

INTRODUCTION

They come in from one day old to six weeks old, sometimes full-grown. Most of them are injured, covered with ticks, emaciated, dehydrated, whacked with a weedwacker, mowed by a lawnmower, mauled and/or degloved by a cat, or uncovered and handled by curious humans. They are the lowest mammal in Nature's chain, and so delicate in structure as to be almost impossible to save, rehabilitate and release. They are a "pure" animal, insofar as they eat only plant life. Therefore, they represent to the many who caretake them the ultimate in vulnerability and innocence.

This manual is dedicated to the thousand and then some cottontails that have been touched, healed, nursed, released and buried by these hands. They have taught me acceptance, release, faith, a deep belief in miracles and so much more. Their total dependence and acceptance of us as caregivers is a true gift. It is because of this gift that I offer to you, other rabbit caregivers, this book of experience and knowledge. Mine is not the only way, and this manual is offered as a source of information only. May you see many lightbulbs go "on", may you see more success than you thought you could ever accomplish, and may the flightless wonders in your care return to you time and again to teach and finish the life lessons they bring to us.

This manual is dedicated to all rabbit caregivers and to our sleepy-eyed wonders.

There are two special sections, Feeding Tips and Feeding and Handling Techniques that were graciously written for me by:

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VITAL STATISTICS

- *Sylvilagus floridanus*, otherwise known as the eastern cottontail, is found throughout the southern part of the United States from Virginia to California and also Mexico. It's native habitat is both urban and rural, finding haven in your backyard to a brier patch in a pasture. They will live where their food is – in woodlands, pastures, streams and ponds, fields of hay and alfalfa, and in your flowerbed.
- They nibble all day long and into the evening. Their system requires a continual flow of nutrition and roughage through the gastro-intestinal tract in order to gain the calories needed for maintenance of health. Their favorite foraging times are pre-dawn, early morning, pre-dusk, and twilight. During the course of the day, they will often come out of hiding to nibble on new grass and leaves. By eating at those times of day, there is a “dew” on the grass and other plants. This is how the cottontail “drinks” its water. Their ulterior reason for venturing out during the day and risk being sighted by a predator is the luring away of that predator from their nest.
- The cottontails body temperature resides at 101_ - 103_ Fahrenheit. As their stress increases, so does their temperature. A higher temperature can indicate that their body is fighting off infection.
- The ears of a rabbit are their thermoregulators, or “air conditioners”. It is through the fine veins in their ears that heat is released, thus cooling the internal organs and blood. That is why you will see rabbits seemingly panting quite fast – so fast that you might think that they should be hyperventilating. They are actually dealing with stress and regulating their body temperature to adequately deal with the given situation. That situation can be transporting to a vet, an attack on its body, disease or illness, or even just picking it up for examination.
- Rabbits' eyes are set on the sides of their heads. They cannot see well and cannot see directly in front of them. They have incredible hearing capacity, taste, and smell, which make up for their poor eyesight. They will sit straight up on their hind legs and sniff the air, listening at the same time to determine the direction of danger or sometimes just to get a good sense of the environment.

- A rabbit's metabolism runs almost three times as quickly as a cat or dogs. That is why normal medical dosage amounts must be approached with a discerning eye when diagnosing and prescribing treatment. Anesthetic is quickly absorbed and excreted via the liver. One of the safest anesthetics used today is Isoflurane gas, which does not build up in the liver, and quickly wears off when administration ceases. Another method of gently putting a cottontail "under" for examination and treatment is immersing it in an anesthetic tank (usually an aquarium). Injectable anesthetics, such as Ace/Rompin/Ketamine, can stop a rabbit's heart by dosing too strongly. Because of their rapid metabolism, a rabbit can also die of shock much easier than almost any other mammal.
- Cottontails live in social colonies called "warrens". The females barely scratch the surface of the ground to make their nest, often in harm's way.
- It is a fallacy to say that cottontails make horrible mothers. On the contrary, they feed their young twice a day – most usually at dawn and dusk. The babies eat while lying on their backs, under their mother, with Mom hovering over them, always at the alert for the first sign of danger. The babies literally open their throats to allow the milk to flow directly into their stomachs. The feeding is usually over in 30 seconds! The mother stimulates and cleans the babies. By silent command the babies stay in their nest while mother stays far away from them keeping them safe from predators – except dogs, cats, curious humans and lawnmowers!
- A cottontail's nest is made of dried grasses, leaves, and fur that is plucked from the abdomen of the mother which allows easy access to her nipples when the kits suckle.
- Cottontails are born without visible fur, slick and soft to the touch, very "embryonic". Their eyes are closed and do not open until they are approximately 10 days old, their ears adhered to the sides of their heads, still unformed and not totally developed. Their eyes and ears "open" between 7 days and 10 days. They are helpless and totally vulnerable to predators. They can and will crawl from the nest, but usually do stay together until their eyes open.
- The usual number in a litter ranges from 1 to 8. It is unusual to see more than this in a litter, but we have received in a litter of 11! During times of drought, the number in the litter seems to decrease and in times of plenty, an increase is seen.
- The gestation time for a cottontail is 28 days give or take a day or two. The mother often has already mated as soon as her babies, called kits, are born. She can produce a litter virtually every month throughout the year. Here in north Texas, we see litters now throughout the year where there was a lull in the December/February timeframe.
- The life expectancy of a cottontail is between one and two years in the wild and the same as a

domestic rabbit in captivity (5-10 years).

- When the cottontail's eyes open, their metabolism starts to change along with their dietary requirements. They start the weaning process from the time their eyes open until they are approximately 3 weeks old or less.
- Cottontails leave the nest when they are three weeks of age or before! That is why we release between the ages of three and five weeks unless there is a medical reason indicated to the contrary. Their instincts have "kicked in", they are eating their natural foods, and they can camouflage and hide from the enemy.
- Cottontails become sexually mature at four to six months of age. The females can and commonly do mature at an even earlier age depending upon the weather, food supply, and predator population.
- Kits are born with a sterile gut. Their mother's milk provides the enzymes and bacteria (flora) that produce a "curd" in the gut. That curd is congealed milk and is like the starter for yogurt! From that curd the gastrointestinal tract is then fluorinated with the proper essential elements for the kit to have a healthy system. This process is complete by the time their eyes begin to open and the weaning process starts to take place.
- Kits are born sometimes with a white "blaze" on their foreheads. This blaze sometimes disappears as the cottontail ages, but it oftentimes remains with the cottontail throughout its life.
- The eastern cottontail is a herbivore. It does not eat other animals or animal products. They forage entirely on the plant life that resides in their specific location.
- Protozoa are resident in the gut and intestinal system of the cottontail: coccidia (many strains) are not prevalently seen, but these protozoa can "break" under stressful conditions. Rotavirus, E. coli and clostridium spiroforme and piliforme can also be resident in the cottontail's system, and an overgrowth can and does cause severe enteritis, bacterial enteritis, an inflamed and sluggish colon, and many other conditions. These conditions, I have found, are almost always connected with the stress that the cottontail is experiencing and also the kind of formula it is being fed. Immediate and urgent supportive care and treatment are essential at this point. Rabbits can and often do harbor parasites (pinworms being the most commonly seen). Cottontails can also ingest the oocysts of the Baylisascaris (common in the raccoon and skunk) and die from the migration and damage of that particular roundworm.
- Rabbits engage in coprophagy, (also known as night feces) which is the ingestion of what appears to be fecal matter, but what is really a cecotrope. This is a highly concentrated

vitamin B and mineral supplement that is manufactured within the GI tract of the rabbit and is essential to its health and development.

