



CHEWING THROUGH A
SUCCESSFUL RESCUE,
REHAB &
RELEASE OF BEAVERS!



Wildlife Biologist

NC Licensed Rehabber
(15 years; 1st RVS
rehabber in NC)

Wildlife Rehab Director
of CWCC



RUBY DAVIS

704-877-3037



North American Beaver (*Castor canadensis*)

- CWCC
- About Beavers
- Help!
- BB & JJ
- Release



Carolina Wildlife Conservation Center

- Iron Station, NC
- 105 acres of Conservation Land
- 501(c)3 Non-Profit Organization
- Converted Horse Barn
- Outdoor Enclosures
- Huge focus on conservation of land & animals!
- Not open to the public



What species do we rehab?

- Rabies Vector Species(RVS)

Fox

Bats

Skunks

Raccoons

Bobcat



- Non-Rabies Vector Species

Squirrels (Gray and Flying)

Opossums

Cottontail Rabbits

Groundhogs

Beavers

Otters

Reptiles



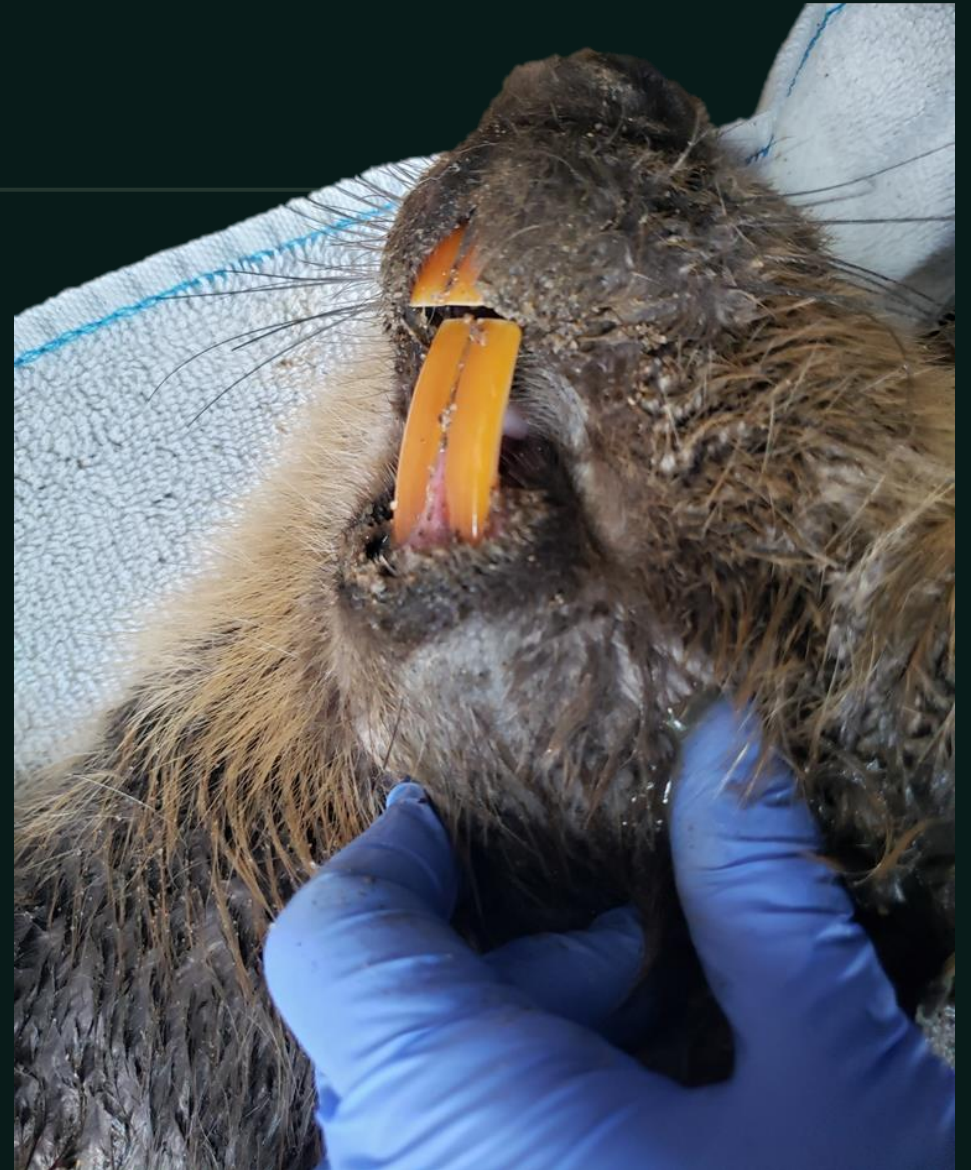
Natural History

- Master Engineers
- Largest Rodent
- Herbivores
- Nocturnal
- Fresh Water
- Lifespan 10-20 years
- Mate for life
- Group called Colony
- Breed once a year (Jan-March)
- Sexual Maturity 2-3 years



Neat Creatures

- Fur –2 layers (upper layer dense/rough; inner layer silky/soft)
- Goggles
- Ears/Nose valves
- Tail
- Teeth
- Average 60 - 100 lbs.
- DO NOT hibernate
- Submerge 15 mins



Gestation & Kits

- Gestation – average 105 days
- Parturition occurs in lodge or den
- Precocial
- Average 2-3 kits but can up to 9
- Average birth weight 300-700g
- Mom lactates 2-3 months but kits can consume solid food at 1 week of age
- Emerge from lodge 2 months
- Weaned 3 months



Offspring

- Playful / Strong / Tempers
- Grow fast
- Kits stay for 2 years
- Seeking mates at 2 years
- Most vulnerable



Helping Beavers



Reunite or Rescue

- Determining what type of help the beaver needs:
 - Reuniting?
 - Need a rehabber?
 - Coexist!
- Photos are the best!





