

A close-up photograph of a squirrel perched on a mossy tree branch. The squirrel has a bushy, dark tail and is looking towards the right. The background is a soft, out-of-focus green, suggesting a forest setting. The text 'SQUIRRELS 201' is overlaid in white, bold, sans-serif font in the upper right quadrant.

# SQUIRRELS 201

YOUR SQUIRREL TOOLBOX

# ADMISSION FORMS RECORD KEEPING

- Proper record keeping is one of many difficult tasks to complete and keep up-to-date. This is especially true during the peak of baby season.
- NCWRC can come to you at any time and inspect your records.
- How long do you think that you need to maintain these records?
  - 1 year after you release the squirrel?
  - 2 years from the admission of the squirrel?

# What do your records need to include?

- Date of admission
- Species
- How you got the animal
- Diagnosis of the problem in detail (why was the squirrel removed from the environment)
- Treatment records, including weights, what/when drugs were administered, diet, any issues
- Final disposition (released, euthanized, etc.)

## SECTION .1400 – WILDLIFE CAPTIVITY AND REHABILITATION

# 15A NCAC 10H .1401 DEFINITIONS AND GENERAL REQUIREMENTS FOR CAPTIVITY LICENSES

<https://www.ncwildlife.org/Licensing/Other-Licenses-Permits/Wildlife-Rehabilitation-License#6629587-license-restrictions-rules-and-conditions>

# EUTHANASIA: THE INDUCTION OF DEATH WITH MINIMAL PAIN, STRESS, OR ANXIETY (NWRA)

Euthanasia is the “elephant in the room” for any rehabber regardless of how long they have been a rehabilitator. How they handle the subject will determine how successful they are!



[This Photo](#) by Unknown Photographer is licensed under [CC BY-NC-ND](#)

I asked the WRNC Board of Directors to give me their thoughts about euthanasia and how it relates to our work...

A wildlife rehabilitator should acknowledge limitations and enlist the assistance of a veterinarian and other trained professionals when appropriate. (HSUS)

Euthanasia is the most difficult decision for the caregiver. It gets harder the longer you keep the wild animal. This is often when hoarding begins. You can't put it down and you can't release it!

Cindy Bailey, Wildlife Welfare, WRNC

Euthanasia is not a bad thing for wildlife that cannot be released back into the wild. They are wild animals so they do not like being confined, especially when it comes time to procreate. They do not enjoy being kept in a cage or confined to a house and will show signs of stress when kept in captivity.

Carla Johnson, WRNC President, Humane Solutions

It's very hard not to point out to people who are keeping animals way too long and way too sick that they are not helping anyone but themselves.

Melisse Hopping, WRNC

They are all beautiful creatures and the decision to euthanize should never be easy or taken lightly.

Mathias Engelmann, WRNC, Carolina Raptor Center

...when you feel you are becoming too emotionally attached to a patient and no longer can remain objective about the care, transfer it to someone else to make the decision.

Toni O'Neil, WRNC, Possumwood Acres

The more we talk about the difficult parts of rehabilitation, especially to folks who are starting out, the more they can feel free to ask questions and share concerns.

Paige Person, Wildlife Welfare, WRNC

**We cannot save every wildlife baby.**

Ann Rogers, Wildlife Welfare, WRNC

# Hoarding...



## Medical Concerns



[This Photo](#) by Unknown Author is licensed under [CC BY-SA](#)



[This Photo](#) by Unknown Author is licensed under [CC BY-NC](#)



# MEDICAL CONCERNS FOR SQUIRREL REHABBERS

- **Hypothermia** results in a body temperature that is below normal.

- **How?** soiled or wet fur  
exposure to wind  
lying on a cold surface (ice, snow)

- **What could it look like?**

Shivering, sleepy, poor coordination, decrease in alertness and responsiveness,

- What now???

- **Hyperthermia** (also sometimes called heatstroke) results in a high body temperature.

- **How?** Exposure to hot surface for long period of time and/or exposure to sun for long period of time

- **What could it look like?**

Panting, open mouth breathing, dehydration, staggering, collapsed, dark urine

- What now???

## Treatments for Hypo/Hyperthermia

If possible, seek veterinarian care *immediately* if condition is severe!

Cool or warm squirrel s-l-o-w-l-y, bringing the temperature back to normal. You can use warm fleece, heating pads, warm water baths, etc. For bringing temperature down, a cool water bath, a fan to circulate cool air, or cool refrigerated fleece may be used. Never use a blow dryer to warm or dry the squirrel. Never use ice in a water bath to cool a squirrel. Also, remember you don't want to scare the squirrel any more than you have already by just having it in captivity!

