

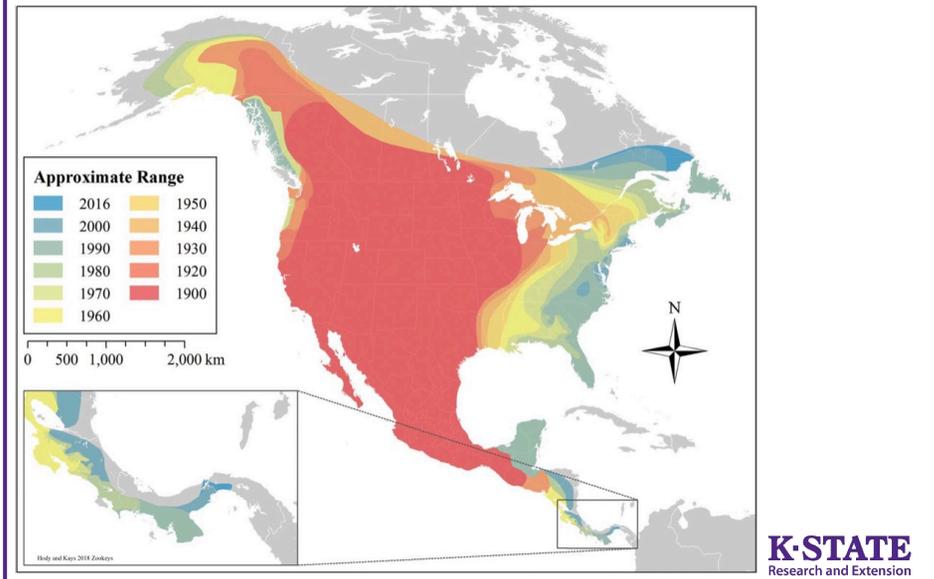
COYOTE BIOLOGY & MANAGEMENT

Drew Ricketts – Wildlife Specialist



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DISTRIBUTION



2

COLORATION



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SIZE

- 18-43 pounds
- Males 30.7
- Females 26.0

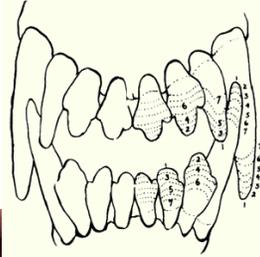


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LIFE HISTORY

- Maximum known age
 - 14.5 yrs in wild
 - ~22 yrs in captivity



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MORTALITY

- 50% die before first breeding season
- Human caused mortality high (40-90%)
 - Konza 17 coyotes GPS Collared April 2013 – August 2015
 - 7 mortalities
 - 3 vehicle collisions
 - 2 shot
 - 2 disease
 - 70% of the coyotes in most populations are less than 3 yrs old



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NATURAL MORTALITY

- Diseases
 - Distemper
 - Canine hepatitis
 - Tularemia
- Parasites
 - Mange (2)
 - Heartworm
 - Hookworm
 - Tapeworm



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FOOD HABITS

Food Habits (KS Stomach Contents)

- Rabbit (40%)
- Rodents (31%)
- Carrion (28%)
- Miscellaneous
- Chicken
- Game birds
- Other birds

27% had empty stomachs

Gier, 1968

Food Habits (Konza Scats)

- Mammals (99%)
 - Cotton rats (76%)
 - Voles (29%)
 - Cottontails (19%)
 - Harvest mice (13%)
 - Deer (4%)
 - Cattle (2%)
 - Opossums (0.1%)
- Insects (19%)
- Fruits (9%)
- Birds (9%)
- Fish (1%)
- Reptiles (1%)

Brillhart and Kaufman 1995

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LIVESTOCK PREDATION

- Calf loss to predators
 - 11% U.S.
 - 4.6% in KS
 - Coyotes responsible for 84% of calf loss to predators
 - Total cost of \$4 M annually to KS producers
- Sheep and lamb loss to predators
 - ~30% Sheep losses in U.S.
 - ~40% Lamb losses in U.S.
 - KS very similar to national trends
 - ~15% of operations reported losses to predators
 - Coyotes – 45% Lamb 91% Sheep
 - Dogs – 5% Lambs 6% Sheep
 - Eagles – 44% Lambs
 - Total cost of \$640,000 to KS producers