Babies / Infants

- ▶ Orphaned. Cannot be reunited.
- ▶ Do not know where the den is.
- ▶ Must go to a rehabber.
- ▶ Will need extension permit



Needs a Rehabber ASAP

- ▶ Injured - must go into care

 - ▶ Predation attacks

 - ▶ Hit by car

 - ▶ Territorial attacks

 - ▶ Shot

 - ▶ Plastic

- ▶ Sick

 - ▶ Lethargic

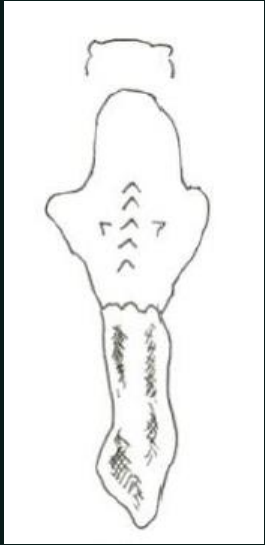
 - ▶ Difficulty breathing

 - ▶ Displaced

 - ▶ Emaciated

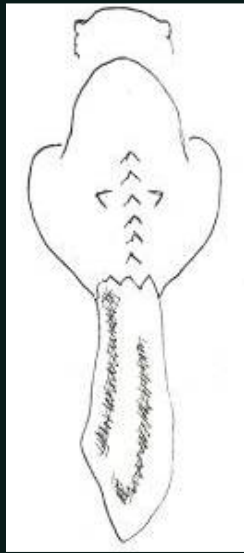


Body Condition Scores



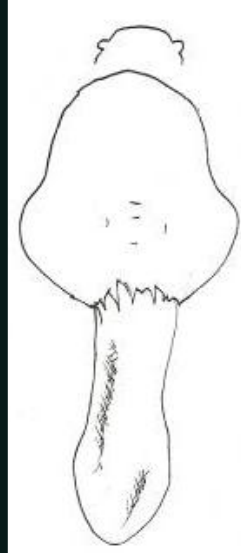
Body Condition Score 1

Beaver is emaciated: skeletal structure extremely prominent, little flesh cover. Vertebrae distinctly segmented. Tail arch very prominent, with tail sunken on either side of midline, owing to low fat reserves.



Body Condition Score 2

Beaver is in poor condition: segmentation of vertebral column evident. Dorsal pelvic bones are readily palpated. Tail arch prominent, tail sunken, low-fat reserves.



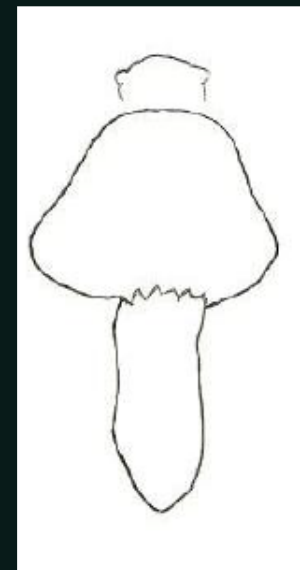
Body Condition Score 3

Beaver is in normal condition: vertebrae and dorsal pelvis not prominent, but palpated with slight pressure. Tail arch is visible, but tail is thick with good healthy fat reserves.



Body Condition Score 4

Beaver is overweight: spine is a continuous column. Vertebrae palpated only with firm pressure. Tail arch not really visible, tail thick and more rounded.



Body Condition Score 5

Beaver is obese: body is bulky. Bones disappear under flesh and subcutaneous fat layer. Tail is thick and rounded.



Eat
Sleep
Gain Weight!!



Release!



Singles

- Never raise alone
- Approximate same age
- Do not introduce older (year+) singles



Fresh Water

- Essential to survive
- Fresh water ponds, rivers, streams, marshes
- Protection from predation
- Swim to hydrate



Beaver Milk

- Beaver milk is very rich; higher in fat, protein, and energy, but lower in sugar, content compared to that of many other mammals.
- Beaver milk composition : Water 67%, Fat 19%, Protein 11.%, Sugar 1.7%, Ash 1.1%
- Substitute milk should have a low sugar content to avoid diarrhea. ----- Fox Valley beaver formula.



Baby Feeding

- Fox Valley Beaver formula
- Fussy / Temper tantrums
 - Sweet potato baby food
- Nipples matter
 - Syringe feed to control
 - Double Nipple
- Strong SUCKLING reflex
 - Aspiration
 - DEADLY
- Do NOT bloat
 - DEADLY
- Burp after feeding

Age/Weight	Feedings
Birth (300-700g)	Formula 7-8x/day
1 week	Formula 6x/day
2 weeks	Formula 5x/day
3 weeks	Formula 5x/day
4 weeks	Formula 4x/day
5 weeks	Formula 4x/day
6 weeks (~4 lbs.)	Formula 3x/day
7-8 weeks	Formula 2-3x/day
8-10 weeks	Formula 2x/day
10-12 weeks	Weaned



See [Wild Mammal Babies: the first 48 hours and beyond](#) for further information

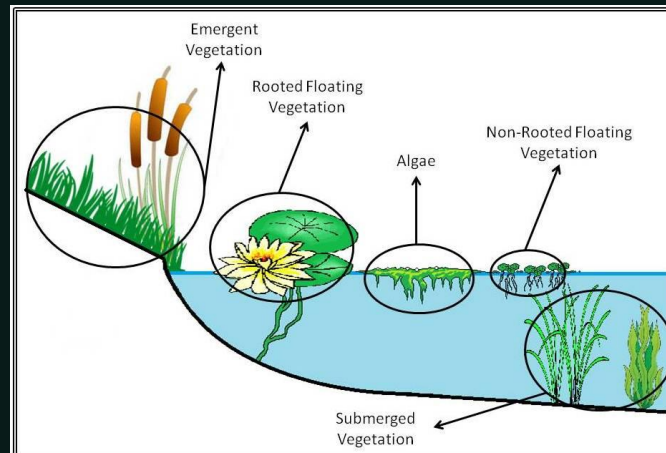
Weaned Foods

➤ Browse

- Variety trees
 - Cottonwood
 - Riverbirch
 - Poplar
 - Alder
 - Willow
 - Sweetgum
 - Maple
 - Cherry
 - Oak
 - Ash
 - NOT conifers