- Cottontails do NOT do well in captivity, which is why it is so important that their “half-way house” stay is no longer than need be. Cottontails will die from stress, overcrowded conditions, an environment that is too small and many other factors. When rabbits come in to Rabbit’s Rest, they are assessed and if possible and appropriate, released as soon as possible on private land. Supportive medical care is given if necessary, and again release is as soon as feasible.
- Kits are very tiny and are often confused and mislabeled as mice or a rat. They are still very embryonic at birth but develop at an amazing rate during their first week of life. Kits range from 16-23 grams (depending on what week of life) and can be released at 90-100 grams or less.

RECEPTION, DIAGNOSIS AND HOUSING

FIRST THINGS FIRST – ITEMS TO HAVE ON HAND

Here is a list of items you should always try to have on hand. **Please remember that mention and use of ANY drug should be in conjunction with an assessment and diagnosis made by your veterinarian. These are suggestions only, and the use of the homeopathic remedies are optional, but are used with regularity at Rabbit's Rest.**

- Heating pad (preferably with multiple settings)
- 1cc oral syringes (without needle)
- 3cc oral syringes
- 3cc syringes with needles
- 1cc syringes with needles (I use insulin ultrafine)
- 10cc oral syringe
- 20cc oral syringe
- catnip nipples with the very tip of the end cut off (don't make the hole too big!)
- premature infant feeding tube
- Lactated Ringers with set-up and needles
- Gram scale
- Nolvasan, Chlorhexidine or other appropriate disinfectant in which to soak utensils and flush wounds
- Trimethoprim Sulfate (Bactrim®) in either tablet or liquid pediatric strength (used in the treatment of enteritis/diarrhea, urinary tract/bladder infections, control of pasteurella)
- Baytril® – both injectable and tablet (broad spectrum antibiotic which does not disturb the flora in the cottontail's GI tract and is a good drug for cat-caught damage) – can cause appetite suppression
- Biosol (neomycin sulfate – diluted to the 2ml strength for use in the control of bacterial enteritis)
- Dexamethasone – both injectable and oral for use in shock and head trauma
- Arnica (homeopathic remedy for use in shock, head trauma and stress)
- Rescue Remedy (a Bach Flower homeopathic remedy used for extremely stressed wildlife)
- Metronidazole (Flagyl) (for use on coccidial/clostridial outbreaks and control of other protozoa – used in conjunction with Bactrim® or Biosol)
- Albon (used in the treatment of coccidia)
- Piperazine (used to kill and control pinworms and so forth)
- **Food quality** Diatomaceous earth (used as a natural parasite remover – the DE creates an environment within the GI tract that is not attractive to the parasite, hence it ceases to live and/or exits the body of the animal)

- Droncit (for use in the removal of tapeworms – rarely seen in cottontails)
- PEP, Pedialyte, Ringers, or other appropriate electrolyte replacer (lactated ringers is also used IV and Sub-Q)
- Q-tips (used to apply ointments and dipped in alcohol to help remove ticks)
- Alfalfa hay (this is part of the weanlings' diet)
- Fox Valley Cottontail Formula – Day One (1-800-679-4666)
- Guinea pig cage (housing for weanlings to older juvenile rabbits prior to release)
- Airline carrier (the under-the-seat kind) in which to house kits up to weanlings
- Access to a lawn/field with pesticide/herbicide free grass, dandelions and such!

INCOMING!!

Several points need to be gone over concerning the transportation of these creatures. These points extend to the people who call you also, as the lag time between arrival at your center or home can be many hours. Much shock is avoided/prevented if some of these measures can be followed.

- Use a small box such as a shoebox if possible. Make sure the lid is on tight (cottontails have been known to jump straight up and knock the lid right off) and has air holes in it (put in before the rabbit is put in it, of course!)
- Line the box with a soft clean cloth and cover the rabbit with another soft cloth.
- Avoid the use of newspaper (the soy ink can be an irritant) as it is not an absorbent material and feels “cold” to the touch. Warmth is the key!
- If the nest is available, have the person put some or all of the nesting material in the box. This will give the kits a point of reference and provide a calming effect. Make sure there are no ants clinging to the material!
- Have the rabbit(s) transported to you as soon as possible. In many cases, the longer the timeframe, the less chance the rabbit has and the more possibility of shock is incurred.

Reception/Triage

- If the cottontail is extremely stressed and does not have major external/internal damage, let it rest in the carrier for an hour. You may administer Rescue Remedy at this point – 1-3 drops can be given every 15 minutes to every hour and so on.
- Feel the ears of the cottontail. If they are cold to the touch, then most likely it's body temperature is low and “shocky”. ALWAYS place incoming patients on heat.
- Gently push through fur to ascertain external wounds and look for parasites (ticks especially).
- Conduct a thorough physical examination most of which can be done in a very gentle and nonintrusive manner.
- Glean as much information from the person releasing the cottontail to you as possible.
- Keep the cottontail in an area of your house where there is the least amount of noise possible

and away from cats, dogs, and children. Cottontails can literally die of stress and fright. They can also kill themselves trying to get away from you and/or out of the container.

- Handle the cottontail carefully, wrapping it in a soft washcloth in order to assess it's condition
- Although wild rabbits do not carry many diseases that are transmittable to humans, always wash your hands twice with an antibacterial cleanser.
- Weigh the cottontail and record descriptives in journal

Diagnosis

Here in the north Texas area, we have seen the breeding season for the eastern cottontail extends from February through November. We have received eyes closed neonates even in December! Listed below are “cases in point” which you may refer to upon receiving neonates/juveniles into your facility. Please remember that your veterinarian should be consulted regarding the giving of any drug. Because of this extended season, reception and diagnosis of the cottontail can be broken down into several agendas:

1. Neonates removed from the nest by curious humans and unable to return them to their initial environment – no external or internal damage noted. Mode of treatment would be:
 - a. weigh neonates and assess hydration/begin rehydration procedures
 - b. stabilize in heated environment
 - c. Place a clean snuggly cloth and a small amount of rabbit fur (if available) in a small box (cube) that will fit inside the heated enclosure. Place neonates on fur.
 - d. When the neonates’ body temperatures have stabilized, begin feeding regimen.
 - e. Administer trimeth sulfate (*optional* – suggested by Dr. Ann Buglass Hiss, Chesapeake Wildlife Sanctuary, Wildlife Journal, Vol. 11, No. 2, pgs. 7-12)

1. Neonates removed from the nest by dog –not as fatal as a cat caught cottontail, but internal organs may indeed be damaged by the teeth of the dog
 - a. weigh neonates and assess hydration/begin rehydration procedures
 - b. stabilize in heated environment after assessment of wounds/injuries
 - c. Flush any visible wounds with Nolvasan or Chlorhexidine (diluted to appropriate ratios – 1 ounce per 1 gallon of sterile water). I use a 10 or 20 cc syringe and gently flush wound.
 - d. Apply triple antibiotic ointment to wound
 - e. Administer Rescue Remedy and/or Arnica for shock (optional)
 - f. Administer trimeth sulfate for primary bacterial infection
 - g. Administer feeding regimen in accordance with age/weight (first feeding should always be either Pedialyte, LRS, or PEP
 - h. Watch for signs of shock. Keep body temperature elevated.

