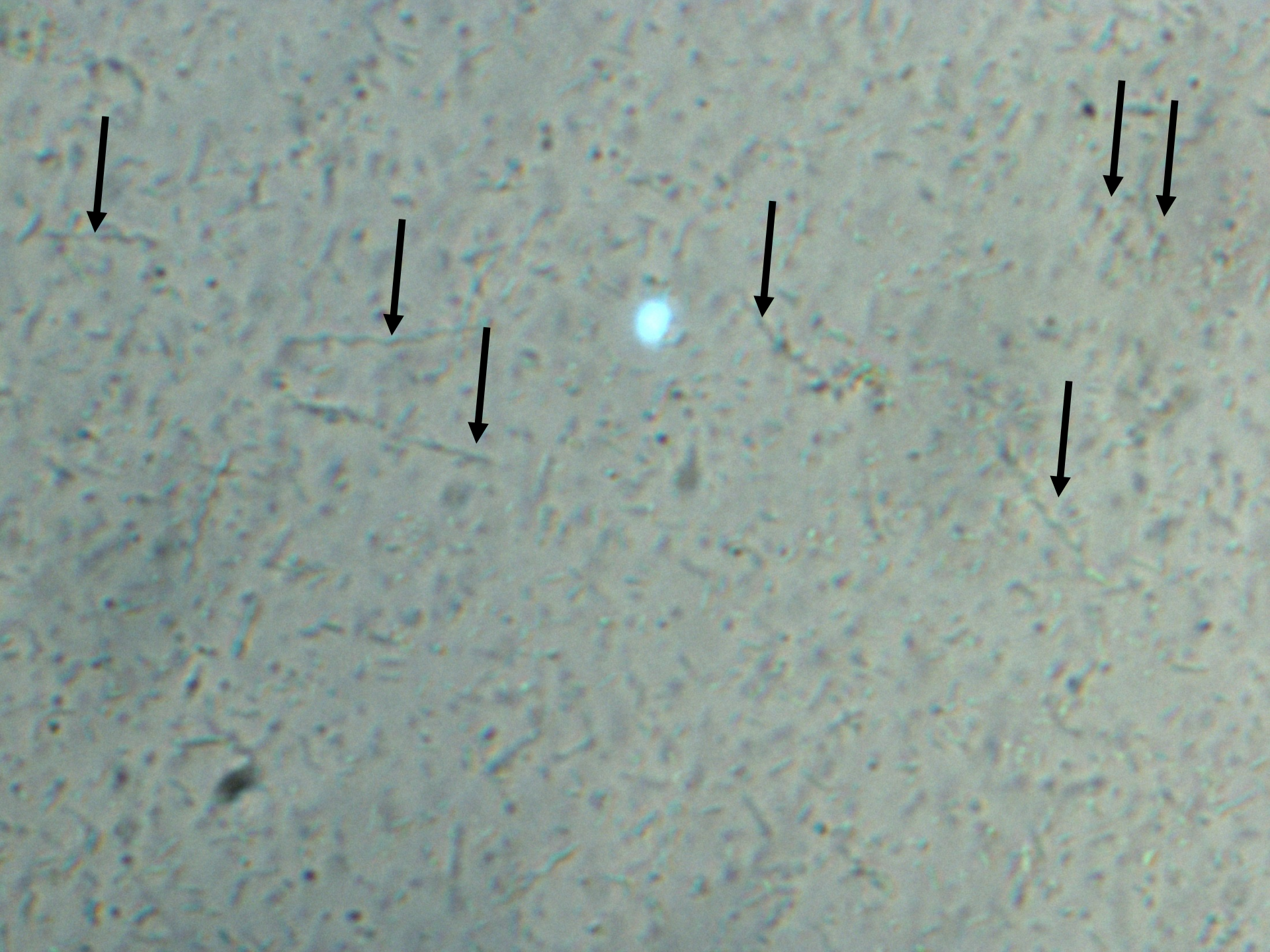
19 of 31 sites

Salmonella

8 of 31 sites

Yersinia

6 of 31 sites





11-1



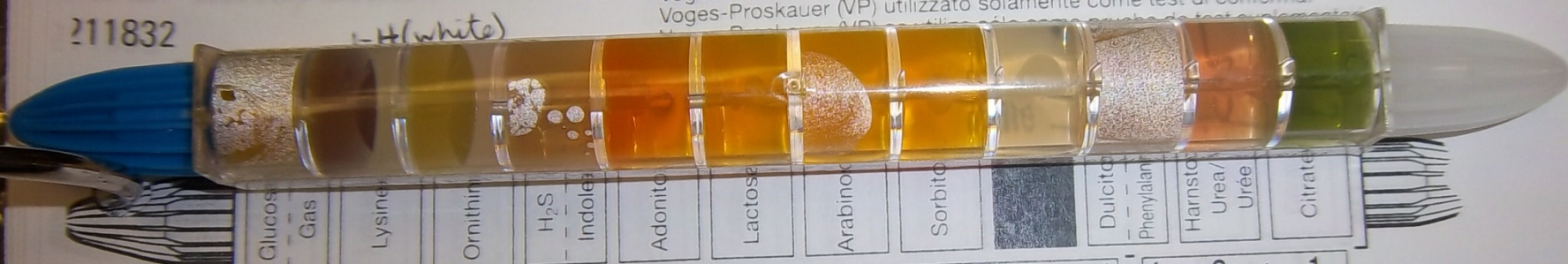


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-H (white)