➤ Natural Vegetation

- Aquatic
 - Duckweed
 - Pond Lilies
 - Cat tails
 - Pickerelweed
 - Sedges
 - Arrowhead
 - Water hyacinth



➤ Vegetables

- Sweet potato
- Dandelions
- Clover
- Microgreens
- Kale
- Broccoli
- Celery
- Carrots & Tops
- Cabbage
- Spinach
- Pumpkin

➤ Fruits

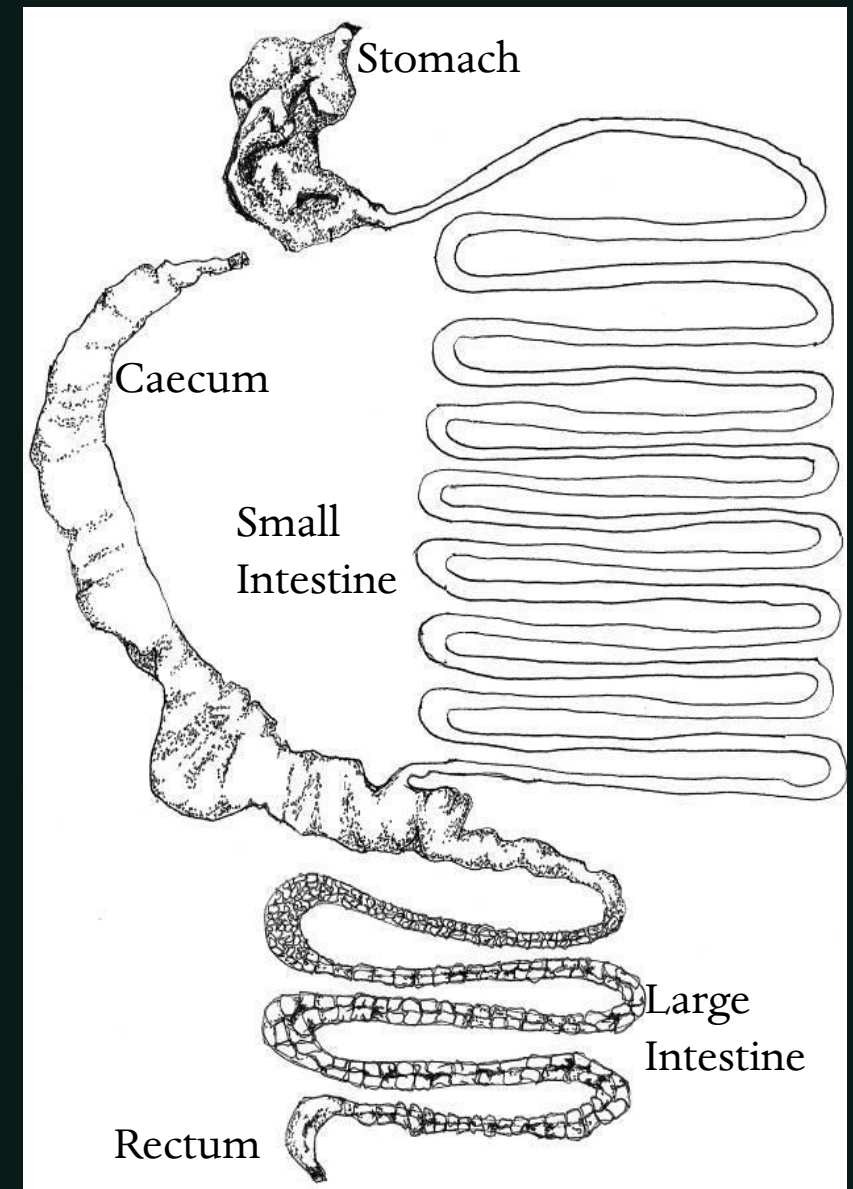
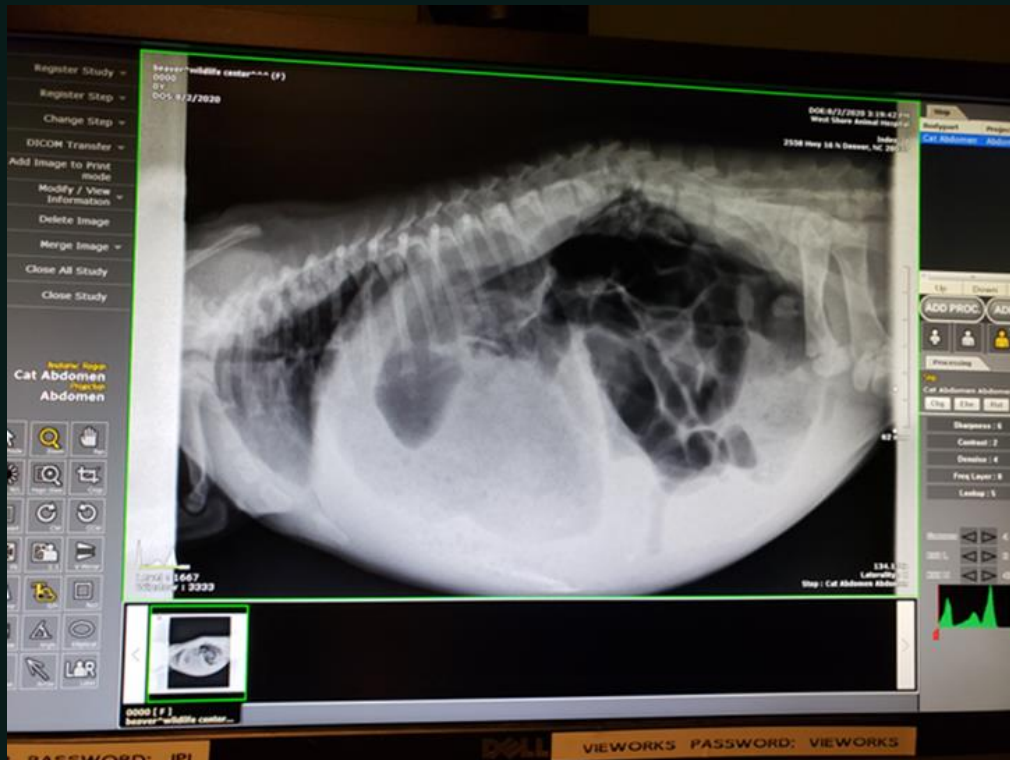
- Apple
- Pear