1. Neonates removed from nest by cat

Time is of the essence here as with any injury to a wild creature. Given the fact that the saliva of the cat is as deadly as that of any other venom, it is imperative that the cottontail be stabilized and given the appropriate antibiotic as quickly as possible. Cottontails are often degloved (large areas of skin removed from body). Puncture wounds may be severe and deep and they should be flushed as described above.

- a. Weigh neonate and assess for wounds/hydration.
- b. Stabilize in heated environment.
- c. Administer either Trimeth sulfate (BACTRIM®) or Baytril® oral suspension. (I cut a 5mg tablet into quarters and dissolve 1 quarter in _ cc of LRS or PEP and administer orally) or Chloramphenicol.
- d. Follow points stated above.

Please remember that a cat caught cottontail has less than a 50% chance of survival and less as the time span increases between the incident and the creature arriving at your facility. These are my most challenging cases, and my success rate is almost zero. I have only saved one cat caught cottontail to date this season, with 8 having been received at my facility.

Juveniles (over 10 days old or eyes opened)

Follow the same basic regimens as stated above with the exception that a juvenile is much more capable of squirming out of your hand and fighting the administration of any oral applications. The older the cottontail, the more stress it realizes, and the more careful you must be with as little contact and as quiet an environment as possible.

1. Hit by car – head/body trauma -
 - a. Stabilize in heated well-padded environment after having done the following:
 - b. Administer Arnica 200c once
 - c. Weigh and log descriptives (log after therapies are complete)
 - d. Administer Dexamethasone at the rate of .05 – 2mg/kg sub-q or give oral Dex
 - e. Administer oral hydrating solution as soon as possible and as body temperature stabilizes.
 - f. Administer feeding regimen as suggested/required.
 - g. Administer, if possible, chloramphenical palmitate at the rate of 30-50mg/kg PO, BID. Chloro has excellent diffusing capabilities throughout the head/sinus areas of rabbits. Next choice of drug would be Baytril.

1. Broken limbs –stabilize limb until you can have your vet see the creature. If assessment is good, then according to weight/age, proceed accordingly as indicated above.

HOUSING

Below is a list of items used in the housing of cottontails. All of these items are important to the safety and stress level of the cottontail. Why? Because cottontails feel safe and secure in small, dark, warm enclosures, hence the “house” from the shoebox, heating pad and small carrier lined with the soft towel. Cottontails, especially eyes closed neonates, will relate to the rabbit fur that is in their small box. I use groomed rabbit fur from my own rescued domestic rabbits. The more appropriate the environment, the less stress on the rabbit, and the sooner it will calm down and acclimate to its new surroundings.

- 15”x10”x9” under the seat airline carrier is what I use the most. Neonates to juveniles to adults cannot escape from this container. There is an opening at the top so that you can reach in if need be. These carriers are easily cleaned and sterilized, are very portable, do not take up much room, and create the kind of quiet, dark environment that the cottontail needs. Can be purchased at Petsmart or Petco for \$11 to \$15.
- Heating pad
- Shoe box or tissue box
- Portion of “saved” nest material
- Very small quantity of loose rabbit fur
- Aquariums of various sizes work well, but are harder to clean and the cottontail can escape if the lid is not on tight.
- Guinea Pig cages work very well for cottontails that have outgrown their carrier and are ready for more exercise room. The kind I use have a grate that covers the floor, and I put dustless kitty litter in the bottom to absorb urine. Place a towel over the grate and cut a shoebox in half and use it as a “house” in which they can retreat. I only use fur in the small carrier for the neonates. Once their eyes open, the fur can be removed. Food can be placed on small paper plates and disposed of when replacing.
- Cardboard boxes are fine for immediate or interim housing, but they do not heat well and cannot be cleaned.

Environment

Neonate

- Small carrier, “Critter Cage”, or whatever you have chosen to place your cottontails within.
- Heating pad, set on low or medium (always monitor the heat!!) with the container set half on/half off the heating pad
- Clean handtowel with which to line the carrier (I double mine in half)
- Small open-topped box in which to place the neonates
- Line the small box with paper toweling or clean washcloth
- Place groomed loose rabbit fur (only a very small quantity) in the small box (you can discontinue use of the fur once the eyes have opened/up to 14 days or so. The use of

groomed loose rabbit fur is this: it helps the neonate calm and unstress immediately because of the smell and texture of the rabbit fur. Mom lines her nest with her own fur – here we are recreating an environment that closely resembles the original nest.

- Place the neonate in the small quantity of loose groomed rabbit fur.
- The bottom of the carrier should feel comfortably warm, but not hot.

Juveniles/Weanlings

- Once their eyes have opened and they can hop out of the small box easily, you can remove the box and put in a shoebox or tissue box, thus making a four-sided “house”. I change the handtowel in the carrier once a day.
- Place a small jar lid of water in the carrier
- Place a small quantity of freshly cut grass in the carrier twice a day (rabbits tend to eat more at night and in the early morning hours)
- Always remove any uneaten food stuff once a day
- If still on formula, you can try to get them to lap from a jar lid – some do, some don’t!
- Keep the cottontails on heat until they are ready for the “big cage”

Juveniles/Pre-Release

- When the rabbit is ready to go to a larger container, bring some of the bedding with it to the new container, thus ensuring consistency in smells and keeping the cottontail from overly stressing due to a change in environment.
- Again place the four-sided shoebox or tissue box into the container. I use a guinea pig cage with a wire grate on the floor. I put dustless kitty litter in the cage beneath the grate. This helps to absorb urine and so forth.
- Always keep a jar lid (I use a spaghetti jar lid) in the container
- Always keep fresh cut grass in the container
- Place formula in a jar lid inside the container if they are lapping from one.
- Change towel every day.
- You can keep coastal hay or timothy hay in the large container for the cottontails to eat and also for them to hide in.
- If possible, provide other “edible” hiding areas within the cage, with the ultimate goal of providing the cottontail with as natural an environment as possible and also minimizing human contact from this point forward.

If possible, create an environment outside where the cottontail can be safe from predators and also acclimate to the weather. I myself do not have an outdoor environment for my cottontails due to the fact that we live in the country and predators (natural and domestic) are always on the lookout. If you have the space, the creation of an outdoor cottontail environment is a wonderful thing, but not actually necessary for the future release of that cottontail.

