

# Protocol for Raccoon Rehabilitation

## GENERAL DISCUSSION

The raccoon is an intelligent, charismatic small predator that has adapted well to life in cities and suburbs, taking advantage of an abundant supply of readily available pet food and human refuse. Because of their charisma and quick intelligence, many have become habituated, occupying the same ecological niche as pet dogs and cats, and thus becoming one of the primary species to come in conflict with humans. Too often they are considered as nuisance wildlife. For this reason, the natural history section includes information relevant to nuisance wildlife control.

Nuisance Wildlife Issues: Raccoons are frequently at the center of the controversy between the general public, Nuisance Control Wildlife Operators (NWCOS) and rehabilitators, so rehabilitators play a key role in public education. Public education, in turn, is a key element of reducing nuisance wildlife issues—helping people see the role they, themselves, play in creating nuisance animals, such as inadequate trash containment and feeding wildlife.

Raccoons as pets or educational animals: Keeping any native wild animal as a pet is illegal in California. While an individual raccoon can become relatively tame its general temperament and disposition make domestication as even an educational animal unsatisfactory. Raccoons are intensely inquisitive, and if frustrated or bored, can become extremely destructive. When sexually mature, even the most docile animals can become aggressive and unpredictable; if neutered, they often become lethargic and depressed.

As an educational experience, an apparently domesticated raccoon can send a conflicting message to the public. For the raccoon, a high level of stimulation is required to keep the animal psychologically healthy, and even in the best of situations this can be difficult to maintain.

For these and other reasons, successful rehabilitation will depend heavily on keeping hand-reared raccoons wild.

## NATURAL HISTORY AND PUBLIC EDUCATION

Understanding the natural history of this species will be useful both in understanding the species' needs in rehabilitation, and in helping resolve human/raccoon conflict issues.

### Social Behavior

The raccoon occupies a home range that overlaps with the ranges of other raccoons. The size of an individual's range and its tolerance for other raccoons varies according to the availability of food, water and suitable den sites. In cities and suburbs with plenty of human refuse, a range can be as small as half a mile; in the country, more than ten miles. In areas that provide abundant food sources with the corresponding high population density, raccoons can become fairly tolerant of each other, sometimes traveling in groups and denning together. During mating season or at times of food scarcity, however, fights among raccoons can be brutal.

In California, raccoons do not establish permanent dens (except for the few weeks in spring when a female is raising young) but acquire the location of a series of "hides" along the trails of their territory. These may be located in trees, under thick brambles, dug

into the bank of a creek bed, in attics or crawl spaces or under hot tubs. Like motels in a first-come, first-served basis, they may be used by different animals on different nights.

Along with the “hides” within their territory, raccoons establish “latrine sites” that are used by all the raccoons within the area. In California where raccoon rabies is not currently present in the raccoon population, these latrine sites pose the main health risk to humans because of the contagious parasite shed in raccoon feces: *baylisascaris procyonis*.

*Baylisascaris procyonis* is not well-understood by the general public, and rehabilitators can help to educate people about the small, though real risk of humans contracting it from raccoon latrine sites. Especially dangerous are those latrine sites located where children play and can potentially ingest infective eggs, such as sandboxes. These latrine sites are serious health hazards and should be removed. Raccoons will relocate a latrine site if scent deterrents are used for several days in the immediate area (Ray, 2007). *See Parasites.*

### **Rearing young**

Mating season in North America is from January to March; In California it may begin in December. When their hormones rise, males become restless and aggressive, and will travel great distances seeking a receptive female. Like cats, ovulation is initiated by copulation, and the persistent, sharp calls uttered by the female during copulation are very audible. If the female does not become pregnant during the first estrus, she can come into season again four months later.

Gestation is 60-73 days long. A litter of one to six (usually three or four) kits are born weighing about 70 grams each. Ears open after 13 days and the eyes after 22 days. When she senses her time to give birth, the female will attempt to find a safe nest site. This is the only period when a raccoon will establish a “permanent” den site in one of her more secluded “hides”. The mother may have two or more nest sites, and may move the kits if one site becomes threatened or uninhabitable. Disturbing a den area physically or squirting commercially available coyote urine into a den area is often all that is needed to trigger a mother’s response to relocate (Ray, 2007).