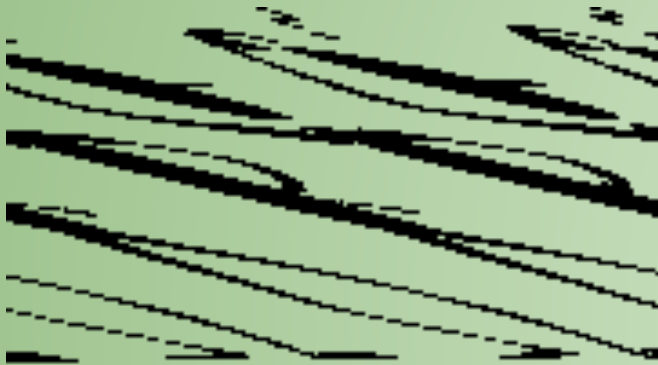
It is advisable to warm or cool the chest and abdomen *first* to increase/decrease the core temperature.

**DO NOT, DO NOT, DO NOT OFFER FORMULA OR FOOD UNTIL CORE TEMPERATURE IS RESTORED TO NORMAL!**

If you are lucky enough to have a veterinarian that will help you with squirrels, take advantage of observing them while they work. Take note of how they warm or cool to get the squirrel back to a normal temperature, learning new techniques from them.

# HYDRATION

Nearly all injured, ill, or orphaned animals arrive to us significantly dehydrated. Do we need to get it to the veterinarian OR is this something that we as rehabbers can treat effectively ourselves?



This Photo by Unknown Author is licensed under [CC BY-NC-ND](#)

This Photo by Unknown Author is licensed under [CC BY-NC](#)

What do you think that proper hydration requires as far as knowledge???

You need to feel comfortable with hydration. Restoring the squirrel's hydration can mean the difference between **life** and **death**.

You will need to know:

- \*the signs and symptoms of dehydration;
- \*conditions that can cause dehydration;
- \*how to calculate the needed fluid volume;
- \*how to choose the appropriate fluid type;
- \*how to administer the fluid at the correct rates

# SIGNS AND SYMPTOMS OF DEHYDRATION

- DRY MUCOUS MEMBRANE (MOUTH, EYES, NOSE)
- CONCENTRATED AND/OR DECREASED URINATION
- TENTING OF SKIN
- SUNKEN EYES
- DEPRESSION
- WEAKNESS
- LACK OF APPETITE



# CONDITIONS THAT CAN CAUSE DEHYDRATION

- Injury
- Illness
- Lack of available water
- Starvation
- Diarrhea
- Vomiting

# WHAT ARE THE FLUID VOLUMES AND HOW DO I CALCULATE THE NEED?

DAILY FLUID VOLUMES ARE SEPARATED INTO TWO DIFFERENT VOLUMES:

MAINTENANCE VOLUME AND HYDRATION VOLUME  
\*CC'S OF FORMULA + CC'S OF REHYDRATION FLUID PER DAY\*

SO WE KNOW THE DIFFERENT FLUID VOLUMES,  
HOW DO WE KNOW WHAT TO GIVE?



# CHOOSING WHAT FLUIDS AND HOW?

## TYPES

- PEDIALYTE
- LACTATED RINGERS
- ELECTROSTAT (FoxValley)
- HOMEMADE SOLUTION
- GATORAID

## HOW TO ADMINISTER

- ORAL
- MIXED WITH FORMULA
- ADDED TO FORMULA
- SUB Q

What is wrong with the Administer Column?

What is missing???

WHAT ARE WE GOING TO FEED  
AND HOW MUCH?

# WHAT DO WE NEED IN OUR TOOLBOX?



[This Photo](#) by Unknown Author is licensed under [CC BY-SA](#)

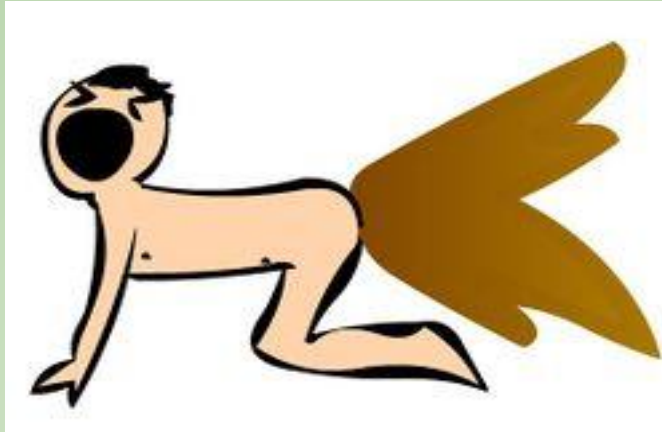
# MALOCCLUSION

- What is it?
- How does it present?
- What do we do?









[This Photo](#) by Unknown Author is licensed under [CC BY-SA-NC](#)

# DIARRHEA

WHY AND WHAT DO WE  
DO ABOUT IT???

Diarrhea has many potential causes, some as simple as: the formula is not Mommy's milk, to as complex as: changes in the formula by the manufacturer.

This past year was tough with Pet Ag's Esbilac Powder.