FORMULAS, FEEDING, AND HANDLING

There are several milk replacement formulas that are utilized in the nursing of cottontails. At Rabbit's Rest I utilize the Fox Valley Day One Formula 32/40 for my cottontails. As communication with the rest of the world increases due to technology and the Internet, and as research steps forward on behalf of these precious creatures, breakthroughs and miracles happen now every day. What is used in Australia for their wild rabbits does indeed translate for use here in North America for our wild rabbits. What was used ten years ago has now evolved into even better formulas and ratios. Only you can decide which formula best suits your rabbit's needs. But please remember – rabbits are lactose intolerant, which means that if you introduce an animal protein and/or fat into a wild rabbit's system that cannot easily be assimilated or broken down, you can and will encounter problems such as enteritis, bloat (often associated with overfeeding and gram negative bacteria building up in the GI tract) and severe diarrhea/clostridium episodes. I do not use heavy whipping cream or any other additive except for the Acidophilus/Lactobacillus product that was also created by Fox Valley Animal Nutrition. I use this particular product in the formula straight through transition into weaning.

In 1999, on behalf of the cottontail, we will begin a yearlong national study on the rehabilitation and release of the eastern cottontail using the Fox Valley formula exclusively. I expect wonderful results and am actually looking forward to baby season!

Fox Valley Formula Guaranteed Analysis (as is listed on the product itself):

Crude Protein, Min.	32.0%
Crude Fat, Min.	40.0%
Crude Fiber, Max.	0.0%
Ash, Max.	9.0%
Moisture, Max.	5.0%

DAY ONE FORMULA 32/40

Cottontails, Squirrels and Opossums

32% Protein

40% Fat

15% Carbohydrates

548 kcal/100 grams powder

1 cup weighs 120 grams (approximately)

*NOTE: If the animal is dehydrated, start feeding regimen with an electrolyte solution for the first feeding and/or until rehydrated and the body temperature is normal. Then you may start _ strength formula, _ for the next, _ for the next and full strength for the final feeding of the day. This feeding regimen can be accomplished for cottontails over a 24-hour+ period. If the cottontail is in need of more kcals, you may increase the feedings per day. The acid/lacto product stays in my formula through the transition to weaning.

Powder to Water Ratio:

By Volume	% Solids	Kcal/ml	% Protein	% Fat	% Carbohydrate
1:3	13.8	0.884	4.4	5.5	2.1
1:2	19.5	1.32	6.2	7.7	2.9
2:3	24.2	1.75	7.8	9.7	3.6
3:4	26.5	1.97	8.5	10.6	4.0
4:5	27.7	2.10	8.9	11.1	4.2

Eastern Cottontail Mother's Milk Analysis:

1Jenness & Sloan

36.1% Solids

17.9% Fat

12.5% Protein

1.0% Carbohydrate

2.15 kcal/cc

1Oftedal

35.2% Solids

14.4% Fat

15.8% Protein

2.7% Carbohydrate

2.04 kcal/cc

2Contents of Mother's Milk - PetAg

35% Solids

41% Fat

44.0% Protein

The ingredients are as follows:

Vegetable oil	Sodium Chloride	Thiamine Hydrochloride
Dried milk protein	Choline Chloride	Pyridoxine Hydrochloride
Dried hydrolyzed casein	Vitamin B supplement	Folic Acid
Dried skimmed milk	Vitamin A supplement	Glycine
Dried corn syrup solids	Vitamin D-3 supplement	L-Lysine
Dicalcium Phosphate	Zinc Sulfate	L-Threonine
Calcium Carbonate	Ferrous Sulfate	Taurine
Potassium Chloride	Riboflavin supplement	L-Tyrosine
Magnesium Sulfate	Manganese Sulfate	Calcium Iodate
D,L, Methionine	Copper Sulfate	Biotin
L-Arginine	Vitamin B-12 supplement	

This formula mixes well with water that has been heated to at least 100 degrees farenheit with the powder added to the water. I use a small hand blender (very tiny – you can buy it at Walgreen's – it is called “Mix-It”). Once blended (only takes a few seconds), I let the formula rest for a minute or two and then proceed with my feeding regimen.

Directions for using PEP:

- 4:1 strength 1 part PEP and 3 parts distilled water to 1 part formula powder
- 3:1 strength 1 part PEP and 2 parts distilled water to 1 part formula powder
- 2:1 strength 1/2 part PEP and 1 1/2 parts distilled water to 1 part formula powder

Other Fox Valley products that I utilize:

DAY ONE Formula LA200 (lactobacillus/acidophilus)

Formula LA200 contains naturally occurring viable lactobacillus bacteria which is administered to neonates and stressed animals to supplement the intestinal microflora.

Guaranteed Analysis:

Lactobacillus Acidophilus, Min. - 1.0 Billion CFU/g
Streptococcus Faecium, Min. - 1.0 Billion CFU/g

Ingredients:

Dried whole whey
Dried Lactobacillus Acidophilus Fermentation Product
Dried Streptococcus Faecium Fermentation Products
Dextrose
Calcium Silicate
Beta Glucan (encapsulating agent)

Directions for use:

Supplement milk formula, water or electrolyte solution with 1/4 teaspoon Formula LA 200 per cup of liquid. Mix well. Formula LA 200 provides viable lactic acid producing bacteria to help maintain the natural balance of intestinal micro-organisms.

DIA-STAT - an electrolyte and energy supplement that helps normalize stool consistency

Guaranteed Analysis:

- Sodium, Min. 2.20%
- Potassium, Min. 0.50%
- Magnesium, Min. 0.06%
- Dextrose, Min. 40.00%

Ingredients:

- Dextrose
- Rice Flour
- Coconut Oil
- Salt
- Guar Gu,
- Potassium Chloride
- Calcium Lactate
- Fructooligosaccharide
- Magnesium Sulfate
- Citric Acid
- Sorbic Acid
- Sodium Citrate
- Zinc Sulfate
- Iron Sulfate
- Dried Lactobacillus Acidophilus fermentation product
- Dried Streptococcus faecium fermentation product
- Dried Aspergillus niger fermentation extract
- Dried Bacillus subtilis fermentation extract
- Amino Acid Blend
- Natural and artificial flavors

Feeding Instructions:

Shake 1 teaspoon into 2 ounces of warm (100 degrees fahrenheit) water. Feed soon after mixing as the liquid will thicken upon setting. Start feeding as soon as possible after indications that the animal needs supplemental energy and electrolytes. DIA-STAT provides energy and electrolytes rapidly to the animal to help restore lost fluids.

ELECTRO-STAT

Guaranteed Analysis:

- Sodium, Min. 5.50%
- Potassium, Min. 0.75%
- Magnesium, Min. 0.30%
- Dextrose, Min. 30.0%

Ingredients:

- Dextrose
- Sodium Chloride
- Sodium Bicarbonate
- Sodium Citrate
- Calcium Chloride
- Magnesium Sulfate
- Potassium Chloride
- Glycine

Mixing Directions:

Mix 1 teaspoon (5g) into 5.5 oz of warm water. Feed solution to provide approximately 40 ml of solution per kg of bodyweight daily divided into several feedings. Electro-Stat can be used to introduce milk formula to neonates.

Information provided by **Fox Valley Animal Nutrition, Inc.**

P.O. Box 146 Lake Zurich, IL 60047

Sales (800) 679-4666

Technical Support (888) 782-4916

Please feel free to contact Fox Valley if you have any questions, problems or concerns

****PEP** is a product that was developed by veterinarians to help replace lost body fluids in animals. It is a bit expensive, but I use it routinely now both as a base to dilute formula (particularly if the cottontail is on the road to rehydration) and also as a drink for both my domestic and wild rabbits. You can order it by calling 1-205-840-9038 or by writing to **PEP**, P.O. Box 842, Boaz, AL 35957.