For the first few weeks of their lives, the kits nurse and sleep, and are alone only when the mother leaves to forage. When their mother is absent, the kits instinctively become silent and still. At about a month old the babies become more active. When the den is located in a crawl space of a house, this is often the time their presence becomes apparent to people (Ray, 2007). At about seven weeks the young begin to leave the den with the mother on nightly hunting expeditions, and when they are ten weeks old the family will abandon the natal nest and begin to learn her territory and use the nightly “hides.”

Weaning occurs when the kits are about two months old; and by four months they are reasonably self-sufficient, even though they may remain with their mother for protection for up to a year. The family may separate for periods of time and then reunite, with apparent recognition. This long dependence and recognition has implications for rehabilitators when considering reuniting young animals and also when considering the suitability for release of captive-reared animals.

Beginning in mid-August and continuing through the end of September in California, juvenile behavior also frequently includes foraging for grubs. Treating lawns

(non-toxically) for grubs in spring prevents this seasonal destructive behavior. Chicken wire temporarily tacked over the lawn with irrigation tubing stakes provides immediate resolution of the problem (Ray, 2007).

Trapping the animals has proven unsuccessful. Once a raccoon sees a sibling or mother struggling to escape a trap, the others will avoid it. California legislation has made it illegal to relocate wildlife. Trapped wildlife can only be immediately released in the area where trapped, immediately humanely euthanized or held for 48 hours (providing food, water and shelter) while structural exclusion is in progress before being released in the area where trapped.

*The California Code of regulations, Title 14 (T14), Section 679 (f) (4) states in relevant part: "...These regulations do not authorize any person, facility or organization to accept, possess or relocate nuisance wildlife. Any healthy wildlife trapped in towns or cities or removed from under buildings or otherwise taken or trapped because of human/animal conflict shall be immediately released in the area where trapped or disposed of as directed or authorized by the department [of Fish and Game]." (Belt, 2003).*

### **INTAKE SCREENING OF ORPHANED RACCOONS**

Raccoons are very attached to their young and have good memories; mothers will return to the place they were separated from their kits for several nights in an attempt to find them. They recognize their babies' voices and scent, and will not be put off by the smell of the humans' touch (Sorensen, 2004; Miller, 2000).

A healthy orphan's history will determine whether a reunion with its mother is an option. Generally, if the mother is alive, healthy, uninjured, and has not been illegally relocated, a reunion should be attempted. If an exclusion has closed a den opening, reuniting mother and kits is generally successful (Ray, 2007). Interviewing the finder also provides the opportunity to educate and possibly enlist their help. The history will also reveal clues to possible problems that may develop in the first stage of intake—such as degree of dehydration, possible hidden injuries or exposure to viral diseases.

If the babies have been without food for an extended period of time, they will need supportive care and possibly medical treatment. Reunion is unlikely to be successful after a long period of separation.

To reunite infants: if healthy and stable, infants can be left in a cardboard box or partially opened kennel (with a heat source, if necessary) in a protected area where the mother will be most likely to look for them. The box or kennel should be placed in the area at dark, and left there untouched until right before dawn. Unless they are cold or hungry, the babies are not likely to crawl away from a secure warm nest. After dawn the rescuer should check the box, and if the babies are still there, take them back into care for the day of feeding and care until the following night, when the procedure should be repeated. After three nights, it becomes less likely that the mother will return, and the animals should be considered orphaned or abandoned (Cotten, 1999).

To reunite older juveniles: if healthy and stable, older juveniles can be left in the area the animals were separated, at dusk, in an unlatched kennel. The juveniles will stay in the kennel until their mother returns.

## RACCOON REHABILITATION GUIDELINES

Raccoons are highly stressed by being alone. Every effort should be made to raise orphaned raccoons with at least one other member of their species. In young raccoons, a successfully bonded pair can be created with a difference of as much as four weeks of age. With older juveniles several months difference in age will not cause problems as long as you are able to monitor the younger animals to be sure they are able to keep up with the older ones. When attempting to match two single orphans, matching their development stage is more important than matching weight, which can vary considerably. Dental development is a good rule-of-thumb to use in gauging age. The average age of eruption for raccoon teeth is as follows (MacClintock, 1981; Evans, 1985):

