

Chapter 19

Reuniting Wildlife

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Section 1

Reuniting Basics

Why Reunite?

Each year the struggle to provide care for large numbers of healthy wildlife orphans places a heavy burden on wildlife rehabilitators. But these healthy "orphans" should really be separated into two groups: young animals whose parents are dead (true orphans) and young animals that have accidentally been separated from their healthy parents. Typical causes of separation include the destruction of the nest or den by some natural cause, such as a storm, or by human activity, such as tree removal. In many cases, the parents are unharmed. Yet when rescued by compassionate humans, the young animals are routinely viewed as orphans, when in fact they are merely "lost." In human communities, lost children are not called orphans. We consider it a basic act of decency to return them to their parents. The same moral logic applies to lost, young, wild creatures. We owe it to them—and to their parents—to reunite them whenever possible.

Reuniting lost wild juveniles is a win-win for both humans and wildlife. Wildlife rehabilitators who routinely reunite any healthy lost juveniles see direct benefits. When there are fewer animals to care for, there is more time to care for each patient, resulting in enhanced quality of care. There is also less stress on scarce resources and funds, and less stress on dedicated staff and volunteers.

The benefits to the reunited juveniles are even greater. Healthy, young, wild animals that grow up in the care of their parents have clear advantages over those that are raised by wildlife rehabilitators. Social interactions with parents and siblings help them develop the normal range of behaviors they will need to function as adults: they learn to interact appropriately within a dominance hierarchy, to defend a territory and recognize potential mates. Growing up in their parents' territory and eating a normal diet for young of their species, they gain peak physical fitness to survive in appropriate habitat. They also learn to hunt or forage for food with the aid and protection of experienced adults, and they learn to recognize and avoid predators. Conditions to acquire some of these survival skills can be simulated in a well-managed wildlife rehabilitation facility, but the advantages of growing up in the wild can never be matched.

When accepting responsibility for a young animal's future life, each wildlife rehabilitator has a duty to offer the best possible care, leading to the best possible outcome. Reuniting healthy juveniles with their parents is nearly always the best option. This chapter provides

an outline of the basic practices for reuniting birds and mammals, based on key aspects of their natural behavior.

Who Should Reunite?

Reuniting is a deeply rewarding activity. It provides opportunities to observe and understand intimate aspects of wildlife behavior. And few experiences can equal the thrill of seeing an anxious bird or mammal discover and reclaim its missing young. Unfortunately, many wildlife rehabilitators find it difficult to take time away from patient care to reunite individual juveniles during the busy baby season. Organize a separate reuniting team to remove the burden from overworked staff wildlife rehabilitators.

More information on organizing a team can be found in Section 3, p. 316.

The Role of the Wildlife Rehabilitator

Specific tasks may be delegated to trained volunteers, but everyone must understand that the animal is in the custody of the wildlife rehabilitator, who has the final authority on all aspects of the reuniting process. As the permitted professional, the wildlife rehabilitator is responsible for obtaining a complete case history, performing a physical exam, stabilizing the patient, and deciding whether the animal can be reunited. The young animal remains in the care of the wildlife rehabilitator until it is reunited. The wildlife rehabilitator is the final judge of any question related to the safety and well-being of the animal until it has been returned to the care of its own parents.

Reuniting Action Steps

Even though each reuniting case is different, taking these steps routinely for every new admission ensures that reuniting is an option for every healthy juvenile.

Collect a Complete Case History

Successful reuniting is totally dependent on having a complete case history. The best opportunity to obtain this is at the time of first contact with the finder, as this may be the only chance for a detailed interview. Some finders lose interest once the animal is no longer in their hands and may not return follow-up phone calls. It's best to have a standard form ready to make sure you get all of the information. Here are the critical questions to ask:

Exactly where was the animal found? Most young animals have limited mobility and usually are found close to the nest or den area. It's important to find out the exact location, including landmarks that will pin it down to the nearest bush or tree. Getting this detailed information to begin with can save time and frustration later. If at all possible, arrange to have the finder show you exactly where the animal was found.

When was the animal found? If the young animal was found just a short time ago, reuniting is usually relatively easy. But sometimes, with careful questioning, it may turn out that the

finder has had the animal for several days—or even for weeks or months. If so, the animal may be suffering from nutritional deficiencies. If it has been treated as a pet, it may also have become habituated to humans. These are critical facts that you must find out in order to form the best strategy for helping the young animal.