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REPRODUCTION

- One 4-5 Day Estrus Annually Jan- Feb
- In most years, Females born in spring won't breed the following breeding season
 - Majority of yearling females will produce pups when resources are high
 - Litter size varies depending on resource abundance
 - Low resources – 3 pups/litter
 - High resources – 8 pups/litter

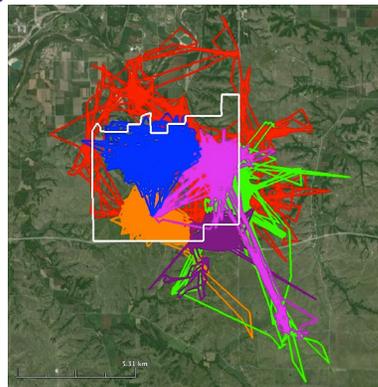


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SPACE USE

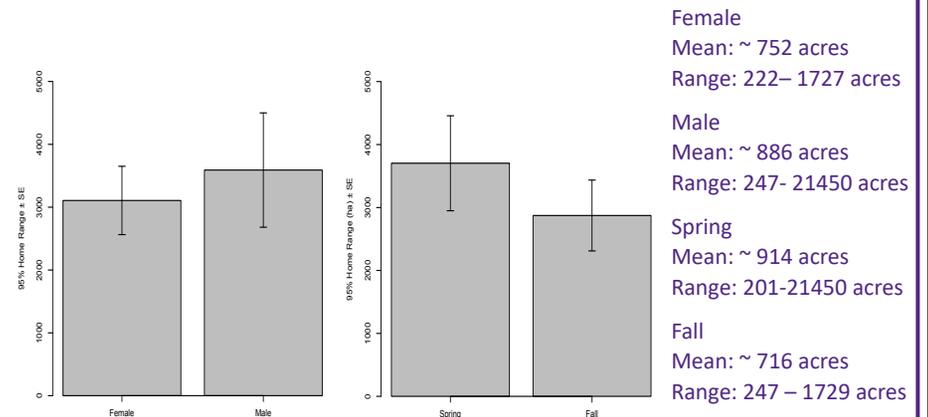
- Home range size varies widely 2-55 mi²
- Urban areas have higher densities and smaller home ranges