**DON'T JUMP TO  
CONCLUSIONS!**

**DIET CAUSES**

**HOUSEKEEPING  
CAUSES**

**MEDICAL CAUSES**

## DIET

- OVERFEEDING
- ABRUPT  
CHANGES IN  
FORMULA

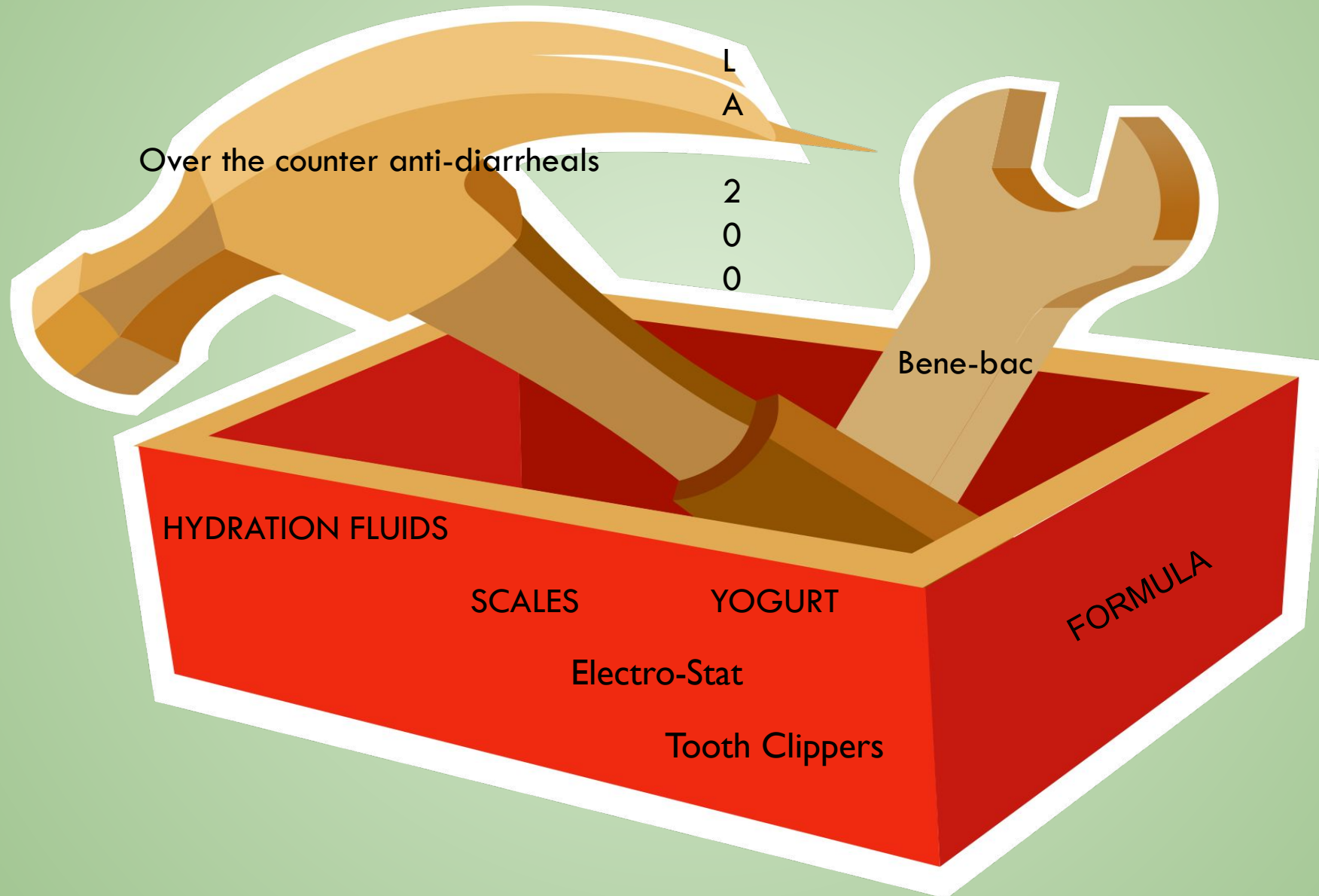
## HOUSEKEEPING

- DIRTY  
FEEDING  
TOOLS
- DIRTY  
BEDDING

## MEDICAL

- LACTOSE  
INTOLERANCE
- STRESS

# WHAT IS IN THE DIARRHEA TOOLBOX?



**MBD**

# Metabolic Bone Disease

MBD is most often seen in growing, young squirrels.

MBD is gradual in the onset of symptoms and gradual in improving.

If the squirrel is inadequate in its intake of \_\_\_\_\_, the body removes it from the bones.

What are some of the causes?

What are some of the possible treatments?

What does a balanced diet look like?



