



WRNC Training

# Basic Wildlife Rehabilitation Course

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## Squirrels



Not really “gray”  
 Hair bands of brown, white, black  
 Tips of guard hairs white  
 Some distinctly reddish  
 Paws rusty brown to almost white  
 Belly usually white to buff

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## Squirrels



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## Squirrels


Two molts a year  
 Spring: starts head to flanks  
 Fall: starts flanks to head  
 Tails: once a year, late summer



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## Squirrels




Rodents  
 2 sets open rooted incisors  
 Powerful jaws  
 20-22 pre molars/molars

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## Squirrels



Nests are called dreys  
 Winter dreys more substantial  
 Exterior: twigs, leaves  
 Lined w/moss, bark, fur, feathers,

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 **Squirrels**



Tree cavities preferred in winter months



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 **Squirrels  
Newborn - 1 week**




Pink, hairless first 3 days  
Visible whiskers  
Ears tight against head



Eyes closed & bulging  
Approximately 15 gm at birth

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 **Squirrels**

Usually two litters a year (Spring & Fall)  
44-45 day gestation  
2-6 blind, naked babies (average of 3)  
High mortality rate 1<sup>st</sup> year  
Average life span in wild 7-8 years

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 **Squirrels  
1-2 weeks**




Grayish pigment develops  
Ears flaps begin to loosen  
Eye slit becomes defined  
Fur begins to erupt on nose


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 **Squirrels**


**Stages of Development**

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 **Squirrels  
2-3 weeks**



Increased hair growth  
Belly still bare, few blond hairs



Tail – flat silver tipped hairs  
Very slick and slippery

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**Squirrels  
2-3 weeks**



Eye slits more developed



Ears flaps loosen

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**Squirrels  
4-5 weeks**


Thick coat all over body  
Eyes open  
Still "sleepy eyed"



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**Squirrels  
3-4 weeks**




Coat more luxurious  
Silky hair on belly  
Ears open and developed

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**Squirrels  
4-5 weeks**




Upper incisors erupt  
More active but unsteady  
Still sleeps most of time

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**Squirrels  
3-4 weeks**



Eye slits well defined  
More aware of surroundings  
Lower incisors erupt

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**Squirrels  
5-6 weeks**




Tail starting to "fluff"  
More active and alert  
Grasping food  
Still unsteady

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### Squirrels 6-9 weeks


Able to balance on haunches  
Coordination greatly improved  
Able to curl tail curl over back  
Molars erupt  
Able to eat solid foods



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### Squirrels Adult



Weight: 338-750 gm (12-16 oz)  
Body 385-530 mm (16 <sup>7</sup>/<sub>8</sub> -21")  
Tail: 150-200 mm (8.25-10")  
Hind foot: 53-76 mm (2-3")

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### Squirrels 9+ weeks



Fully furred  
Increased agility and muscle strength  
Weaning begins  
Most of calories coming from solids

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### Squirrels

## General Care

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### Squirrels 9+ weeks

Tail banded  
About 75% adult size  
Able to crack nuts




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### Squirrels

Always keep wild animals away from sounds and smells of humans and domestic animals  
Limit the number of different caretakers, preferably only one person  
Keep predator/prey species isolated from each other


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## Squirrels

- Can create surrogate litters with unrelated orphans
- Should be of similar developmental level
- Quarantine new intakes minimum 48 hrs
- Can add a lone squirrel prior to moving out to pre-release caging

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## Squirrels

### Feeding

	% Solids	% Fat	% Protein	% Carbo
Barker, et al.	23.2	11.3	8.4	1.6
Jeness and Sloan	24.4	7.0	4.8	4.1
$\frac{1}{2}$ Esbilac + $\frac{1}{2}$ Milk + H <sub>2</sub> O	21.7	10.5	7.3	2.3
$\frac{1}{2}$ Esbilac + $\frac{1}{2}$ Cream + H <sub>2</sub> O	20.6	12.5	4.5	2.5


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## Squirrels

- Wash hands after handling and between litters to minimize chance of disease transmission
- Wear latex gloves (recommended)
- Inspect and treat for ectoparasites upon admission
- Be sure to recheck for newly hatched parasites regularly

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## Squirrels

### Formulas

~~1 part powder: Esbilac  
1 part **whipping cream**  
1 part water~~

~~Evaporated milk      Scalded Milk  
Egg yolk                      Vitamin E  
Karo Syrup~~

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## Squirrels

### Feeding

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## Squirrels

### < 3 weeks



+
H<sub>2</sub>O

1 part
2 parts

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**Squirrels**  
> 3 weeks




1/2 part + 1/2 part + H<sub>2</sub>O  
2 parts

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**Squirrels**  
**Amount to Feed**


Max. stomach capacity 5-7% BW  
Eyes closed 5% max  
Eyes open can increase to 7% (if tolerated)  
Check abdomen for "milk line"  
Weight in grams x .05  
i.e. 90 gm x .05= 4.5 cc