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HOME RANGE SIZE



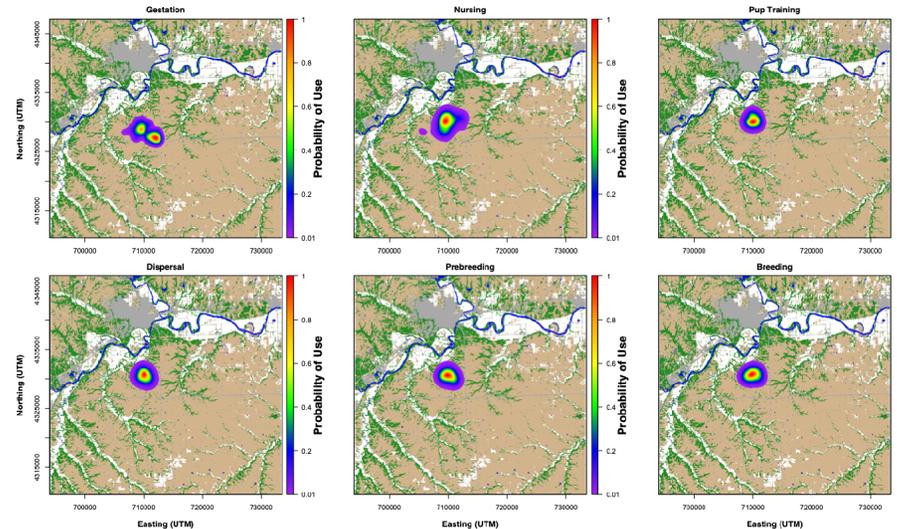
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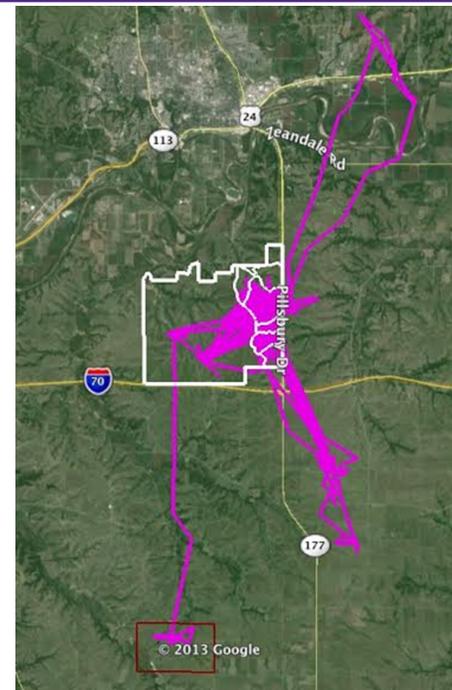
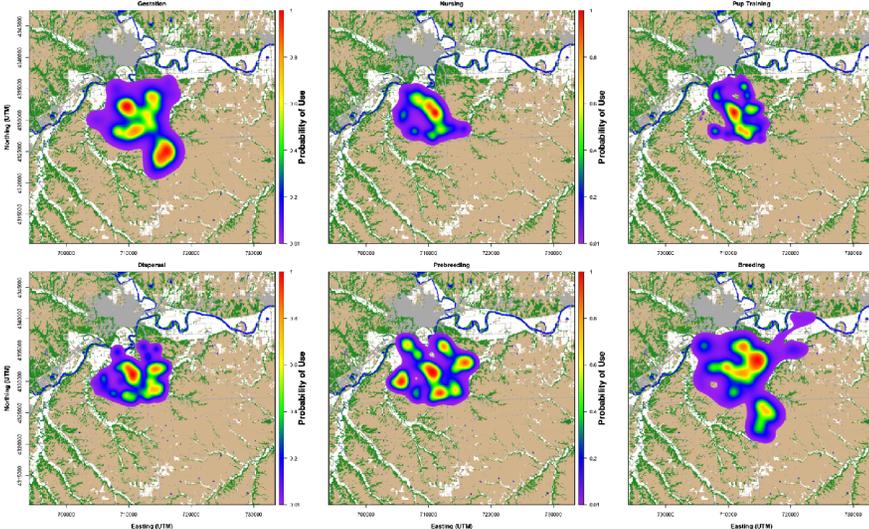
SOCIAL HIERARCHY

- Coyotes establish and defend territories to maximize reproductive fitness
- Resident coyotes are breeders, juveniles, and pups belonging to a family group and in possession of a territory that exhibit passive (i.e., scent marking) and aggressive (i.e., physical conflict) behaviors to exclude other coyotes
- Transient coyotes do not maintain territories and exhibit nomadic movements with no fidelity for a territory

RESIDENT MALE



TRANSIENT FEMALE



FAMILY GROUPS

- Long-term genetic studies suggest lifetime pair bonds
 - Male and Female both defend the territory
 - Both participate in group howls
 - Both defend the den and care for pups
- Kansas study at Ft. Riley found 47% were Transients Kamler and Gipson
- Extremely hard to affect population numbers because of high transient numbers of transients and variable reproduction
 - Models indicate must kill > 70% of the population every year for 50 yrs to eliminate

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NATURAL HISTORY

- Do they hunt with badgers?
- Minta et al. 1992 – coyote-badger pairs captured 1/3 more ground squirrels

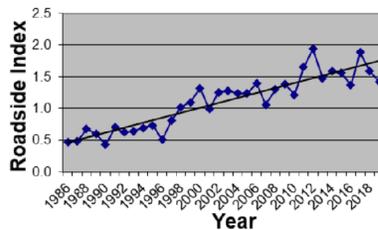


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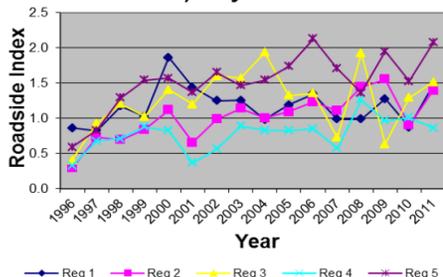
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ABUNDANCE