- Deciduous incisors: 4 weeks
- Premolars: 6 weeks
- Permanent teeth replace deciduous teeth:
  - 1st incisors: 8 weeks
  - 2nd incisors: 10 weeks
  - 1st molars: 11 weeks
  - 3rd incisors: 14 weeks
  - Canine: 16 weeks

### Development

- Birth-2 weeks:** Silver-colored sparse fur; mask and tail rings barely visible. Eyes and ears closed. Blunt muzzle with no teeth. Able to crawl; activity is mainly to eat, sleep and eliminate (with stimulation). No response to sound or sight. Umbilicus drops off at about four days. Average weight is 70-200 grams (range 60-225 grams).
- 2-4 weeks:** Mask is fully haired. Overall fur more dense and tail rings prominent. Characteristic vocalizations present. Increasingly active. At 20-22 days eyes open (usually one at a time). Ears open, detach from head and become more upright; ear canals open, but still no response to sound or sight. Will begin to walk. Average weight is 200-300 grams (range 175-400 grams).
- 4-6 weeks:** Guard hairs appear. Partially visual; hearing and interpretation of sound developing rapidly. Coordination improving; beginning to climb. Average weight is 300-550 grams (range 250-700 grams).
- 6-8 weeks:** Vision and hearing is becoming developed. Beginning to urinate and defecate in latrine area of cage. Should become slightly feisty when handled; very curious and playful—running, climbing, pouncing, wrestling, and growling. Average weight is 550-850 grams (range 430-1200 grams).
- 8-12 weeks:** Distinct color patterns are obvious. They are very active, aware, fast and curious. Good coordination and hand control; agile climbers, learning to use rear foot inversion. Average weight is 850-1850 grams (range 650-2500 grams).
- 12-16 weeks:** Guard hairs prominent. Defensive postures, growling, snarling, and fear of humans should be noticeable. Average weight is 4-6 pounds (range 2.9-10 pounds)
- 17-22 weeks:** Ready for release. Average weight is 6-8 pounds (range 5-15 pounds)

### **Housing**

One litter of neonates can be nestled in a cardboard carrier or similar enclosure approximately 10-20 gallon capacity (Miller, 2000) in quiet room until they begin to move around. If using a cardboard carrier, place a heating pad set on 'low' on the bottom of half of the carrier and line with towels. Be sure the infant can move easily off and on the heat. Drape a towel over the outside of box to reduce the amount of noise stress.

As they develop, they can be moved into consecutively larger kennels or cages. Two adjoining medium plastic kennels or medium-large plastic kennel with natural toys, things to climb on and a heavy water bowl. Can be outdoors during the day in warm/shaded-protected area such as deck and brought in at night. Minimum standards recommend 3' x 3' x 3' for three animals (Miller, 2000). Once fully furred, supplemental heat should be gradually discontinued.

As soon as possible after they are able to thermoregulate, raccoons should be moved outdoors. Large kennel or cage with small nest box and hammock or puppy pen with nest box. A 6' x 8' x 6' wood and wire cage enclosed on all sides, including top and bottom, covered in predator-proofed 1/4" – 1/2" hardware cloth, would be adequate for 4 animals. Provide a latrine area or box and large water bowl, climbing branches (with soft straw underneath to land on), logs, bones, swing, pool and other natural toys and materials.

As they outgrow a large kennel or cage, they can be moved into a larger cage or run with nest box, latrine area or box and hunting pool. Provide large water bowl, branches, logs, bones, swing or hammock and other natural toys and materials that will stimulate the animals and allow them to move vertically as well as horizontally. minimum standard requirements (Miller, 2000) suggest 30-sq. feet per adult animal; The enclosure should be enclosed on all sides and have a shaded/roofed area with provision for protection in the event of rain.

Providing opportunities to explore out doors during the course of rehabilitation will improve the chances of successful release. Wild raccoons at this age would be learning things we cannot replicate: wild food sources, territories enemies and dangers. To successfully prepare a raccoon for return to a wild life, we need to provide an adequate education in foraging, recognizing wild food sources, climbing and social interaction as well as a healthy fear of humans and their habitations.

### **Diet and feeding**

KMR or Fox Valley Raccoon formula are recommended for neonates (Marcum, 1993; Moore and Joosten, 1997). Supplement with full-fat yogurt in formula at least once a week (MacLeod and Perlman, 2003). Use a small nipple on a syringe or a regular baby or preemie nipple on a bottle. Tube-feeding as practiced on opossums should not be used on infant raccoons except in extreme temporary circumstances.