¹Reference taken from Debbie Marcum's **Rehabilitation of North American Wild Mammals Feeding and**

Nutrition, copyright ©1997 by Debbie Marcum, cottontail chart 01. Printed by the International Wildlife Rehabilitation Council (IWRC)

²Reference taken from Dr. Anne Hiss' Hand-Rearing Orphaned Eastern Cottontails (*Sylvilagus floridanus*)©, 1993, page 4. Published by the International Wildlife Rehabilitation Council (IWRC).

FEEDING CHART/SCHEDULE

The chart below is an approximation of neonate to juvenile release weight (in grams), length, and description and also for administration of formula to a fully hydrated cottontail. The formula used is 1 part Fox Valley formula to 2 parts pure water, PEP, or electrolyte solution.

Cottontails can be fed up to four times per day or more, but the cc's administered should be adjusted accordingly. I basically follow a 10% body weight to cc ratio (this is an approximation!).

All weights are dependent upon the hydration of the neonate/juvenile cottontail.

All measurements are from nose to tail

DAYS OLD	WEIGHT (in grams)	CC's PER FEEDING/DAY	LENGTH	DESCRIPTION
1-3	16-23	1-2cc's TID/QID for a total of approx. 6-8 cc's max. per day	2"	Embryonic, eyes closed, smooth skin, ears closed you can see the color pigmentation of the fur, pink underside.
4-7 (1 week)	23-35	1-2cc's TID/QID for a total of approx. 6-8 cc's max. per day	3"	eyes closed, fur beginning to develop, ears still close to the head and closed
7-10 (1 week+)	35-40+	2-4 cc's TID/QID for a total of approx. 12 cc's max. per day	3"+	eyes and ears beginning to open
10-12	40-55+	3-5cc's TID for a total of approx. 15 cc's max. per day	3-4"	The neonate should open its eyes and its ears should be unfolded and open. Place fresh grass, bits of alfalfa leaves and minced apple in with the rabbits. Change out twice daily.
12-14 (2 weeks)	55+-70	5-7/8cc's BID/TID for a total of approx. 24 cc's max. per day	4"+	The eyes are now totally open, the ears are open, the cottontail may be urinating on its own, but continue to stimulate. Cottontail may begin nibbling on grass or apple.
14-18 (2 weeks+)	70+ and up	5-7/8cc's BID/TID for a total of approx. 24 cc's max. per day	4-4 _"+	Weaning process may begin. Fur should be filled out, cottontail should be alert and start nibbling on grass/apple
18-22 (3 weeks)	80+	5-7/8cc's BID/TID for a total of approx. 24 cc's max. per day	4 _-5"	Try to have cottontails lap from jar lid and introduce more natural foods. Weaning process should be complete by three to three and a half weeks of age. Cottontails also self-wean very well. Rabbit fits snugly in the palm of your hand, bright-eyed and alert
				rt, ears erect and listening. Cottontail should begin to be shy of human touch.

22-28 (3 weeks+)	150-160	If necessary, dilute formula to _ strength and administer either orally or in a small lid.	5-7"	Formula should not be introduced. Feed natural foods. Cottontail should shy away from human touch. Should be ready to be released barring any medical complications.
28-35 (4 weeks)	160+	No formula necessary	7-10"	Cottontail should be ready for release barring any medical complications.

FEEDING & HANDLING TIPS

By Elaine Peterson Long

When I first began to rehab wild rabbits, I was literally scared to handle them or sneeze within their earshot. The constant fear that next time I'd peek in on the precious charges, they would have succumbed in my care. Stories, mentoring and information emphasized how delicate rabbits were to keep alive. My focus was so intent on success that I must have emitted a tense energy. I am sure the rabbits could sense this, which defeated my genuine purpose. The possibility of the *dreaded diarrhea* was always forefront in my worries. The odds were against them and few would survive to release stage of rehabilitation. When I would lose a bunny, it was ALWAYS my fault. I must have done something WRONG. Now I would like to share how my attitude and handling techniques have changed this past year. Believe me, there is no greater joy than to release a rabbit back to the wild. Best of all it does not have to be a stressful experience or nerve wracking! OKAY - TAKE A DEEP BREATH, RELAX AND ENJOY!

The eyes-closed neonates usually respond very well to handling, touching and massage. It may take 36-48 hours to get them used to the new program, since rehab is very different from Mom's technique. Many will suckle from the catac nipple, making feeding a pleasant experience. Yes, they will stretch out and knead, as if nursing on Mom! I hold them in my left hand (I feed with my right hand), so that their back is upright and touching the palm of my hand. My fingers are able to adjust different amounts of slight pressure to securely hold the neonate. I use my thumb to manipulate and support the chin of the rabbit. This assists with getting the feeding implement in the rabbit's mouth. Practice will get you more comfortable handling the neonates. I prefer to feed over a padded surface, just in case there is a quick movement, or even sit on the ground with my back supported. During the feeding and stimulation routine, I touch, feel, nuzzle and caress the bunny's ears, back, rib cage, rump and face ...just as a Mother rabbit would groom and stimulate in the nest. When they stretch out, you know you've hit the right spot!

Eyes open rabbits can be more of a challenge. If they are jumpy, you can snuggle them in a small towel or wash cloth. I will attempt to use the same techniques, but if it is obviously too stressful to the rabbit, then it is time to stop. When I have some "jumpy" juveniles, sometimes I can "bottle" feed them while they stay in their cage or container. I have found it is important to observe the rabbit, the behavior and then approach in an appropriate manner. Sometimes quiet and solitude is the best for the high strung type.

While the results are not always optimal, I've changed my attitude and accepted that it is not ALWAYS my fault. When I am relaxed and calm, I feel like the rabbits can sense safety and security. Once I accept a rabbit into my facility, my goal is to take it through to release. Rabbits get comfortable with smells, voices, routines and housing. **It is just too stressful to change the rehabber in mid stream.** This is why I do not "hand off" my cottontails to another rehabber –

to change their environment is to invite undue stress! It is a commitment that I take seriously and the JOYS are phenomenal.

FEEDING TIPS

By Elaine Peterson Long

Rehabbers have to be creative and resourceful folks. I've found the 1.4 ounce jelly/condiment jars that Hotel Room Service serve are great for warming up small quantities of formula. Once the formula has been warmed up once, I discard any that is left over. It is not worth the potential risk to save the formula. Try to take out just what you need by pre-measuring approximately how many cc's you use at one feeding. That way the formula is not being wasted.

