

## Changes in Behavior

- Fall has been a time of increased activity
  - Browsing maybe eating different plants
  - Storing up food for the winter
  - Pacing and getting into things!
  - Digging
  - Wanting to come inside
- As Fall proceeds, your tortoise gets ready for brumation:
  - Basks more because the weather is cooler
  - Comes out less and less
  - Eats less

# Special fall tips

- Tortoise may fall on its back and struggle to turn over. May be foaming at the mouth
  - Place in shade to rest
  - Hose off with cool water
  - Take to vet if it doesn't recover in an hour
- Cactus pears can be a tasty treat
- Free care for tortoise eye problems in LV by Dr Christopher Smith at Animal Emergency Hospital on W Charleston
- Read TG Care Sheets to be know what's available and to be ready for emergencies

# Why do tortoises brumate?

- It's their adaptation to the cold
- They need a body temperature of 85 degrees to fulfill tortoise functions like looking for food, using their food, or mating
- When it's cold, they need another strategy brumation
- Sulcata and Leopard tortoises, from warmer climates, do not brumate

## What is brumation?

- Definition: Brumation is winter dormancy in coldblooded animals with backbones like reptiles and amphibians
- In late September and October, tortoises undergo physiological changes that are independent of body temperature
- Greatly reduced metabolism-Its heart rate and breathing slow dramatically
- The tortoise is programmed to sleep and to not eat

# Preparing for brumation

- Over the winter, your tortoise will lose water from breathing and calories from just being. It's important that its body be well stocked for this.
- Feeding Let your tortoise decide how much Food may take as long as one month to digest—don't push food near brumation
  - Just as in early spring, allow your tortoise to browse

#### Soaking

Place in a shallow pan of lukewarm water several times before brumation

# Soaking

 Shallow pan of lukewarm water



 Tortoise tells you when it's done!



# Brumation WITHIN the natural range

- When?
- Where?
- How long?



# When will my tortoise brumate?

Each tortoise has its own brumation schedule.

- Your tortoise will decide when its time
- It will come out less and less often
- It will eat less and less



## Where should my tortoise brumate?

- In its outdoor, well-insulated burrow
- Temperature should be between 35 and 50 degrees F for optimum brumation
- A snug, well-insulated burrow allows the tortoise to:
  - Retain most of its moisture
  - Stay the right temperature so it does not use up its precious resources

# What if my tortoise brumates in the closet or under the bed?

- It loses moisture and precious calories all winter due to the too-warm temperature
- A large tortoise can afford the losses more than a small one, that could easily die

 If a tortoise must brumate inside, put it in a box in the garage and monitor it occasionally (Details on the website)

## How long will my tortoise brumate?

Only your tortoise knows it will go into and come out of brumation.

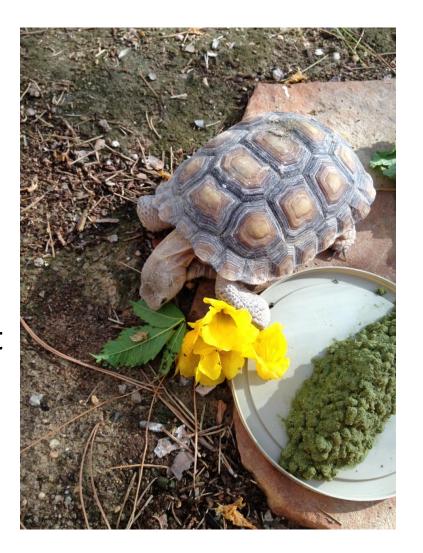
- Most tortoises emerge between early March and late April, and even into May.
- Note the date for future reference. Your tortoise will emerge at about the same date each year.

## Brumation OUTSIDE the natural range

When?

• Where?

- How long?
   The same at within the natural range
- This is the part that is different



## Brumation in a cold climate

- Desert tortoises live quite happily in northern Nevada and other spots outside the natural range. However, the custodian must:
  - Carefully watch the weather in spring and fall to take special care on nights colder than about 40 degrees.
  - Bring the tortoise inside on those cold nights, or cover the burrow opening—take it back out in the daytime if weather permits
  - Brumate the tortoise in a box in a garage at 35-50 degrees

#### Winter Care - Wind

- Pick up litter near burrow opening
- Preserve warmth by reducing air circulation:
  - If we have a cold, windy
     January, place a ball of
     newspaper loosely in
     the burrow entrance.
  - Remove when the cold snap is over



### Winter Precautions - Rain

- Rain Days of gentle rain may produce flooding
  - Check inside of burrow for flooding
    - Use a mirror during the day
    - Use a flashlight at night
  - If a tortoise is inside a flooded burrow, or even if the burrow is muddy ----dig it up!

# What if the burrow collapses?

- If the burrow collapses, dig it up!
- Put the tortoise in a box in the garage.
- Leave the burrow open to dry

(takes a long time to dry)

- When dry, put the burrow back together or build a new one
- Gently slide the tortoise into the burrow when it is dry



# Rainy Winter Care

 Cover the burrow in a big rainstorm - remove the cover afterward



## Medical considerations

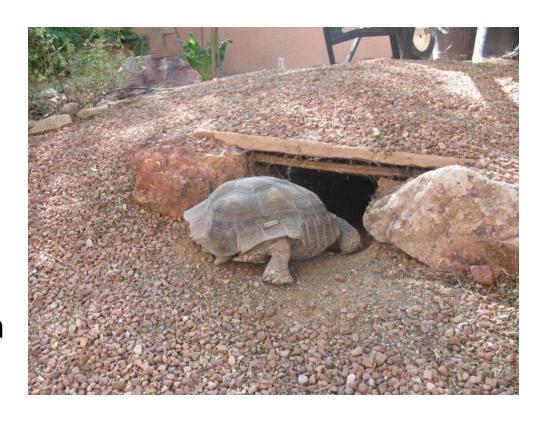
- If a tortoise shows signs of URDS (drippy noise) in fall:
  - It may be too late in the season to treat it
  - Mild symptoms may disappear during brumation
- If your tortoise is coming out continually during winter, it is probably sick and needs a trip to the vet
- A sick tortoise may need to be kept awake ask the vet

# Should I feed my tortoise if it comes out in January or February?

- No. The tortoise is still very cold and can't metabolize the food
- It may come out when it rains, too, even if it's quite cold. That's normal. Tortoises survive by getting rain when they can.
- Let the tortoise go back in the burrow on its own

### Fall Farewell

- Soak tortoise
- Let your tortoise decide how much to eat.
  - May eat some or not much at all
- Mark day last seen



# Emergence



This Q-Tip barrier is useful in spring to know if your tortoise has emerged

# Spring Welcome

- Emergence: Mid March to April or even May
- Tortoise comes out to bask
- Soak tortoise in water after a few days
- May come out and stay out on patio or under a bush.
   Outside temp is warmer than in burrow
- Offer MegaDiet RF when browsing begins
- And enjoy!