Voges-Proskauer (VP) utilized as confirmatory test only.
 Voges-Proskauer (VP) wird nur als Zusatztest verwendet.
 Voges-Proskauer (VP) utilisé seulement comme test complémentaire.
 Voges-Proskauer (VP) utilizzato solamente come test di conferma.



Glucose	Gas	Lysine	Ornithine	H ₂ S	Indole	Adonitol	Lactose	Arabinose	Sorbitol	Dulcitol	Phenylalanine	Harnstoff/Urea/Urée	Citrate
2+1		4 + 2 + 1		4 + 2 + 1		4 + 2 + 1		4 + 2 + 1		4 + 2 + 1		4 + 2 + 1	

D (Biocode)

3

4

3

7

2

Klebsiella pneumoniae

34372

**BECTON
DICKINSON**

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Voges-Proskauer (VP) utilized as confirmatory test only.
 Voges-Proskauer (VP) wird nur als Zusatztest verwendet.
 Voges-Proskauer (VP) utilisé seulement comme test complémentaire.
 Voges-Proskauer (VP) utilizzato solamente come test di conferma.
 Voges-Proskauer (VP) se utiliza sólo como prueba de test suplementaria.

Patient

Date

78.81%

O1254

80 82 84 86 88 90 92 94 96 98 100

O1254

95 entries

Key	organism
G@hog@LMS79A@w56	
G@hog@LMS79A@w57	
G@hog@LMS79A@w55	
G@hog@LMS78A@w45	
G@hog@LMS74A@w06	
G@hog@LMS79A@w58	
G@hog@LMS75A@w19	
G@hog@LMS75A@w20	
G@hog@LMS78A@w44	
G@hog@LMS78A@w50	
G@hog@LMS79A@w60	
G@hog@LMS79A@w59	
G@hog@LMS78A@w43	
G@hog@LMS78A@w48	
G@hog@LMS79A@w54	
G@hog@LMS75A@w11	
G@hog@LMS77A@w40	
G@hog@LMS74A@w08	
G@hog@LMS76A@w21	
G@hog@LMS80A@th26	feral hog
G@hog@LMS76A@w22	
G@hog@LMS76A@w25	
G@hog@LMS74A@w04	
G@hog@LMS76A@w24	
G@hog@LMS76A@w23	
G@hog@LMS76A@w26	
G@hog@LMS75A@w15	
G@hog@LMS75A@w16	
G@hog@LMS75A@w17	
G@hog@LMS75A@w18	
G@hog@LMS74A@w03	
G@hog@LMS77A@w35	
G@hog@LMS74A@w05	
G@hog@LMS77A@w36	
G@hog@LMS77A@w33	
G@hog@LMS77A@w37	
G@hog@LMS77A@w38	
G@hog@LMS74A@w01	
G@hog@LMS77A@w39	
G@hog@LMS73A@th19	feral hog
G@hog@LMS73A@th20	feral hog
G@hog@LMS73A@th17	feral hog
G@hog@LMS73A@th18	feral hog
G@hog@LMS72A@th10	feral hog
G@hog@LMS79A@w52	

Summer 2015

Excessive Fecal coliforms (*E.coli*)

9 of 40 sites

Leptospira

34 of 40 sites

Klebsiella

40 of 40 sites

Yersinia

29 of 40 sites

***Salmonella* (including Swine Cholera)**

9 of 40 sites

2014 and 2015 Combined

Excessive Fecal coliforms (*E.coli*)

26 of 71 sites

Leptospira

53 of 79 sites

Klebsiella

59 of 71 sites

Yersinia

35 of 71 sites

***Salmonella* (including Swine Cholera)**

17 of 71 sites

No Detections
Multiple Hog Sources
2015 KNF Hogs
2015 LDWF Hogs
Pre-2005 KNF Hogs

Natchitoches

0 3.75 7.5 15 22.5 30 Kilometers

Preliminary Implications

Human and wildlife pathogens present and associated with feral hogs.

DNA fingerprinting (22 of 40 sites) detected individual and/or matrilineal connection (i.e., same sounder – 12 of 39 sampled hogs).

Feral hogs may be spreading by natural demographic processes or anthropogenic actions.



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**Jaqueline Satter, Kaitlyn Matherne,
Kayla Smith, Kami Stamey, Debra Kelly**