The jar of formula that I am using at feeding time must stay as pure as possible. I NEVER fill the syringe through the catac nipple or what ever feeding tip that is being use. The syringe can be filled through the tip of the syringe. This method allows any air bubbles to be pushed out by the plunger, when you point the tip straight up. Germs and bacteria can be introduced into the food source when you fill the syringe through the catac. Keeping the formula free of contamination is very important. Catac nipples need to be sanitized by washing in HOT soapy water and soaked in a diluted Chlorhexidine solution. By doing this in between each animal (especially between different litters or containers) potential transmission of contagious disease or bacteria can be minimized. Sometimes our most valuable lessons come in the form of a crisis situation, as in my case. An outbreak of Trichomoniasis in some doves brought this lesson to my attention. The feeding tube that was used contaminated the food source. The tiniest neonate had acquired Trichomoniasis from the parent birds prior to admission to rehab. Several doves were affected and most survived with appropriate medical treatment. All of the birds had to stay in rehab approximately twice as long in order to recover. There were many issues that must be evaluated. A rehabilitator's time is valuable and care is essential to be efficient. Also a rehabilitator's finances must stretch and extra medical bills are part of the commitment.

Diet for the Weanling Cottontail (Or, “Waiter! There’s a Hare in my Soup!!)

*While the neonate is in the carrier, I always put a small quantity of freshly cut grass. Just thought I would mention that again!

Once a cottontail has begun the weaning process (approximately 2 weeks+ of age), you can start to feed them formula twice a day, and start introducing new foods. Some of these foods are not necessarily found in the “wild”, but are designed to get the cottontail eating good fiber/food as soon and as quickly as possible. Don’t worry – you don’t need to put everything listed below in front of that cottontail! Use your judgment and what is available at what time of year. Below is a list of foods that have worked well for me:

Gerber (or other brand) baby food:
Mixed vegetables – both the “green” and the “yellow”
Applesauce
Sweet Potato

Small quantities of:

minced apple
red leaf lettuce
loose alfalfa leaves and stems
cilantro
parsley
kale
pulverized rabbit pellets
pulverized Doc’s Rabbit Enhancer (multi-vitamin/fiber supplement)
dandelion greens
field grasses
rose petals (if you have access to a native rosebush, as I do, feed the whole rose – hip and all but NOT the stems with thorns!!)
petunias
pansies
red clover

Always keep a small jar lid of water in the container!

Once the cottontail is totally weaned, I start feeding them as much of a “natural” diet as possible. By the time they are released, they are on a totally “natural” habitat diet consisting mainly of grasses, leaves and flowers. Some herbs can be fed also, such as peppermint and so forth.

RULES OF THUMB

NEONATES

- Always weigh the neonate when it first arrives and periodically throughout its care – I weigh every two to three days until they reach 10-12 days old then every week
- Give formula according to the feeding schedule chart (based on weight in grams)
- Neonates (eyes closed) cottontails should be fed 3-4 times per day.
- Neonates can take up to 3cc – 5cc per feeding, but please refer to feeding chart for a more exact feeding schedule. (The larger amount – 5cc – would be for 7-10 day old cottontails)
- The first feeding should always be an electrolyte replacer until hydration has been attained
- $\frac{1}{2}$ strength formula is given for the first 2-3 feedings
- $\frac{1}{2}$ strength formula is given for the next 2-3 feedings
- Full strength formula can be given only after full hydration has been achieved and the cottontail is stabilized
- Catac nipples with the ends cut off (just the very tip) affixed to a 3 or 5 cc or o-ring syringe work well to administer formula
- Bloat is associated with too much formula being given per feeding and also a build up of gases created from gram negative bacteria, and can signal the onset of enteritis.
- Eyedroppers (not glass) also work well for neonates 1 day old to 5 days old, but it is hard to tell how much formula has been taken using this method.
- Formula should be WARM to the touch – almost to the point where you would say, “That’s too hot!” Rabbits do not nurse well when the formula is cool, and actually need the heat of the formula to help start the “curd” process in their stomach.
- Neonates should have proper body temperature before feeding formula. Place cottontail in heated environment until appropriate body temperature has been attained.
- Do NOT hold the neonate upside down to nurse. Hold either eye level to you or with the head slightly lowered. Rabbits aspirate easily at this age and it is important that as much fluid be removed from the sinuses as possible to avoid infection. Usually they will sneeze enough out, but sometimes will need a little help.
- Wrap the neonate in a clean soft washcloth or other type of material to nurse. This makes them feel safe and secure.

MEDICATIONS AND DRUG DOSAGES

Listed below are the drugs and dosages that are used here at Rabbit's Rest. They were established over the years with the help and guidance of my rabbit veterinarians. **Consult with your vet when it comes to diagnosis and the administration of any medical element. Please also note that most of these drugs are NOT approved for use in rabbits.** Day by day we learn more, grow more, and use more knowledge, especially directed at our cottontails. Many a life has been saved and then set free because of this knowledge.

ANTIBIOTICS

Bactrim® (Trimethaprim/ sulfa)	20-30mg/kg PO, BID (approx. 1cc/ kg PO) dose is based on combination of trimeth/sulfa	Pediatric strength oral liquid – safe antibiotic, good for controlling pasteurellosis in rabbits and also enteritis or clostridial event. Can be used for extended periods of time – at the least, 5 days
Baytril® - oral (enrofloxacin)	5-10mg/kg Tablet – 5.7 mg of enrofloxacin treats 2.3 kg (5 lbs.) of body weight	Broad-spectrum antibiotic. Has been contraindicated for use in very young mammals, including cats and dogs due to growth plate inhibition.
Baytril® – injectable (enrofloxacin)	22.7% solution per ml as a single injection at a rate of 1ml/9.1kg (20 lbs.) to provide 2.5mg/kg (1.3mg/ lb.)	Same as above. Injectable can be used orally.
Biosol® (neomycin sulfate)	2mg/ml strength DOSE – 0.003 (Ex.: 50g rabbit x 0.003 = 0.15cc dose)	1cc of 200mg/ml strength Biosol + 9cc distilled water = 20mg/ml strength THEN take 1cc of the 20mg/ml strength + 9cc distilled water = 2mg/ml strength and is dosed at 0.003cc/gm Continue until release. Used in the treatment of nonspecific enteritis/diarrh
		ea-like symptoms in the cottontail.
Chloromycetin palmitate	50mg/kg PO, BID	Broad-spectrum antibiotic. This drug is extremely good for nasal infections and is also used in cat caught episodes.
FLAGYL® Metronidazole	20-40mg/kg PO, BID	For anaerobes, may be useful against Clostridium sp. in severe diarrhea
Tetracycline	15-20mg/kg IM, PO, BID 400- 1000mg/L in drinking water	For mycoplasma and Tyzzers disease
Procaine Penicillin (penicillin G Benzathine and penicillin G procaine)	40,000IU/kg IM, SC, SID	INJECTABLE ONLY – given IM or SC every other day for 5 times. Excellent for susceptible Pasteurella and Staph (abscesses and so forth) (I rarely use this in the wild rabbits, but I do use this for my rescued domestic rabbits.