The amount to feed is based on the standard placental mammal formulas for growth divided by the stomach capacity (about 5% of body weight). Several feeding charts are available. Weigh young animals daily and feed 5% of body weight at each feeding (Marcum, 1993). Over feeding may cause bloat (which can be fatal) and will certainly cause diarrhea. As the animals grow, increase the amounts accordingly and decrease the number of feedings. Healthy animals should gain weight steadily.

Weaning can begin between 6 and 8 weeks, and should be complete by 10-12 weeks. The raccoon's digestive system matures relatively slowly, so weaning will be easier for the caregiver and less stressful for the raccoons if they are weaned at the later ages. Watch for diarrhea, as this can indicate weaning is progressing too quickly. Favorite weaning foods are ripe persimmon, eggs scrambled with formula, grapes and avocados. Weight should be regularly monitored. Once animals are assimilating a balanced soft diet, an assortment of fruit, nuts, puppy kibble, and cut up whole meats such as mice, chicks or smelt should be made available. (Martin, Zim, Arnold, 1951).

After 12 weeks of age, hunting and foraging skills should be encouraged with live king mealworms, goldfish or bait minnows, crawfish, insects, snails and worms, mice, clams, oysters and other shellfish, unbroken eggs, acorns, hidden food and other creative foraging opportunities. Feed at night to minimize wasps and flies, and to encourage nocturnal behavior.

### **Hygiene**

Neonates will need to be stimulated for urine at each feed, and at least once a day for feces. While on formula, normal feces are formed and bright yellow (White, 1989). Discontinue stimulation when you begin to observe self-elimination at about the time they begin to move around (about four weeks of age). Once on solid food, normal feces will darken and resemble small dog feces.

Young raccoons are prone to diarrhea and most carry coccidia—even though it may not appear on a fecal examination (Leavey, 2005). Consult with your veterinarian to determine whether a prophylactic treatment with Albon or Baycox may be advisable.

By five to six weeks of age they will begin to develop the instinct to defecate in one area of the kennel or cage. Placing a litterbox in this area will simplify cage cleaning throughout the rehabilitation process. They may also develop the instinct to urinate and defecate in their water pool. This behavior should be discouraged early because it can contribute to group outbreaks of protozoan and bacterial infections.

For older animals that are housed in larger groups, cage hygiene is essential, as this is the stage of rehabilitation when animals are most prone to outbreaks of contagious disease. Cages should be designed so that foods not eaten during the night can be easily removed the next morning and the flooring hosed into a sewer. Clean water and litter boxes twice daily, and bedding as often as needed.

Because of the potential danger of *Baylisascaris procyonis* to humans and other species, special care should be taken to maintain proper hygiene and regular worming schedules established by your veterinarian or medical staff. Regular administration of an effective anthelmintic and prompt removal and proper destruction of raccoon feces will minimize risk of exposure and possible infection.

Avoid contaminating hands and clothes when handling raccoons or cleaning cages or dishes. Chlorine bleach at a dilution of 1 part bleach to 32 parts water should be used to disinfect clothing, caging and dishes. It should be noted that bleach does not kill the egg, but does interfere with the sticky coating so it can be dislodged and flushed.

### **Preventing habituation**

More than vision, young raccoons have a well-developed sense of hearing. Very early in their development, human sounds will begin to cause habituation. Human sounds

should be minimized. Churring sounds like those made by the natural mother, however, may serve to calm the animal and help it recognize the caregiver.

Tactile interaction with neonates may be necessary, especially if you are rearing a single animal by itself. Raccoon puppets and warm water bottles can simulate the experience of siblings. A regular period of tactile “play” with puppet and single will prevent depression and other problems of inactivity, such as constipation. Every effort should be made to locate a mate before a single animal’s eyes open.