# IN THE WILD, SQUIRRELS EAT...

FLOWERS

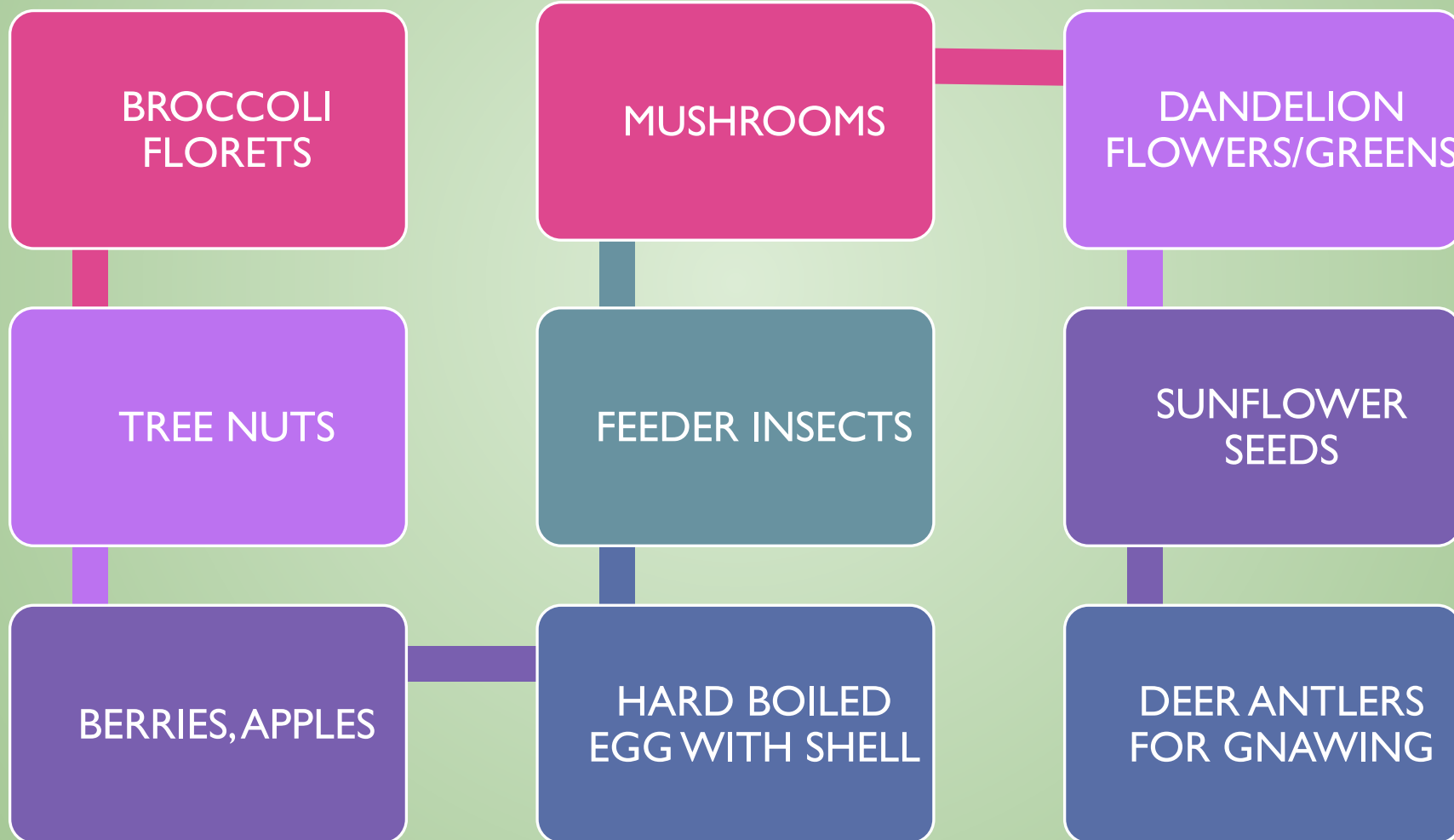
HARDWOOD  
NUTS

**ACORNS**

FRUITS, BERRIES,  
SEEDS

BUDS, YOUNG LEAVES, SAP,  
FUNGI, INSECTS, DANDELION  
GREENS

# IN CAPTIVITY, SQUIRRELS SHOULD BE EATING...



# CAT ATTACKS



# CAT ATTACKS:

- What are some of the things we need to worry about?
- What symptoms should we look for?
  - What do we do?

CONCERNS

SYMPTOMS

TO DO



*Serving Pink Lemonade*

Tell me what should be in your toolbox now?

ANTIMICROBIAL OR ANTISEPTIC WASH

VETERINARIAN

CHLORHEXIDENE/NAVASAN

BETADYNE

HYDROGEN PEROXIDE

SALINE SOLUTION

BANDAGING MATERIALS

VETERICYN

# SQUIRREL POX



What is squirrel pox?

How do I identify it?

How do I treat it?





# Genital Nursing

- What is genital nursing?
- What can we do about it?
- How can we prevent it?

**BLOAT**

THIS IS WHAT IT LOOKS LIKE!



\*\*\*Ouch!!!\*\*\*

NOW WHAT DO WE DO **ABOUT** IT?

WHAT **CAUSES** IT?

LACTASE  
DROPS

HEATING  
PAD

SUB Q FLUIDS





# OVER-WINTERING IN NC





**WHAT** IS THE PURPOSE OF  
OVER-WINTERING?

HOW DO YOU DECIDE, WHAT  
FACTORS?