**Rodent Block – staple in rehab

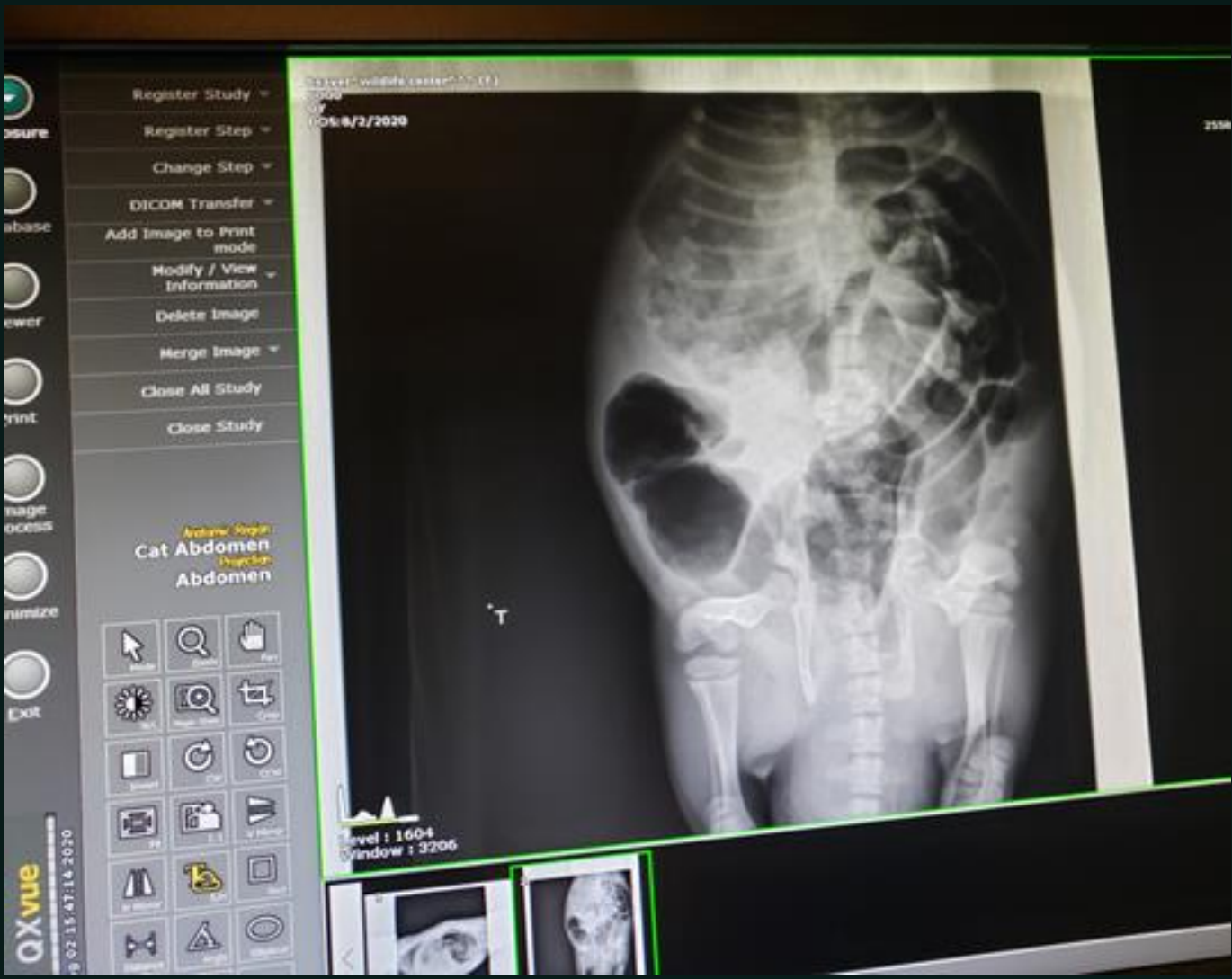
Digestion

*** Important ***

Can be deadly



Digestive systems of Beavers.
Monogastric hindgut fermenters.