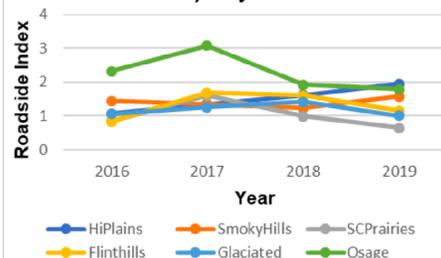
d) Coyote



d) Coyote

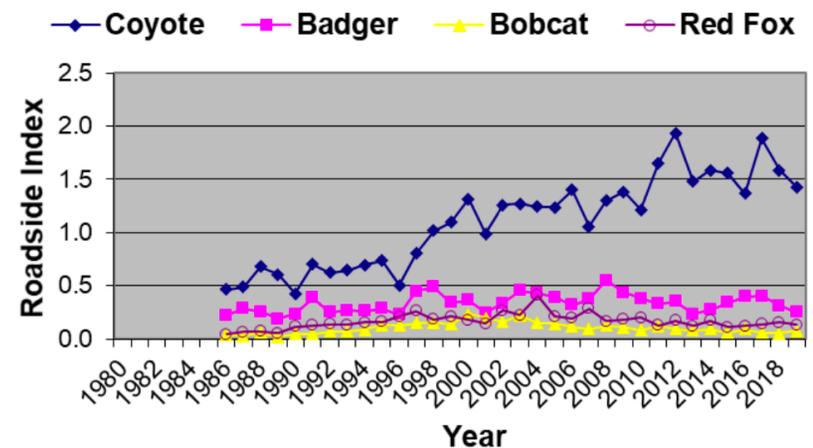


d) Coyote



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ALL PREDATORS



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FUR PRICES

FUR AUCTION RESULTS For 2/17/18			
	# SOLD	TOP	AVERAGE
BADGER	14	\$22.50	\$6.42
BEAVER	46	\$9.50	4.26
BOBCAT	151	\$170.00	43.07
COYOTE	261	\$65.00	\$25.42
GREY FOX	0	0	
MINK	1	\$5.50	
MUSKRAT	168	\$3.25	
OPPOSSUM	48	\$0.35	
OTTER	5	\$35.00	
RACCOON	593	\$7.00	
RED FOX	2	\$12.00	
SKUNK	15	\$0.75	
WOODCHUCK	0	0	

FUR AUCTION RESULTS 2/16/19			
	# SOLD	TOP	AVERAGE
BADGER	3	\$18.00	\$12.83
BEAVER			
BOBCAT	43	\$105.00	\$39.59
COYOTE	156	\$75.00	\$32.16
GREY FOX			
MINK			
MUSKRAT	18	\$2.00	\$1.83
OPPOSSUM			
OTTER			
RACCOON	186	\$8.50	\$4.25
RED FOX			
SKUNK			
WOODCHUCK			

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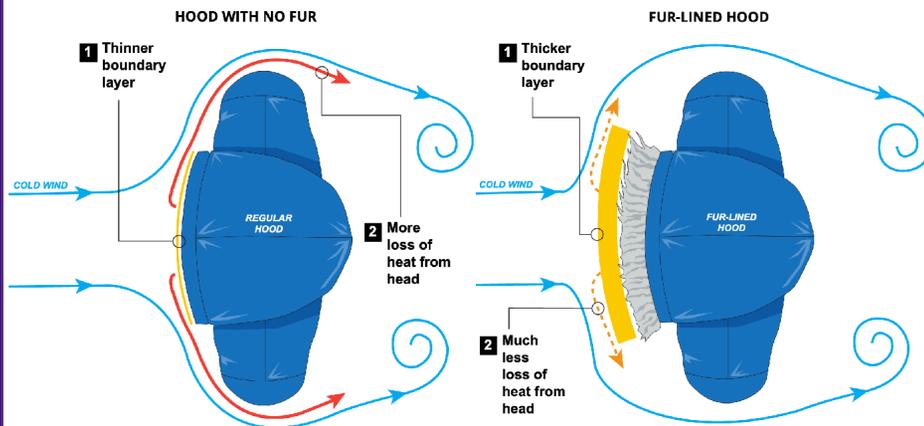
FUR-LINED HOODS