ANTIPARASITICIDES

IVOMEC® (Ivermectin) (not approved by USDA for use in rabbits)	injectable strength - .27% 0.2-0.5mg/kg SC ONCE repeat in 1-2 weeks for 2-3 treatments	Safe to use for ear mites. Also kills ascarids and pinworms.
Albon® or Bactrovet (sulfadimethozine)	25-50mg/kg PO, SID	For coccidia, use for 10-14 days (may use up to 100mg/kg) First dose – 50mg/kg then reduce to 25mg/kg for remaining treatment
Sulfaquinoxolone	0.25-1g/L drinking water	Use for 30 days for coccidia
Piperazine	500-1000mg/kg PO every other week	For pinworms

ANALGESICS AND ANESTHETICS

Acepromazine	5mg/kg IM	
Aspirin	100mg/kg PO Q 4-6 hours	
Butorphenol (Torbugesic)	0.1-0.5mg/kg SC TID	Analgesia
Ketamine	25-50mg/kg IM	

MISCELLANEOUS DRUGS

Atropine	10mg/kg SC 2 20 minutes	FOR ORGANO-PHOSPHATE TOXICITY ONLY
Dexamethasone	0.5-2mg/kg IV, IM, IP, SC (Dexasone – 2mg/ml)	For shock, anti-inflammatory. Decrease dose over 3-5 days
Meclizine	12.5-25 mg/kg, BID, TID, PO	For torticollis, head trauma with presenting dizziness and/or head tilt. Helps stabilize the inner ear. Bonine is the over-the-counter drug name.
Neo-Predef® With Tetracaine Powder (neomycin sulfate, isoflupredone acetate, tetracaine HCl)	Powder	Topical application for use in yeast infections or fungal infections surrounding the uro-genital area.
Reglan® (methachlopramide)	0.2-1mg/kg IV, IM, SC, PO, BID	Promotes GI motility
Simethicone Drops	Pediatric strength – 2-3 drops BID	To help relieve and dissipate gas build-up in the GI tract
Vitamin B complex	0.02-0.4ml/kg IM, SID	

HOMEOPATHIC REMEDIES

At Rabbit's Rest the use of homeopathic remedies are commonplace. I feel strongly that rabbits are "pure" animals, thus they respond well to natural therapies. I encourage and invite you to try these – you have nothing to lose and so much to gain. There are no scientific data to give you, no assemblage of data, just results. And to me, that is all that matters.

Immune System Booster:

Alcohol-free Echinacea – can be purchased at any health food store. Administer at the rate of 5-10 drops in either the formula or drinking water. This does NOT take the place of antibiotics nor does it take the place of any of the liquid in the formula. It is an addition TO the formula. Give any alternative medicine therapy either 15 minutes before or after traditional Western therapy (antibiotics). This allows the animal's system to assimilate whichever it has been given before the other is introduced.

Bach Flower Remedies

Administration: On food or in formula or water: 4 drops for birds and small animals, 10 drops for large animals

Rescue Remedy®	Ingredients: Rock rose (Helianthemum nummularium) – terror Clematis (Clematis vitalba) – withdrawal Impatiens (Impatiens glandulifera) – mental stress and tension Cherry Plum (Prunus cerasifera) for fear and tension Star of Bethlehem (Ornithogalum umbellat	This remedy is used upon admittance of any stage cottontail. This can be given as often as every 5 minutes for extremely stressed wildlife or as little as once. As soon as the animal is visibly calmed, continue this remedy for the remainder of the day or
	um) for shock, trauma, fright, and distress)	even into the next.
Crab Apple®	Ingredient: Malus pumila	Detoxify and supports the cottontail throughout the dietary changes it incurs. It is also utilized to combat recurrent infections.
Hornbeam®	Ingredient: Carpinus betulus	Used to help support the cottontail if it appears physically tired or exhausted, if it is unresponsive, and has lost the will to live.
Rock Rose®	Ingredient: Helianthemum nummularium	Calms a panicked, frightened or terrorized patient
Walnut®	Ingredient: Uunglans regia	Eases the cottontail through transition/adjustment and helps in adapting to new situations.

TTOUCH™ AND PROACTIVE MASSAGE

Ttouch, part of the **TT.E.A.M.** approach to animals was brought into being by Linda Tellington Jones as part of her work with equines. This is **NOT** “energy” work, nor massage. The techniques that Ms. Tellington-Jones utilizes on both animals and humans evokes and concretes the human/animal bond, connecting, through circular motions and touch the brain of the human and animal thus facilitating calm, peace, healing, and de-stress of the animal. I would invite you to try this approach on your charges. The **Ttouch** works especially well on neonates and cottontails whose eyes have just opened and are experiencing that transition from baby to juvenile, both internally and externally. Again, you have nothing to lose, and everything to gain!

The **Ttouches** that I use for my cottontails are:

Snail’s Pace© – this Ttouch reduces stress and is also used on the abdomen of the cottontail to reduce bloating and encourage increased gut motility. This Ttouch can be demonstrated on the ears, head and body of the cottontail. Using the fingertips to the first joint, lift the muscle gently _” to 1” and then very **SLOWLY** release. You can also make the lift using a _ circle, starting at 6 o’clock, move the skin around to 9 o’clock, hold a few seconds and then following the curve back to 6 o’clock.

Lying Leopard© – this Ttouch also is a stress reducer. I use sometimes only one finger when demonstrating this Ttouch on a cottontail. Put your “pointer” finger on the area of the rabbit that needs to be soothed so that the entire tip of your finger through the first joint touches the skin of the rabbit. Use light pressure, and move the skin either very slowly or faster, whichever is better utilized. Remember to go in small circles, either singly or in clockwise circles, stopping for a second or two at each main part of the clock (6, 9, 12, 3, and back to 6).

Inch Worm© – this Ttouch reduces the tightness in any area of the body that is under a great deal of stress. On a larger mammal, you can use your entire hand but on a neonate, use one finger from each hand. Gently and with only a slight amount of pressure, push the skin up and with the other finger move the skin down. You can use the very tip of your finger if necessary. This up/down motion soothes and releases the tense muscles of the affected area.

Raccoon Ttouch© – this Ttouch is useful in reducing pain and swelling around wounds. It also helps bring blood to the injured sight and stimulates the healing process. With the **TIPS** of your fingers, (use only one if need be), make tiny, light circles around the wound, but not on the wound.

Proactive Massage

Utilizing the Tellington Touch and proactive massage is **NOT** a violation of the imprinting or bonding edict under either Federal or state permit mandates and regulations. Because of the way

the animal is approached with these techniques, we are not holding them to comfort them (although much could be said along those lines), we are not treating the wildlife like a domestic pet, and we are not encouraging a bonding process with the wildlife. Indeed what we are doing is helping the animal to calm, adjust, heal, and grow – with the goal of release always in mind.

Massage is as old as the human race. When our muscles are tensed from being too stressed, when our limbs are injured from car accidents or even just too much exercise, massage is used as a beneficial element in the relaxation and healing process. When we utilize this approach for our wildlife, we are also aiding that animal (bird, sea creature or mammal) to internally and externally relax, thus aiding digestion, blood flow, chemical balance, and a healing of injuries, stimulation of adrenal glands (leading toward a boost in the immune system).

Here again is a win-win situation for the animal through you, the caretaker. Of course, ultimate care should be taken whenever you physically touch any animal, especially a wild one. I would no more approach a mountain lion to perform a leg massage than I would put my head into its mouth. Massage has been utilized, however, when the animal is under anesthesia, is immobilized due to trauma, and particularly, for the cottontail, when it has been injured/tossed around by a dog, cat, or human. Therefore, below are the techniques that I utilize on behalf of the cottontail, but these techniques could indeed be translated for larger mammals and avians.