DO NOT FEED

- Onions
- Citrus fruits
- Radishes/Beets
- Parsnips/Hemlocks
- Baked goods
- White potatoes
- Tomatoes
- Grapes
- Cantaloupe
- Elder – poison cyanogen glucoside

Vocal



Stimulate

- Place in shallow warm water
- Do not leave alone in tub
- Stools

Black – normal on intake – dehydrated BUT if like coffee granules – GI track bleed

Red (around anus) – inflammation

Green/brown – bacteria infection

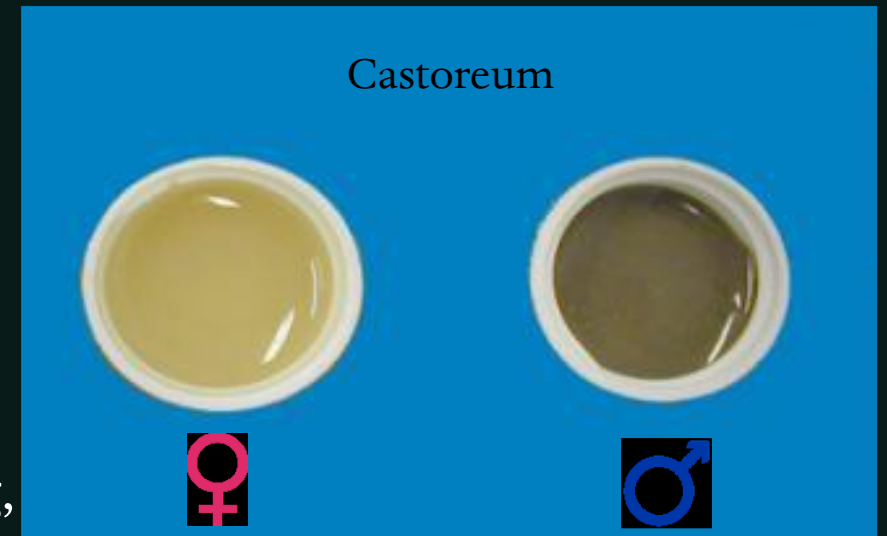
White – undigested milk

Yellow (like scrambled eggs) – normal!



Castoreum

- Both gender possess castor glands
- Marking territories
- Two other glands on each side of urogenital opening, secretes oil
- Repel water
- Males – Motor oil smell
- Female – Old Cheese
- Used for Vanilla Flavoring!!!!



- Determine Sex
 - Baculum
 - Teats
 - Castoreum fragrance

Parasites

- Ectoparasite - Beaver beetle
 - Around neck/head region
 - Found in dirt of lodges/burrows
 - Grooming claw does not remove



Orange-rusty brown in coloration.



Contents of Caecum
with adult beaver
fluke

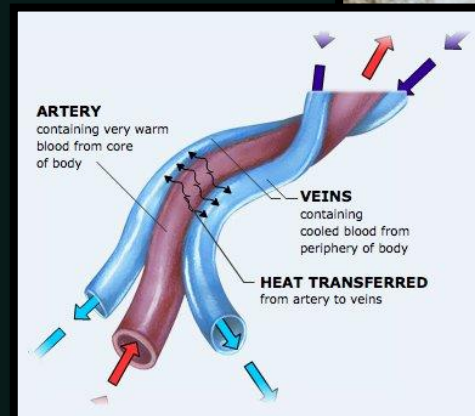
- Endoparasites – Nematode & Fluke
- Nematode (*Travassosius rufus*):
 - Mucosal layer of stomach
 - Eggs expel in feces
- Fluke (*Stichorchis subtriquestrus*)
 - Lives in caecum
 - Aquatic snail ingested
- Protozoa (*Cryptosporidium spp.* & *Giardia spp.*)
 - Small intestine
- Haemoparasites
 - Blood
- Liver fluke (*Fasciola spp.*)
 - Gut to liver
 - Cause anemia / reduce growth

Helping Beavers



Wounds

- Infection
- Environmental bacteria
 - (*Pseudomonas* spp. & *Aeromonas* spp.)
 - Septic (Endocarditis & Pneumonia)
- Surgery (do not feed willow contain salicylates, like aspirin, can delay blood clotting)
- Control heat loss





Beware!!

Will bite!

Teeth sharp

Move fast



This was just a NIP!
Not a bite.

Treatment

- Antibiotics
- Baytril, Chloramphenicol, Gentamicin, Metronidazole, SMZ
- NO –cillins, Cephalosporins, or Tetracycline (meds safe for guinea pigs, safe for beavers)
- RADs for pneumonia diagnosis
- Can be sedated and intubated