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FUR-LINED HOODS

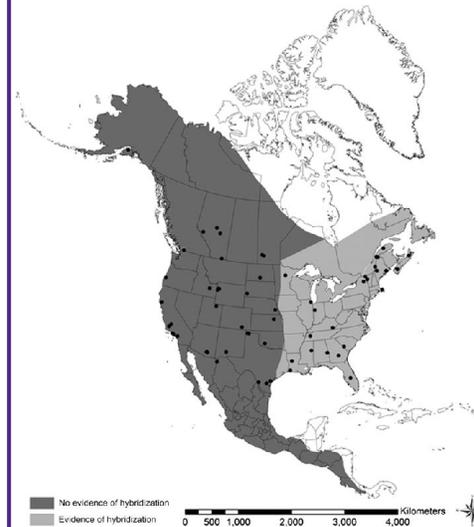


Cotel et al. 2004

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HYBRIDIZATION



Oikos, Volume: 124, Issue: 5, Pages: 535-542, First published: 19 February 2015, DOI: (10.1111/oik.01824)

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WHY DO COYOTES RESPOND TO CALLS?

- Greed or competition
- Hunger
- Curiosity and entertainment
- Social communication
- Territory defense



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VOCALIZATION TYPES

GREETING

1. Whine (low frequency)
2. Group howl

CONTACT

1. Lone Howl (best for an approach)
2. Group Howl (best for vocal response)
3. Group Yip-Howl

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VOCALIZATION TYPES

AGONISTIC

1. Woof
2. Growl
3. Huff
4. Bark (avoid)
5. Bark-Howl (often misused) avoid
6. Yelp
7. Whine (high frequency)



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LONE HOWL

<https://www.youtube.com/watch?v=qQFuftBXc7k>

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GROUP HOWL

<https://www.youtube.com/watch?v=YtsZole3Czk>

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YIPS AND BARKS

<https://www.youtube.com/watch?v=DaLekKRzG8M>

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PUP DISTRESS

<https://www.youtube.com/watch?v=E-WOo4iv314>

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LEGAL METHODS OF TAKE

- Shooting
- Calling
- Trapping
- Snaring

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SHOOTING AND CALLING

- Legal equipment
 - Firearms, except fully automatic
 - Archery equipment
 - Calls, Lures, Bait, and Decoys
 - Coyotes and furbearers may be taken at night without the aid of artificial light or light amplification devices during the legal season (no closed season for coyotes)
 - Vehicles and radios may be used while taking coyotes

SHOOTING AND CALLING

- New for 2021
 - Night vision/thermal scopes and artificial lights
 - Coyotes only
 - Only during January 1 – March 31
 - Requires \$2.50 Night Vision Equipment Permit
 - Use of vehicle is not permitted when using lights and night vision
 - Not allowed on department lands and waters, including WIHA and iWIHA properties

NIGHT VISION, THERMAL & LIGHTS

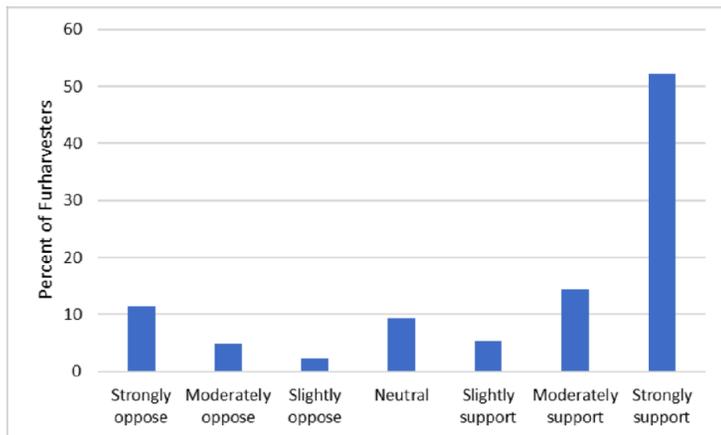


Figure 3. Kansas furharvester opinions on the legalization of lights, night vision and thermal imaging equipment to hunt coyotes at night in Kansas (n=1170).