Cottontails are pure vitamin B creatures – their stress levels can and are often very high, particularly in captivity. If your cottontail is weaned and on its way to being released, I would advise against any human contact with the creature. Just your touch alone could stress the cottontail to a dangerous point. However, if your cottontail still has its eyes closed, or they are just beginning to open or if the cottontail is in shock and nonresponsive, then it is a good candidate for proactive massage.

First you need to center yourself and identify your breathing patterns. If you hold your breathe while performing massage, you are locking within yourself your own inner pain, turmoil, expectations levels and so forth and therefore cannot connect totally and purely with your patient. Breathing is the key and the essence to life, and is everything to appropriate and healing massage. Once you have focused and identified your breathing patterns, you can then touch your client, the vulnerable cottontail.

With usually only one fingertip, and your breathing pattern steady and deliberate (breath in through your nose and out through your mouth, bringing the air right down into the diaphragm and up through your lungs and out) begin one or a combination of the following motions/touches:

1. Using your fingertip, gently and with almost no pressure (much like a feather) smooth the muscles all around the head, neck and shoulders of the cottontail. Cottontails like to have their noses stroked, from tip of nose to just behind the ears. Remember that predators always

go for the neck of the animal, and rabbits are especially aware of anything that is near or on their neck. Stroke in one direction only, slowly and soothingly. This is a very hypnotic motion to the rabbit and is extremely useful in calming and allowing adjustment to a new environment.

1. Using your thumb and “pointer” finger, gently stroke the ears of the cottontail (eyes are open at this point). If it is a neonate and the ears are still closed, gently stroke around the ears and then away from the ear in one motion. By pulling your stroke around and then away from whatever area you are concentrating on, you are releasing energy back into the “ethers” and away from the cottontail. Thus, stresses are reduced and taken “away” from the cottontail by your stroke and release motion.
2. On the abdomen of the cottontail (neonate to eyes just opened to 14 days old or so – you will know if the cottontail will allow you to pick it up and perform this motion), slowly and gently massage in either circles or long strokes from just below the ribcage all the way down to the tip of its tail. This stroke is especially useful when there is bloat and/or enteritis developing or existing.
3. Finally, you can gently, again as if your fingers were feathers, slowly stroke or use small circles all over the neonate and/or eyes opened (just) cottontail. When you stroke the cottontail from the tip of its nose to the tip of its tail, you are helping to align the magnetic and electric circuits of its body. You are aiding in many factors internally; not the least of which is brain stimulation to the rest of the body.

The cottontail is the beneficiary of your care, your attention, your love and your knowledge. With the use of massage in your daily regimen, before and after formula feedings, for instance, you will notice a difference in the calmness and adjustment of the cottontail to its environment and you, its caretaker. All in all, a pretty wonderful event in which to be a part!

RELEASE AND CLOSURE

It's time. Your cottontail is at least 90+ grams, healthy, shys away from you or is visibly "frightened" of you and is totally on a natural diet. Your release site should be as free of predators as possible, which is oftentimes very difficult to find, for obvious reasons! You have put more hours into this creature than you have your family or given to yourself, and you want to release him in the best environment possible.

Release your cottontail where there are other cottontails. They are a very social group of mammals, and since yours is still a baby, will not pose a hierarchical threat to the warren and will be welcomed as one of theirs.

Release your cottontail (ideally) at dawn or just at dusk. That is when their senses are at their most keen, and their instincts become awakened.

Release in weather that is good – and not when you are expecting a storm or freezing weather.

Try to release before winter sets in – or you may have to winter him over!

Release where there is plentiful pastureland and natural grasses and also where there is a water source and good coverage in which to hide.

Try to release in groups – oftentimes they will hop off together!

Closure

Thank heavens they grow up and go to college in a very short time! But cottontails are one of the most demanding and fragile of Nature's creatures. The time you invest in their care is invaluable and worthwhile. For me, it is such an exciting moment when the cottontail's eyes open and they "see" you for the first time. Sleepy-eyed wonders, sitting in the palm of your hand, half-grown and half child. Your heart gets stolen each time!

I hope and trust that the information in this manual has been beneficial to the rehabilitation of your cottontails. Nothing is perfect, and certainly that goes for me! I learn something new each day, and each cottontail that comes through my sanctuary shows me that I have not learned it all JUST yet!

So now it's time to put away the syringes and nipples, sterilize and store the carriers and cages, clean out the refrigerator of baby jars and greens, and plan for next season's babies. Good luck to each of you, take from this book what you need, and let me know what you think and what has worked for you! It's all a learning process, all a growing thing, and not one way is the only way.

From my sleepy-eyed wonders to you, good night, with Love,

Diana Orr
Wildlife Rehabilitator
State Licensed
Eastern Cottontail – 13 years and hoppin'
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Rabbit Rescue/Rabbit's Rest

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Elaine Long, Wildlife Rehabilitator – Houston, Texas
Jan Turner, Wildlife Rehabilitator – Indiana
Judith Kirsch – Wildlife Rehabilitator – New York
Pat Issacs – Wildlife Rehabilitator – South Carolina
Dr. Patty Weber – All Care Veterinary Hospital
Dr. Pam Henricks – Garden Ridge Animal Hospital
Dr. Karen Lass

For all their care and support!

***Major Special Thanks to Eric Orr – his heart IS as big as Texas
(as all of our animals can tell you!)***

Resource List

1. IWRC Basic Skills Manual – **Rehabilitation Notes: Cottontails: (*Sylvilagus floridanus*)**
Author: Dr. Ann Buglass Hiss – Chesapeake Wildlife Sanctuary
Wildlife Journal, Vol. 11, No. 2, 1988
2. Linda Tellington-Jones – Ttouch and Tt.E.A.M. thanks to Leah Camou, Ttouch Practitioner III Level
- 1. Multidisciplinary Management of the Nursing Eastern Cottontail by:
Eileen M. Piver
Camelot Wildlife Refuge, Inc.
10840 Little Patuxent Pkwy #400
Columbia, MD 21044
Published in the 9th Annual Symposium of NWRA Feb. 20-24, 1991**
1. Bach Flower Remedies – Oxfordshire, OX14 5JX, England
2. Fox Valley Animal Nutrition Products – P.O. Box 146, Lake Zurich, IL 60047.
Sales – 1-800-679-4666/Technical Support – 1-888-782-4916
1. 6. Feeding Tech – 1-800-688-0850 – <http://www.feedingtech.com>
feeding tubes for very small mammals
7. Health Care Logistics – 1-800-848-1633 – <http://www.hcl-intl.com>
for really good syringes
8. KV Vet Supply – 1-800-423-8211
 1. for catab nipples (\$2.70 for a package of 3. Manufactured in England)
syringes
9. Heinhold Feeds – Doc’s Bunny Enhancer 1-800-331-8673
 1. (7lb. @ \$8.45 plus shipping and handling)
10. Upco – 1-800-254-8726
 1. for Biosol and other miscellaneous supplies
11. Jeffer’s – 1-800-533-3377
for miscellaneous supplies