In general, after 8 weeks, every effort should be made to minimize tactile contact. By 10-12 weeks, all human contact should be perceived as a negative and unappealing interaction. After 14 weeks, absolute minimal interaction with human caregivers will help animals switch to a nocturnal habit with main activity periods being just after dark and just before dawn. By the end of this period, attempted handling by anyone but a primary caregiver should be difficult, requiring two people and appropriate gloves

### **CONTAGIOUS DISEASES OF RACCOONS**

Raccoons may be admitted to rehabilitation facilities in large numbers and are often housed in communal cages which creates an unnaturally close proximity to feces and urine. Spoiled or rotted foods attract insects and other free-ranging feral or wild mammals that act as vectors for diseases. Excellent hygiene is essential.

Raccoons are susceptible to a wide variety of pathologic microbes. With prompt and accurate veterinary diagnosis and medications, the bacterial, fungal and parasitic pathogens are treatable. Preventive vaccines can help the rehabilitator manage and control the viral diseases. For the safety of any communal group, a thorough examination, including fecal tests, should be performed on intake. Due to the highly contagious nature of viral diseases, a quarantine of at least two weeks is recommended before combining groups.

#### **Bacterial Diseases**

Common bacterial diseases of raccoons include E. Coli 0157:H7, Leptospirosis and Salmonellosis. E. Coli and Salmonellosis can be contracted from tainted food sources and spread through fecal-oral contamination; Leptospirosis is generally contracted from contaminated water sources. Raccoons with leptospirosis are often asymptomatic.

#### **Fungal Diseases**

Ringworm (Tinea) is a common fungal infection affecting the skin. Fungal infections are often opportunistic infections following antibiotic treatments for other illnesses. Bleach at a dilution of 1:10 will kill 80% of fungal spores on surfaces.

#### **Parasitic Diseases**

Parasites include arthropods such as fleas, ticks and scabies mites, and intestinal parasites such as Chlamydiosis, Cryptosporidiosis, Giardiasis, and *Baylisascaris procyonis*. Because cryptosporidiosis is very common in raccoons, a prophylactic course of Albon or Baycox may be useful in preventing outbreaks of diarrhea. (Leavey, 2005) Of special concern in raccoons is the parasite *Baylisascaris procyonis* because of its potential for transmission to other species, including humans.

*Baylisascaris procyonis*, the intestinal roundworm species found commonly in raccoons, is similar to *Toxocara canis* and *Toxocara cati*, the dog and cat roundworms. Like *Toxocara* spp., when it is ingested by species other than its reservoir host, it can travel through the organs and muscles (larva migrans) and cause damage to the central nervous system of the secondary (paratenic) host. (White, 1993; CDC, 2002).

Baylisascaris eggs have a tough sticky coating that breaks down under ultraviolet sunlight and becomes infective after 2-4 weeks. The eggs can be resistant to many environmental conditions, and with adequate moisture, can survive in the soil for years.

Infection in raccoons is fairly common, but rarely causes symptoms in them. The infection is diagnosed by the identification of eggs or larva in a fecal floatation exam.

Fecal tests in raccoons under four weeks of age do not reveal eggs, but may show newly-hatched larva, which are too young to produce infective eggs. For this reason, and for the safety of the neonate, anthelmintics are not recommended until the animal reaches 400 grams. At that time, a regular worming schedule should be prescribed. Products found to be effective on *Baylisascaris procyonis*, include piperazine, fenbendazole, pyrantel pamoate, levamisole and organophosphates such as dichlorvos.

### **Viral Diseases**

Raccoons are susceptible to Canine Distemper Virus (CDV) and Raccoon Parvovirus (RPV). Raccoon Rabies is a third viral infection that is endemic to raccoon populations in the eastern and southern United States. As yet, the strain is not present in California.

Canine Distemper (CDV) is a Morbillivirus that affects a wide range of carnivores, including raccoons. The virus enters the respiratory system and spreads to lymphoid tissues. Symptoms of canine distemper include upper respiratory symptoms that can look like a bacterial upper respiratory infection and the appearance of tameness or docility, followed by central nervous system symptoms such as seizures. The animal may maintain a good appetite up to the point that seizures begin. Once diagnosed, canine distemper is so rarely treatable that for humane reasons, the animal should be euthanized. Prevention is the best course of action. (*See Vaccines.*)

Raccoon Parvovirus (RPV): Parvoviruses have adapted to a great number of carnivore species. The Raccoon strain is virtually indistinguishable from the Feline Panleukopenia Virus (FPV). The Aleutian Mink Disease Virus (AMDV) is a variant of FPV and RPV. (Parish, 2004). Peak symptoms generally appear 5-7 days from exposure. Peracute disease is sudden onset of depression, vomiting and death within 12-24 hours. Extreme diarrhea, subsequent dehydration, abdominal pain and lethargy are the symptoms. Survival rates are rare and it is extremely contagious to other raccoons.