Housing

- Great Dane Kennels
- Need space
- Upgrade
- Chew proof
- Access to fresh water



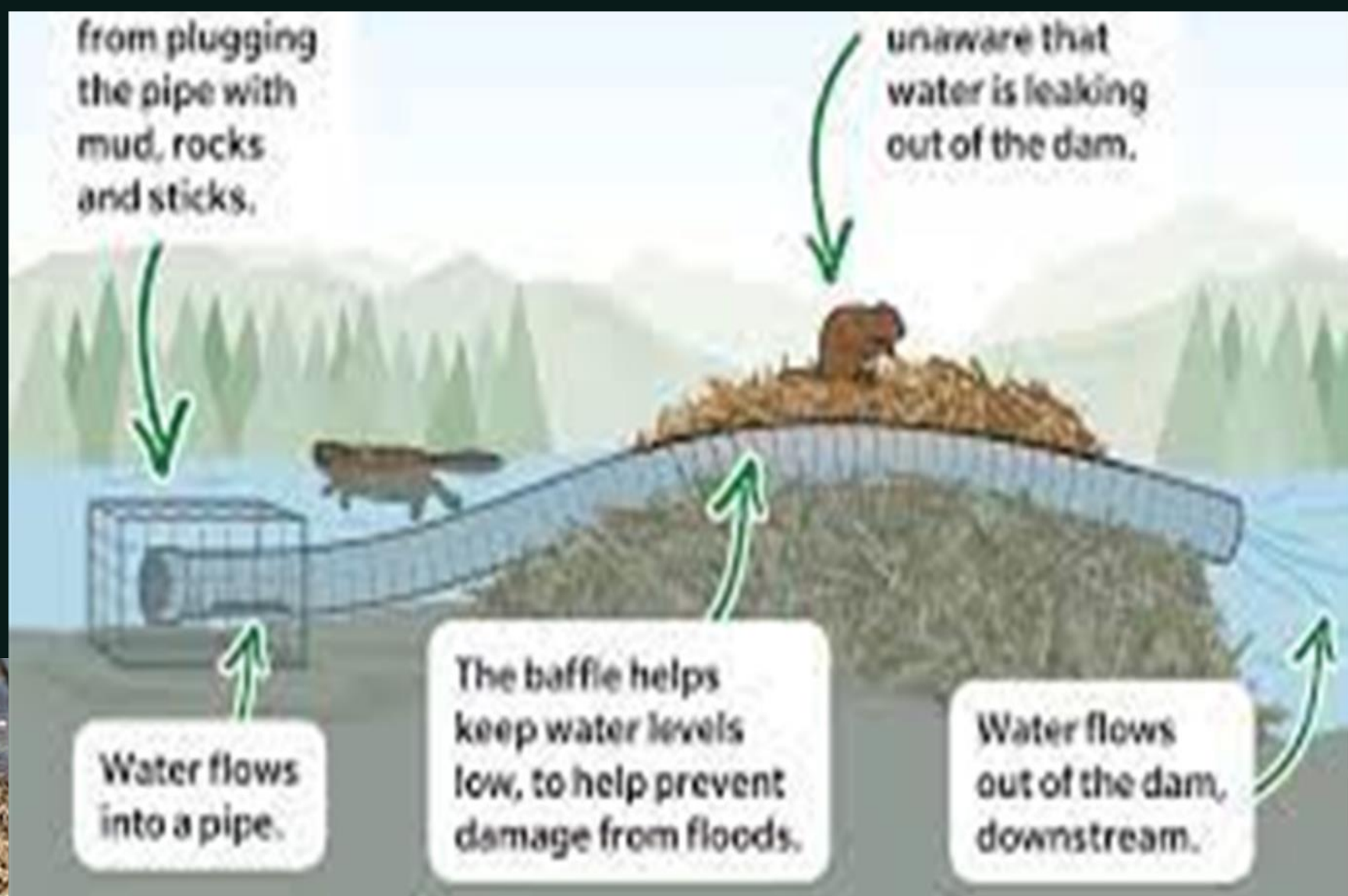
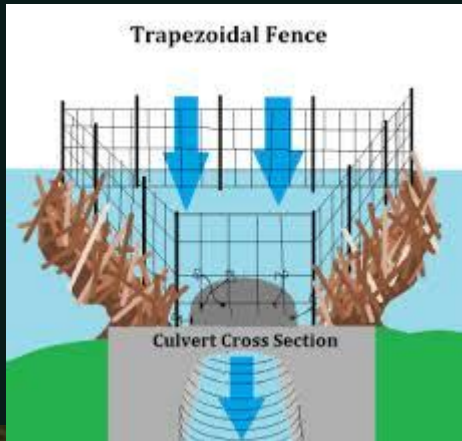
Helping Beavers

Human Conflict – COEXIST!!

- Illegal to relocate / kill wildlife (beavers, otters, groundhogs)
- Wrap trees
- Install water flow devices “Beaver Deceiver”
- Deter –
 - Vegetable / Mineral Oil infused with Cayenne Pepper
 - Paint trees with sand / paint mixture (8 oz. fine / mason sand to 1 qt. of exterior latex paint; 4’ from bottom)



Pond Leveler & Beaver Deceiver



Keystone Species



ENGINEERS

TO THE RESCUE

The Beaver

a keystone species



black kite



When there is a lot of rain, beaver dams hold back the water in natural valleys. Thus there will be less flooding downstream.

Large grazers eat from twigs of the felled trees, the stump regrowth, and the meadows that arise after departure of the beavers

Drowned trees are loved by woodpeckers and bats, and they serve as a lookout for birds of prey

Martens find shelter in beaver burrows and profit, like kingfishers, from the temporarily ice-free state of beaver pools

Beaver pools filter the water

Fish, amphibians, dragonflies, marsh plants, and water birds thrive in beaver pools

- osprey
- kingfisher
- wild horse
- middle spotted woodpecker
- tinder fungus
- noctule
- polescat
- otter
- otter
- branded bur-reed
- grass snake
- black stork
- wild cattle
- wild boar
- red deer
- little grebe
- young salmon
- yellow iris
- fen ragwort
- banded demoiselle
- common frog
- tree frog
- skull cap