NIGHT VISION, THERMAL & LIGHTS

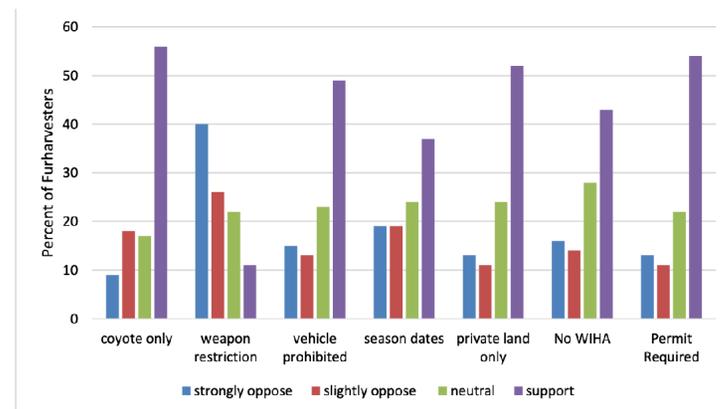


Figure 5. Opinion by Kansas furharvesters on potential restrictions to night hunting in Kansas with lights, night vision and thermal imaging equipment.

COYOTE CALLING

- Find an elevated position and quietly approach from downwind



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COYOTE CALLING

- Call into the wind towards draws and other cover that holds coyotes



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COYOTE CALLING

- Call types
 - Open reed
 - Closed reed
 - Diaphragm
 - Electronic

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TRAPPING AND SNARING

- Legal equipment
 - .17 and .22 caliber rimfire rifles and handguns may be used to dispatch trapped animals when using a light
 - Foothold traps used in land sets must have a jawsread of 7" or less and smooth jaws
 - Bodygripping traps must have a jawsread of less than 8"
 - Snares may not be set within 50' of a roadway except by landowner, tenant, immediate relatives, or authorized agents.

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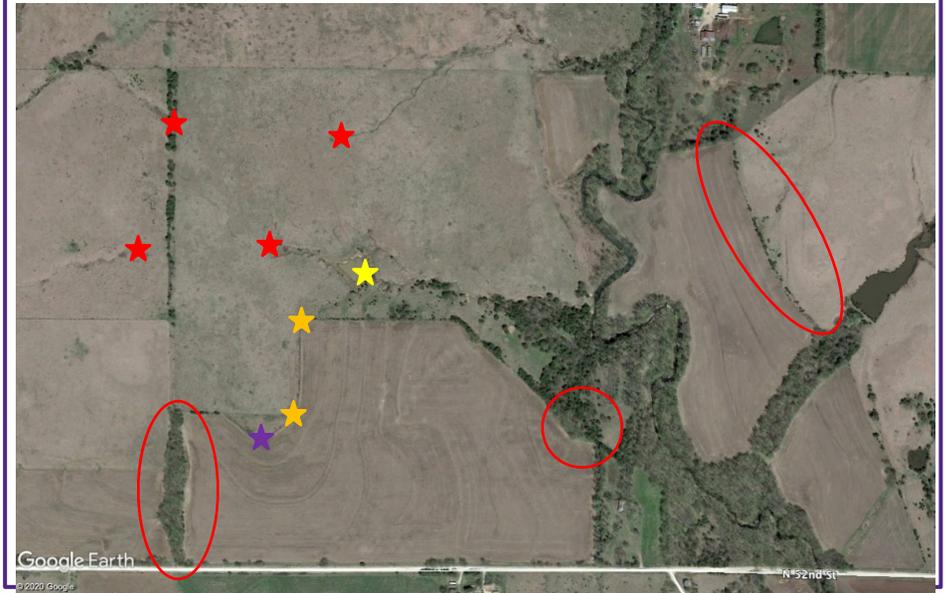
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LOCATION

www.youtube.com/watch?v=bIFgfMDEy_Y&list=PLv5hSjfvFanJWDfZorTRA8TrxrEX41LKJ&index=1

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LOCATION



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LOCATION

- Set on sign!!



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DIRTHOLE SET

www.youtube.com/watch?v=fuCTxZYOmT8&list=PLv5hSjfvFanJWDfZorTRA8TrxrEX41LKJ&index=4

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FLAT SET

www.youtube.com/watch?v=QRcUvwmGtHk&list=PLv5hSjfvFanJWDfZorTRA8TrxrEX41LKJ&index=5

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QUESTIONS?

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Facebook: [@ksrewildlife](http://www.facebook.com/ksrewildlife)

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