RPV can be contracted by inhaling or ingesting bodily fluid containing the FPV or AMDV virus, which is shed in feces or oral secretions. This virus can remain contagious in the environment for up to two years in feces and urine.

There is wide variation in the severity of clinical disease from sub-clinical to peracute fatal disease. With veterinary assistance, it may be treatable if identified and treated quickly enough. Experimental tests are now being done with the new human anti-viral medication Tamiflu by Roche. While viral infections are not susceptible to antibiotics, opportunistic secondary bacterial infections may also be present. Prevention is the best course of action. (*See Vaccines.*)

### **Vaccines**

Purevax (Merial) is the recommended vaccine for Canine Distemper; Felovax PCT (Fort Dodge) is a feline infectious enteritis vaccine that has proven effective against Raccoon Parvovirus. Vaccinations should not begin until the animal reaches about 8 weeks of age with a body weight of at least 700 grams. At this age it is less likely that the vaccines will conflict with any immunity still present from the mother. In areas where distemper and parvovirus are known to be present in the local wild population, young animals should not be moved into outdoor runs until they have completed two of each of the vaccines.

### **RELEASING RACCOONS**

**Adult Raccoons:** Adult raccoons shall be released within one mile of the location at which they were found. Raccoons learn their territory from their mother, and release into the territory of another adult is likely to result in injury or death of the relocated animal. Even if the adult's territory is in an urban area, that animal will know the safest routes and back alleys within one-half mile of where it was found.

**Juvenile Raccoons:** Raccoons should be released in groups of two to six animals that are bonded to each other (Lerman, 1982). Juvenile raccoons should be released at their natural dispersal age (generally after 17 weeks of age) while they are still young enough to not be a threat to adult males and smart enough not to get in their way, but old enough to protect themselves. In general, a litter should be released within one mile of where it was found orphaned, provided there is adequate habitat and secluded areas to allow them to safely work their way into the local population.

Juvenile groups comprised of mixed litters should be released within the county of their birth, and within three miles of where at least one or more of the litter originated. A fat, healthy four-month-old 6-lb raccoon can be released with older heavier animals, as long as the smaller one can demonstrate the same skills as the bigger ones (Fosco, 1998). Slow releasing raccoons is preferable, whenever possible.

### **Release Criteria For Human-reared Raccoons**

Raccoons are ready for release when they can meet the following criteria:

- They have been a part of a releasable group of at least two and preferably six individuals for at least two weeks.
- All animals in the group are healthy, parasite-free and able to compete successfully with their littermates for food.
- All animals in the group have been housed outdoors, are able to live hunt and kill prey and have remained healthy with no medical support from humans for at least two weeks before release.
- Their deciduous canine teeth fallen out (approximately 17 weeks).
- They are able to recognize their natural foods and can compete with wild juveniles of a similar age.
- They have been as well fed as possible, with a good layer of fat to help them through the transition to life in the wild.
- They are at least four months old and weigh no less than 6 pounds.

**Release Sites and Options for Human-reared Raccoons**

- Raccoons should be released in suitable habitat within the county where they were found.
- When possible, a stream, lake, marsh, swamp or other permanent source of water where the raccoon can hunt for resident prey should be on the site. Those seasonal streams which are nothing more than rain runoffs will not be acceptable hunting grounds. Oak woodlands are ideal, as the mast crop (acorns) supports many levels on the food chain. Sites can be on private (with permission) or public land.
- Avoid prime nesting areas for native waterfowl, or areas near game and poultry farms. Avoid areas that are already overpopulated with raccoons. Human-reared young animals will not be able to compete with a dense population of established locals.
- If in doubt about a release location, consult with CDF&G to be certain it is not one on which raccoons could have a negative impact on endangered or threatened species.