BB&JJ



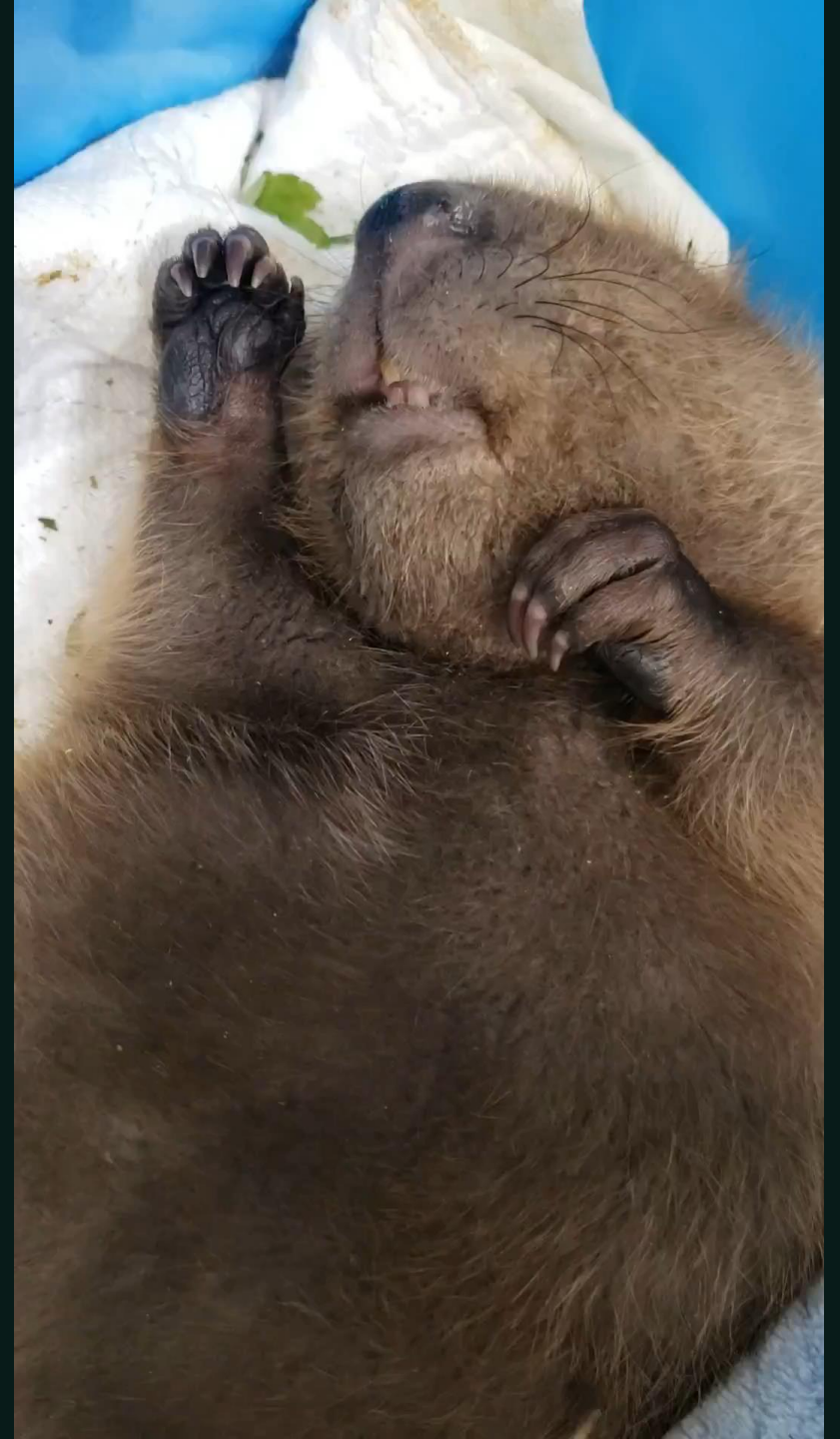
BB&JJ



BB Sleeping

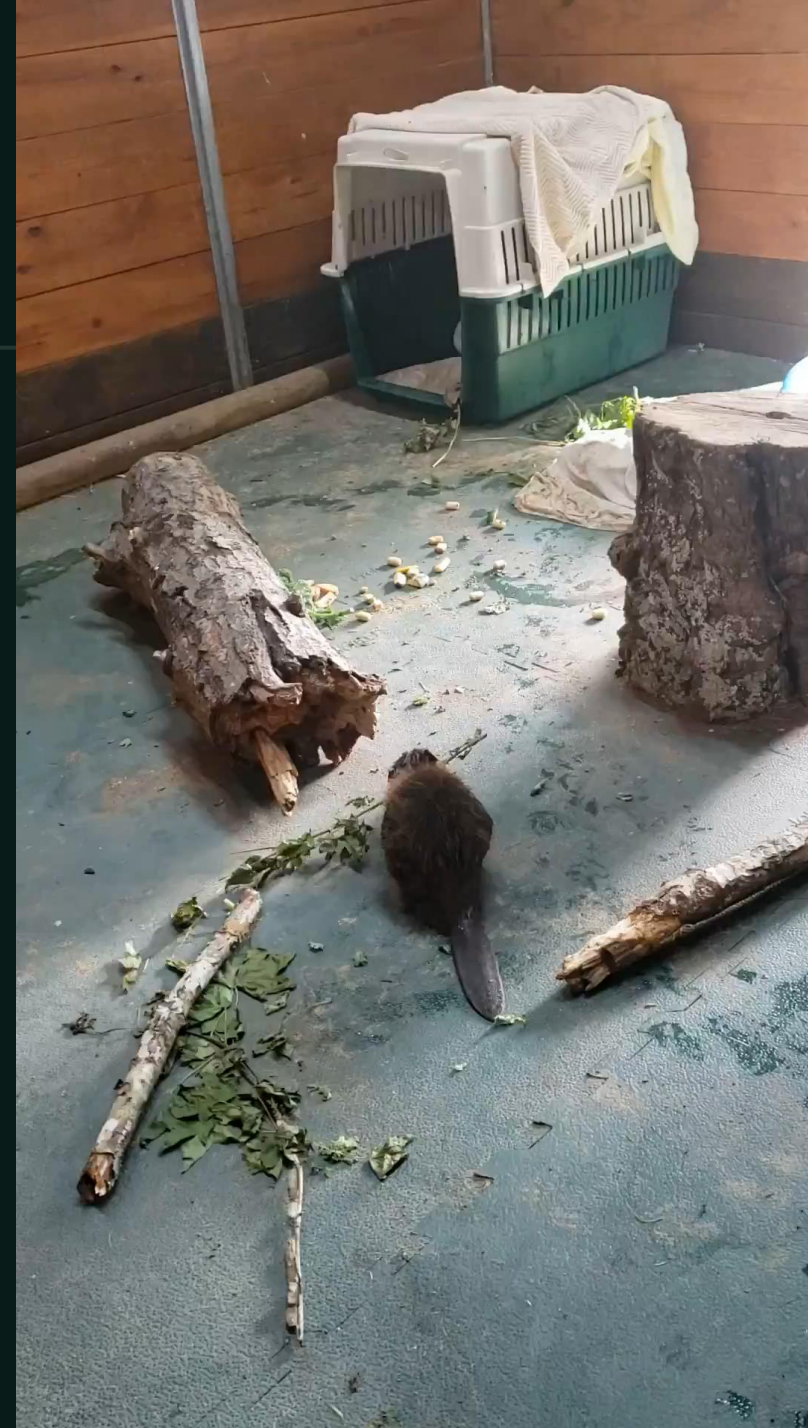
Sleep on their backs

Need dry space



Beaver Dam

Instinctive



Bank den



BB & JJ's
Lodge

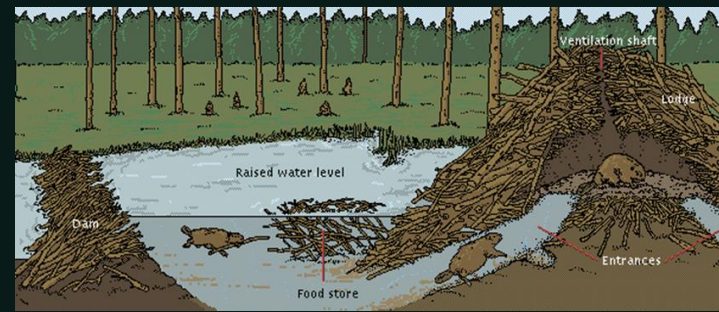




Maintenance



Inside beaver lodge



Main chamber

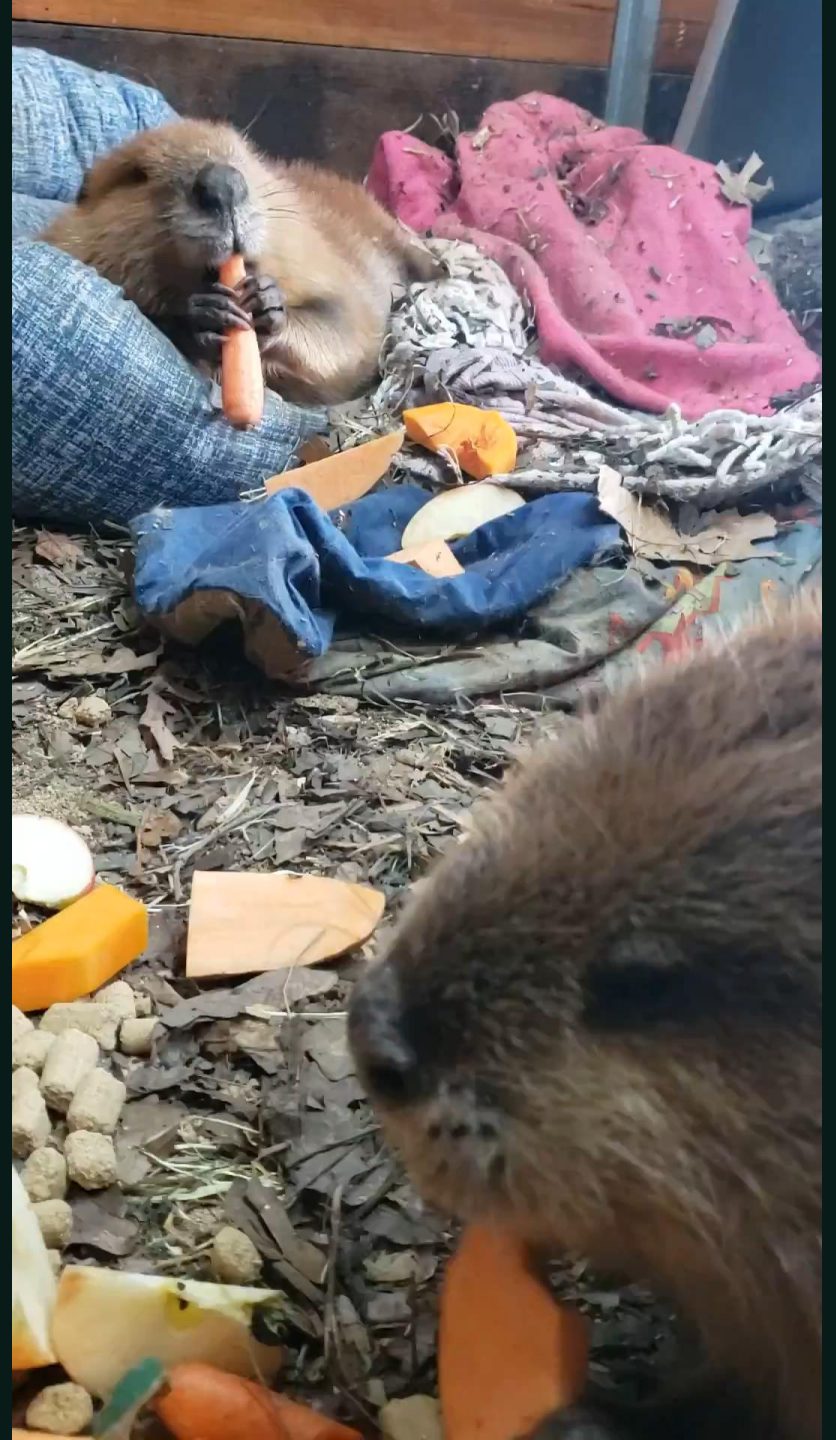


Entrance to sleeping chamber

Inside beaver lodge



BB & JJ
eating!!



Beaver Feet





JJ
grooming!



JJ



BB &
baby



Babies!!



Release Criteria

- Must have permission from property owner
- DO not release where others already exist
- Secluded
- Fresh water source
- Ample food supply





Wildlife Stewards & Advocate

- ▶ Teach kids to respect all wildlife – leave it where you found it, unless harmed.
- ▶ HELPING injured/sick/orphaned WILDLIFE is a lifestyle!!



Thank you

Ruby Davis

& BB!!