**CAGING?**









**SAFETY SAFETY SAFETY**

WHAT IS YOUR FIRST IMPRESSION OF THIS SITUATION?







## ADMISSION FORMS RECORD KEEPING

- Proper record keeping is one of many difficult tasks to complete and keep up-to-date. This is especially true during the peak of baby season.
- NCWRC can come to you at any time and inspect your records.
- How long do you think that you need to maintain these records?
  - 1 year after you release the squirrel?
  - 2 years from the admission of the squirrel?

# What do your records need to include?

- Date of admission
- Species
- How you got the animal
- Diagnosis of the problem in detail (why was the squirrel removed from the environment)
- Treatment records, including weights, what/when drugs were administered, diet, any issues
- Final disposition (released, euthanized, etc.)

## SECTION .1400 – WILDLIFE CAPTIVITY AND REHABILITATION

# 15A NCAC 10H .1401 DEFINITIONS AND GENERAL REQUIREMENTS FOR CAPTIVITY LICENSES

<https://www.ncwildlife.org/Licensing/Other-Licenses-Permits/Wildlife-Rehabilitation-License#6629587-license-restrictions-rules-and-conditions>

# EUTHANASIA: THE INDUCTION OF DEATH WITH MINIMAL PAIN, STRESS, OR ANXIETY (NWRA)

Euthanasia is the “elephant in the room” for any rehabber regardless of how long they have been a rehabilitator. How they handle the subject will determine how successful they are!



[This Photo](#) by Unknown Photographer is licensed under [CC BY-NC-ND](#)

I asked the WRNC Board of Directors to give me their thoughts about euthanasia and how it relates to our work...

A wildlife rehabilitator should acknowledge limitations and enlist the assistance of a veterinarian and other trained professionals when appropriate. (HSUS)

Euthanasia is the most difficult decision for the caregiver. It gets harder the longer you keep the wild animal. This is often when hoarding begins. You can't put it down and you can't release it!

Cindy Bailey, Wildlife Welfare, WRNC

Euthanasia is not a bad thing for wildlife that cannot be released back into the wild. They are wild animals so they do not like being confined, especially when it comes time to procreate. They do not enjoy being kept in a cage or confined to a house and will show signs of stress when kept in captivity.

Carla Johnson, WRNC President, Humane Solutions

It's very hard not to point out to people who are keeping animals way too long and way too sick that they are not helping anyone but themselves.

Melisse Hopping, WRNC

They are all beautiful creatures and the decision to euthanize should never be easy or taken lightly.

Mathias Engelmann, WRNC, Carolina Raptor Center

...when you feel you are becoming too emotionally attached to a patient and no longer can remain objective about the care, transfer it to someone else to make the decision.

Toni O'Neil, WRNC, Possumwood Acres

The more we talk about the difficult parts of rehabilitation, especially to folks who are starting out, the more they can feel free to ask questions and share concerns.

Paige Person, Wildlife Welfare, WRNC

**We cannot save every wildlife baby.**

Ann Rogers, Wildlife Welfare, WRNC

# Hoarding...



## Medical Concerns



[This Photo](#) by Unknown Author is licensed under [CC BY-SA](#)



[This Photo](#) by Unknown Author is licensed under [CC BY-NC](#)



# MEDICAL CONCERNS FOR SQUIRREL REHABBERS

- **Hypothermia** results in a body temperature that is below normal.
  - **How?** soiled or wet fur  
exposure to wind  
lying on a cold surface (ice, snow)
  - **What could it look like?**  
Shivering, sleepy, poor coordination, decrease in alertness and responsiveness,
  - **What now???**

- **Hyperthermia** (also sometimes called heatstroke) results in a high body temperature.
  - **How?** Exposure to hot surface for long period of time and/or exposure to sun for long period of time
  - **What could it look like?**  
Panting, open mouth breathing, dehydration, staggering, collapsed, dark urine
  - **What now???**

## Treatments for Hypo/Hyperthermia

If possible, seek veterinarian care *immediately* if condition is severe!

Cool or warm squirrel s-l-o-w-l-y, bringing the temperature back to normal. You can use warm fleece, heating pads, warm water baths, etc. For bringing temperature down, a cool water bath, a fan to circulate cool air, or cool refrigerated fleece may be used. Never use a blow dryer to warm or dry the squirrel. Never use ice in a water bath to cool a squirrel. Also, remember you don't want to scare the squirrel any more than you have already by just having it in captivity!

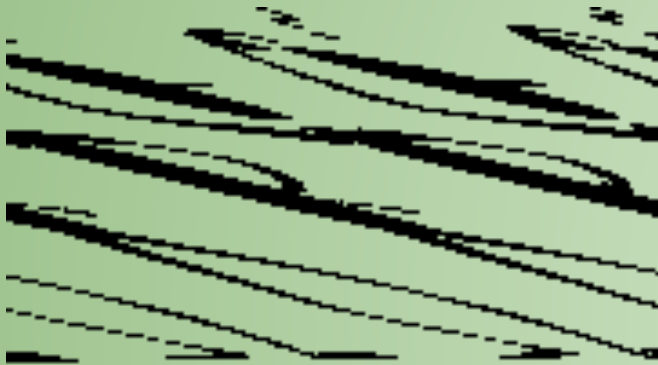
It is advisable to warm or cool the chest and abdomen *first* to increase/decrease the core temperature.