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**Squirrels**  
> 4 weeks




1 part + H<sub>2</sub>O  
2 parts


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**Squirrels**




Temperature of formula is important  
Many squirrels will refuse if not warm enough  
Use feeding syringe w/nipple – O-rings are best  
Syringes provide control so frantic eaters don't aspirate



2 box method helps keep track of which squirrels have been fed


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**Squirrels**  
**Formula Preparation & Storage**

Mix fresh daily – keep refrigerated  
Heat only amount for feeding- discard leftovers  
Warm over hot water, don't boil or microwave  
Always test temperature  
Use separate feeding implements for each litter


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**Squirrels**  
**Aspiration**

Use syringes NOT bottles  
Rather than depressing, may have to hold plunger to limit flow  
Be prepared with bulb syringe if needed  
Frantic nursers may do better if increase # feedings  
ALWAYS watch that baby is actively nursing

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## Squirrels

### Aspiration

In emergency can use “flinging method”  
Must be careful to support entire body  
Should be a smooth vertical motion  
Shaking or jerky movements can cause brain damage


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## Squirrels



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## Squirrels

### Frequency of Feeding

<2 weeks q2-2.5 hrs or 6-8x/day  
2-4 weeks q3-4 hrs or 5-6x/day  
4-6 weeks q5-6 hrs or 4-5x/day  
6-8 weeks q6-8 hrs or 3-4x/day  
8+ gradually decrease as solids increase

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## Squirrels

### Introducing Solids

Once eyes open begin introducing solids  
Add a few pieces of rat chow or monkey biscuits  
Can soak monkey chow to soften  
Sweet potato and apple in very small quantities  
Don't offer nuts until eating chow

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## Squirrels

### Stimulation

MUST be stimulated to urinate  
Stimulate at each feeding until eyes opened  
Use damp cotton ball or tissue  
Continue to stimulate until observe voiding on own

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## Squirrels

### Weaning to Adult Diet

90% rat chow or monkey biscuits  
10% variety of foods:  
Banana Apple Broccoli  
Oranges Grapes Squash  
Mealworms Nuts Seeds  
Sweet Potato

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## Squirrels

### Weaning to Adult Diet


Natural foods such as:

Buds and bark of nut and fruit trees, pine twigs & cones, fruits such as dogwood berries,

Provide deer antler or cuttle bone for gnawing and to provide calcium






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## Squirrels


### Newborns thru 4 Weeks

Small container w/ ventilated lid (crab boxes, aquariums, plastic tubs)

Ravel free cloth (polar fleece, sweatshirt material)

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## Squirrels

### Housing

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## Squirrels

### Newborns thru 4 Weeks




Heating pad on low under 1/2 container

Aquarium light provides extra warmth

Monitor humidity




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## Squirrels

### Minimum Standards



Tree Squirrel	Infant care	Nursing	Juvenile
(litter)	10-20 Gal	20 Gal	4'x4'x8'

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## Squirrels

### 4-6 Weeks

Successively larger enclosures


Can wean from heat once eyes open

Use caution with wire bottom cages until coordination is adequate


1/2" x 1" wire for bottom

1" x 1" wire sides and top

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### Squirrels 6-9 Weeks




Increase height as climbing ability improves  
Begin moving nest higher off floor of cage  
Add fresh branches and limbs for climbing  
Can add small pan of dirt as litter box.

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### Squirrels Release Criteria




Hacking out/soft release preferable  
Minimum 4' x 4' x 8' release cage  
½" x ½" hardware cloth best  
All exposed wood on outside  
Any treated lumber must not be accessible to chewing

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### Squirrels 9+ Weeks




Start moving outside during day  
Or place in room by open window  
Depending on season can be moved outside  
Not all limbs in cage should be secure

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### Squirrels


Provide nest box about 12"x12"x12"  
3"-3 ½"Hole upper corner  
Or internal landing/ledge  
External "perch" to facilitate entry  
Overhanging roof



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### Squirrels Release Criteria



Acclimated to weather  
(at least 2 weeks in outdoor cage)  
Can crack hard nuts  
Exhibit normal fear responses  
Exhibit hoarding/caching of food  
Demonstrate good coordination, strength,  
balance and climbing skills

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### Squirrels Soft Release




Open in morning      Closed at night


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## Squirrels Soft Release




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## Squirrels Wintering Over

- No guarantee squirrels will stay in area
- May not be accepted in the area by the wild population
- May not have option of returning to your feeding station for backup feeding
- Need time to get nest established & store wild food
- Rule of thumb: release by Election Day or winter over


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## Squirrels



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## Squirrels Wintering Over

- Diet of 90% monkey chow or rat chow a must
- Provide natural bones, lots of leaves and sticks with bark
- Collect and save several garbage bags dried leaves to replenish cage
- Release in the Spring when there is ample wild food available.
- Rule of thumb: release when the dogwoods bloom

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## Squirrels



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