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Citations:

Belt, Tom, Captain, Department of Fish and Game Law, Enforcement Division, Region 3, 2003. *Proper Handling of Trapped Nuisance Wildlife*, address to the January 23 meeting of the California Nuisance Wildlife Control Operators Association, San Francisco, CA. ([www.cnwcoa.org/proper\\_handling.htm](http://www.cnwcoa.org/proper_handling.htm))

Bontá, Diana M., R.N., Dr. P. H., 2001. *1999-2000 Annual Rabies Report*, California Department of Health Services, [www.dhs.ca.gov](http://www.dhs.ca.gov)

CDC – Center for Disease Control and Prevention, Division of Parasitic Diseases, 2004., [www.cdc.gov/ncidod/dpd/parasites/](http://www.cdc.gov/ncidod/dpd/parasites/) and [www.cdc.gov/ncidod/diseases/](http://www.cdc.gov/ncidod/diseases/)

Cotton, Coral, WildCare Raccoon Team Lead, 1997-2000, personal communication

DeGhetto, Dorene, DVM, 1998. *Chlamydiosis in Raccoons*, NWRA Quarterly, Summer.

Evans, Adele T. and Evans, Richard H., DVM, MS; 1985-1986. *Raising Raccoons for Release*, Veterinary Technician, Vol. 6, #5, page 256, (Vol. 6, #6, Vol. 6, #8 Vol. 7, #1. Also published in NWRA Proceedings, Vol. 3.)

Parish, C. R.; Leathers, C. W.; Pearson, R.; Gorham, J. R.; 1987. *Comparisons of feline panleukopenia virus, canine parvovirus, raccoon parvovirus, and mink enteritis virus and their pathogenicity for mink and ferrets*, James A. Baker Institute for Animal Health, New York State College of Veterinary Medicine, Cornell University, Ithaca, NY.

Fosco, Lisa, 1998. *Raccoon Foster Care Manual*, WildCare, San Rafael, CA.

Leavey, Mary Elen, DVM, 2005. Animal Hospital of Cotati, CA, personal communication

Lerman, Mark, DVM, 1982. *Comprehensive Raccoon Rehabilitation*, published in the NWRA Proceedings Volume 1.

MacClintock, Dorcas, 1981. *A Natural History of Raccoons*, Charles Scribner's Sons, NY.

MacLeod, Astrid and Perlman, Janine, Ph.D., 2003. *Wildlife Feeding and Nutrition*, IWRC publication, Berkeley, CA.

- Marcum, Debbie, 1993. *Hand-rearing Non-domestic Mammals*, International Wildlife Rehabilitation Council, Suisun, CA.
- Martin, Alexander C.; Zim, Herbert S.; Nelson, Arnold L.; 1951. *American Wildlife & Plants: A Guide to Wildlife Food Habits*, Dover publications, Inc., NY.
- Miller, Erica S., DVM, editor, 2000. *Minimum Standards for Wildlife Rehabilitation*, Third Edition, International Wildlife Rehabilitation Council, Suisun, CA and National Wildlife Rehabilitators Association, St. Cloud, MN.
- Moore, Adele T., and Joosten, Sally, 1997. *Principles of Wildlife Rehabilitation*, National Wildlife Rehabilitators Association, St. Cloud, MN.
- North, Sterling, 1966. *Raccoons are the Brightest People*, E.P. Dutton & Co., Inc., NY.
- Parish, C. R.; Leathers, C. W.; Pearson, R.; Gorham, J. R.; 1987. *Comparisons of feline panleukopenia virus, canine parvovirus, raccoon parvovirus, and mink enteritis virus and their pathogenicity for mink and ferrets*, James A. Baker Institute for Animal Health, New York State College of Veterinary Medicine, Cornell University, Ithaca, NY.
- Parrish, Colin, Professor of Virology, 2004. Cornell University, personal email.
- Ray, Jamie, Executive Director, 2007. Rescued Orphan Mammal Program, San Francisco, CA, personal communication.
- Sorensen, Elaine L., 2004. *A Manual for Raising Raccoon Cubs*, Eden Prairie, MN.
- Taylor, JoLynn, 2003, 2004. Two-year Weight Study of Orphaned Raccoons in Rehabilitation at WildCare, unpublished.
- White, Jan, DVM, 1993. *Basic Wildlife Rehabilitation IAB, Fourth Edition, Rehabilitation Notes: Raccoon*, International Wildlife Rehabilitation Council, Suisun CA.
- White, Jan, DVM, 1989. *The Raccoon*, IWRC Journal, Winter.