**DO NOT, DO NOT, DO NOT OFFER FORMULA OR FOOD UNTIL CORE TEMPERATURE IS RESTORED TO NORMAL!**

If you are lucky enough to have a veterinarian that will help you with squirrels, take advantage of observing them while they work. Take note of how they warm or cool to get the squirrel back to a normal temperature, learning new techniques from them.

# HYDRATION

Nearly all injured, ill, or orphaned animals arrive to us significantly dehydrated. Do we need to get it to the veterinarian OR is this something that we as rehabbers can treat effectively ourselves?



This Photo by Unknown Author is licensed under [CC BY-NC-ND](#)

This Photo by Unknown Author is licensed under [CC BY-NC](#)

What do you think that proper hydration requires as far as knowledge???

You need to feel comfortable with hydration. Restoring the squirrel's hydration can mean the difference between **life** and **death**.

You will need to know:

- \*the signs and symptoms of dehydration;
- \*conditions that can cause dehydration;
- \*how to calculate the needed fluid volume;
- \*how to choose the appropriate fluid type;
- \*how to administer the fluid at the correct rates

# SIGNS AND SYMPTOMS OF DEHYDRATION

- DRY MUCOUS MEMBRANE (MOUTH, EYES, NOSE)
- CONCENTRATED AND/OR DECREASED URINATION
- TENTING OF SKIN
- SUNKEN EYES
- DEPRESSION
- WEAKNESS
- LACK OF APPETITE



# CONDITIONS THAT CAN CAUSE DEHYDRATION

- Injury
- Illness
- Lack of available water
- Starvation
- Diarrhea
- Vomiting

# WHAT ARE THE FLUID VOLUMES AND HOW DO I CALCULATE THE NEED?

DAILY FLUID VOLUMES ARE SEPARATED INTO TWO DIFFERENT VOLUMES:

MAINTENANCE VOLUME AND HYDRATION VOLUME  
\*CC'S OF FORMULA + CC'S OF REHYDRATION FLUID PER DAY\*

SO WE KNOW THE DIFFERENT FLUID VOLUMES,  
HOW DO WE KNOW WHAT TO GIVE?



# CHOOSING WHAT FLUIDS AND HOW?

## TYPES

- PEDIALYTE
- LACTATED RINGERS
- ELECTROSTAT (FoxValley)
- HOMEMADE SOLUTION
- GATORAID

## HOW TO ADMINISTER

- ORAL
- MIXED WITH FORMULA
- ADDED TO FORMULA
- SUB Q

What is wrong with the Administer Column?

What is missing???

WHAT ARE WE GOING TO FEED  
AND HOW MUCH?

# WHAT DO WE NEED IN OUR TOOLBOX?



[This Photo](#) by Unknown Author is licensed under [CC BY-SA](#)

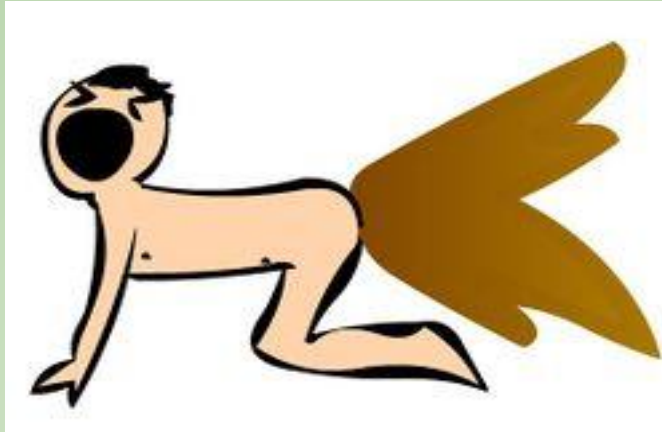
# MALOCCLUSION

- What is it?
- How does it present?
- What do we do?









[This Photo](#) by Unknown Author is licensed under [CC BY-SA-NC](#)

# DIARRHEA

WHY AND WHAT DO WE  
DO ABOUT IT???

Diarrhea has many potential causes, some as simple as: the formula is not Mommy's milk, to as complex as: changes in the formula by the manufacturer.

This past year was tough with Pet Ag's Esbilac Powder.

**DON'T JUMP TO  
CONCLUSIONS!**

**DIET CAUSES**

**HOUSEKEEPING  
CAUSES**

**MEDICAL CAUSES**

## DIET

- OVERFEEDING
- ABRUPT  
CHANGES IN  
FORMULA

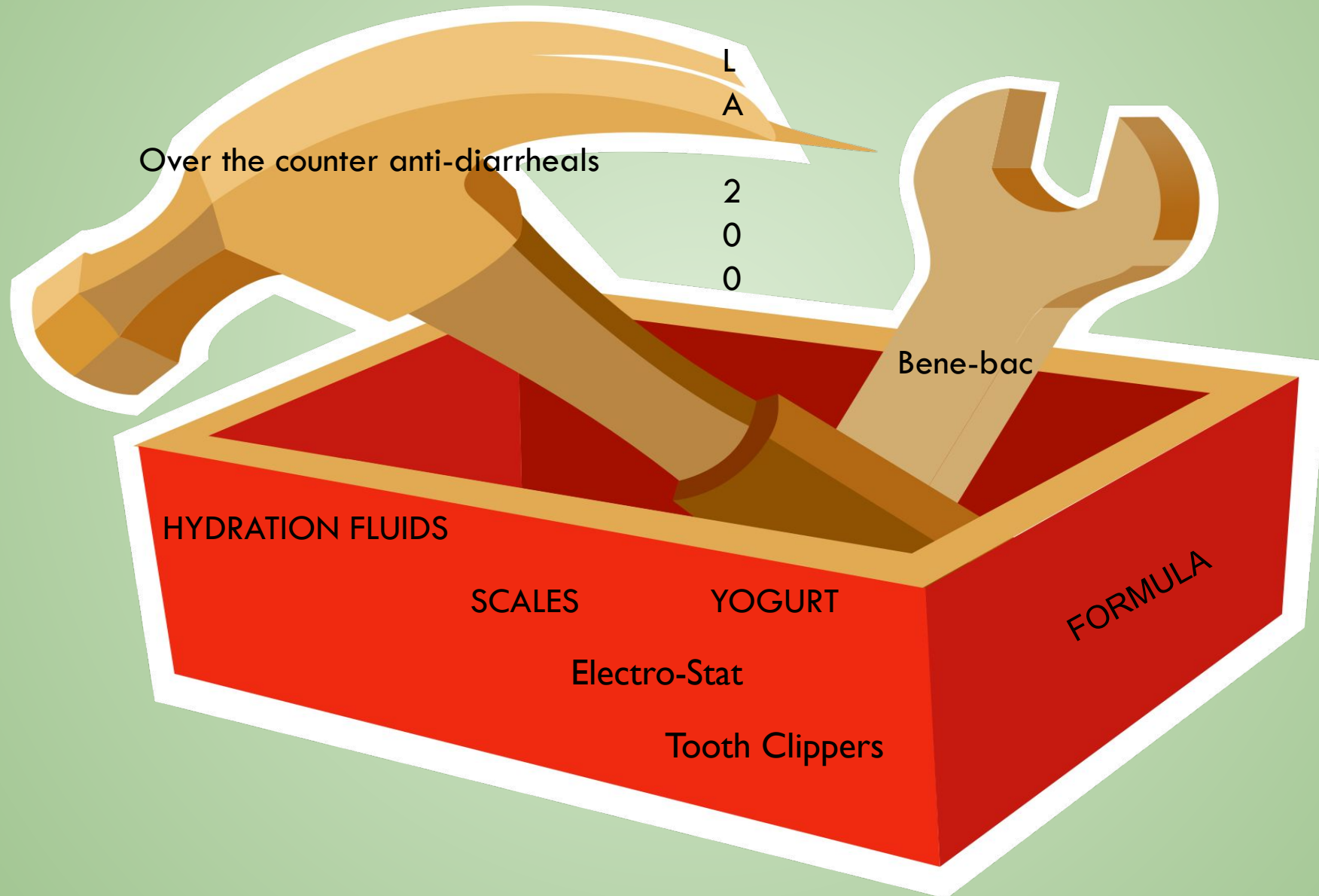
## HOUSEKEEPING

- DIRTY  
FEEDING  
TOOLS
- DIRTY  
BEDDING

## MEDICAL

- LACTOSE  
INTOLERANCE
- STRESS

# WHAT IS IN THE DIARRHEA TOOLBOX?



**MBD**

# Metabolic Bone Disease

MBD is most often seen in growing, young squirrels.

MBD is gradual in the onset of symptoms and gradual in improving.

If the squirrel is inadequate in its intake of \_\_\_\_\_, the body removes it from the bones.

What are some of the causes?

What are some of the possible treatments?

What does a balanced diet look like?



# IN THE WILD, SQUIRRELS EAT...

FLOWERS

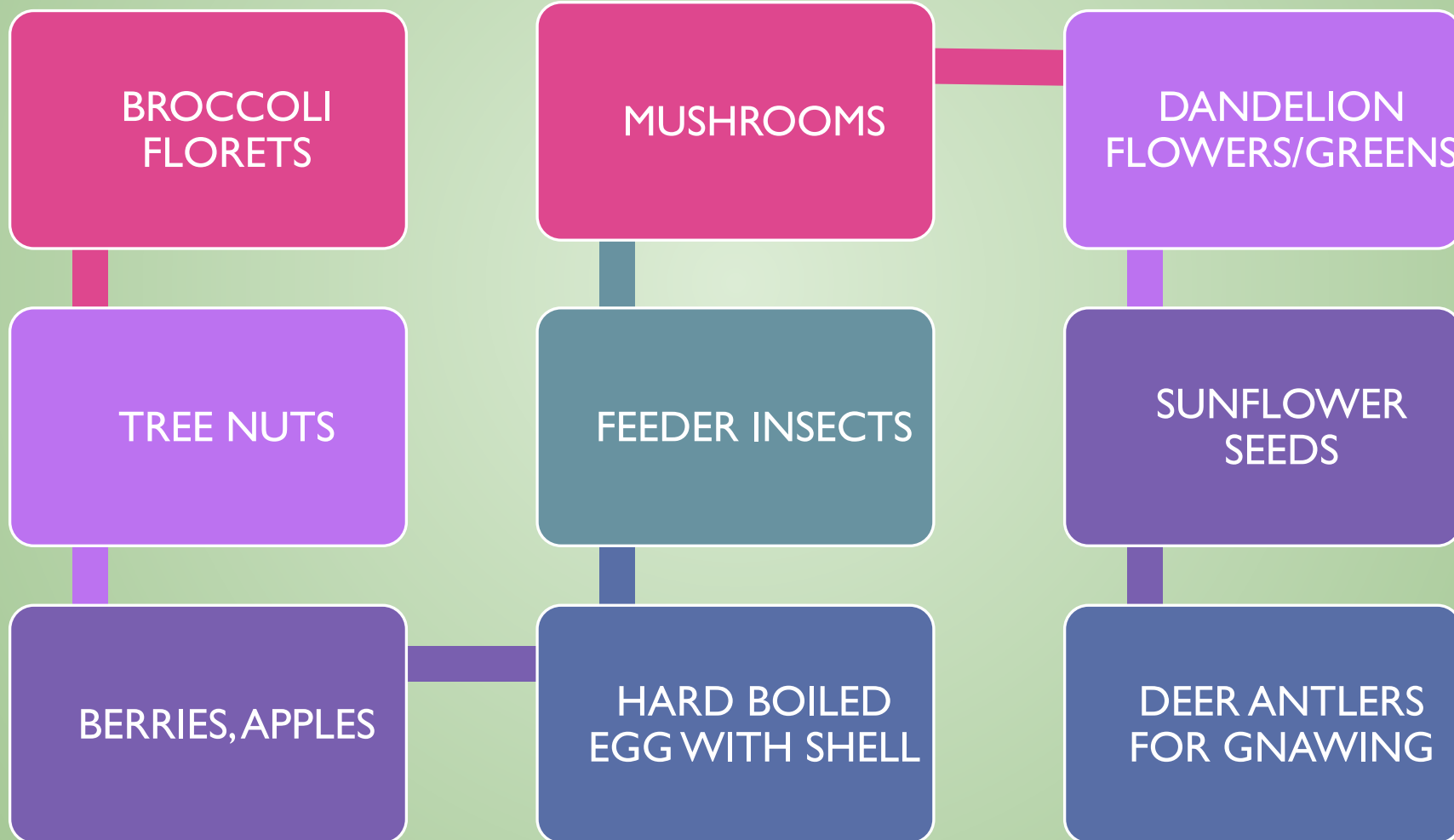
HARDWOOD  
NUTS

**ACORNS**

FRUITS, BERRIES,  
SEEDS

BUDS, YOUNG LEAVES, SAP,  
FUNGI, INSECTS, DANDELION  
GREENS

# IN CAPTIVITY, SQUIRRELS SHOULD BE EATING...



# CAT ATTACKS



# CAT ATTACKS:

- What are some of the things we need to worry about?
- What symptoms should we look for?
  - What do we do?

CONCERNS

SYMPTOMS

TO DO



*Serving Pink Lemonade*

Tell me what should be in your toolbox now?

ANTIMICROBIAL OR ANTISEPTIC WASH

VETERINARIAN

CHLORHEXIDENE/NAVASAN

BETADYNE

HYDROGEN PEROXIDE

SALINE SOLUTION

BANDAGING MATERIALS

VETERICYN

# SQUIRREL POX



What is squirrel pox?

How do I identify it?

How do I treat it?





# Genital Nursing

- What is genital nursing?
- What can we do about it?
- How can we prevent it?

**BLOAT**

THIS IS WHAT IT LOOKS LIKE!



\*\*\*Ouch!!!\*\*\*

NOW WHAT DO WE DO **ABOUT** IT?

WHAT **CAUSES** IT?

LACTASE  
DROPS

HEATING  
PAD

SUB Q FLUIDS





# OVER-WINTERING IN NC





**WHAT** IS THE PURPOSE OF  
OVER-WINTERING?

HOW DO YOU DECIDE, WHAT  
FACTORS?

**CAGING?**









**SAFETY SAFETY SAFETY**

WHAT IS YOUR FIRST IMPRESSION OF THIS SITUATION?