What care has the animal received? If the finder has fed the animal, it's important to find out exactly what food was offered, how often, and when the last feeding occurred. For infants, bottle feedings of inappropriate formulas may cause diarrhea and other problems. For older juveniles, it's also important to ask whether the animal actually ate the food that was offered. Finders often say that the animal has been fed, because food was placed in the cage, but they may not report (or may not realize) that the animal did not eat. Accurate information is essential in assessing the young animal's fitness for immediate reuniting.

Were the parents seen? Sightings of the parents increase the certainty that a reunion will be successful. With birds, it's also important to know if there are other juveniles still in the nest, as it will make a difference in the reuniting strategy, depending on the species.

What caused the separation? Sometimes it's something obvious: a tree was cut down, or a storm blew the nest out of the tree. Even in cases of a destroyed nest, reunion can often be carried out immediately. There are many problems that would make reuniting unwise, so determining the exact cause of separation is an essential part of any successful reunion. If the cause of the problem is not immediately obvious, it's a good idea to ask questions about any possible actions the homeowner (or neighbors) may have taken that could have affected the mother. People often don't realize how their own actions, such as setting a trap for a northern raccoon, can result in finding orphaned kits three days later.

Perform a Thorough Physical Exam

No juvenile should be reunited unless it is healthy and uninjured. In most cases, a physical exam is needed to determine if the animal needs care before reuniting. If it is chilled and dehydrated, the mother will probably not reclaim the infant unless it first receives supportive care. Some healthy juveniles may also suffer minor injuries at the time of separation. For example, they may have been injured when falling from a tree. They may also be suffering from parasites, or they may have been injured after the fall by predators. If there are overlooked problems, such as puncture wounds concealed in thick down or fur, the animal could eventually succumb to infection, even if it is returned to its own mother. On the other hand, if minor problems are treated promptly, the reunion can still take place within a few days.

Stabilize the Animal

Whether or not the juvenile is to be reunited immediately, it usually requires supportive care (warmth, fluids, and appropriate nutrition). Reunions often take some time before actual contact is established between the parents and their missing young. If the young animal is well fed and hydrated, this will allow time for the reunion to take effect. Don't forget, many mothers, particularly mammals, will not care for reunited young that are chilled, injured, or seriously dehydrated.

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Reunite Quickly—Aim for a 24-hour Turnaround

Common sense says that reuniting within 24 hours ensures the highest rate of success with the least investment of time and effort. For the first 24 hours, the parents are usually actively searching for their lost young and are easily located. Remains of the nest or den are still fairly easy to find, and any remaining siblings are usually present. Also, the finder is usually available to direct the reuniting team to the exact location. It is possible in some cases involving birds to delay reuniting for up to a week or more if the situation requires a delay. But with each passing day, conditions at the nest may change, making it more difficult to locate the family and reunite the lost juvenile. To streamline reuniting efforts, reunite quickly.

Checklist: Animals meeting all of the following criteria should be reunited as quickly as possible:

- Juvenile is healthy.
- Separation is recent.
- Point of origin is known.
- Environmental conditions are acceptable.
- Parents are alive and well.
- Cause of separation is no longer a threat.

Reasons Not to Reunite Immediately

1. Juvenile is malnourished with heavy infestations of internal and external parasites. This is usually a sign that there was a serious problem caused by conditions in the nest or den prior to separation from parents. Do not attempt to reunite unless you know that the conditions that caused the original problem no longer exist, and the young animal meets all criteria for reuniting.
2. Crows (*Corvus brachyrhynchos*) or other predators are repeatedly attacking the nest, the adults, or the juveniles.
 - Crows: Crows have become a serious problem for nesting birds. Once they have found a nest, they may attack repeatedly, killing some and forcing other juveniles out of the nest. Very young nestlings are at greatest risk. Unless the nestlings are well developed and can be moved a short distance to a location with better cover, it's best not to attempt to reunite. Birds that lose their eggs or a very young brood of nestlings to predators will usually re-nest in another location.
 - Cats: Free-ranging and feral house cats are a major cause of mortality and injury to nestling and fledgling birds, as well as to young rabbits (*Leporidae* family), chipmunks, and squirrels (*Sciuridae* family). Some landowners remove healthy young animals from the care of their parents solely because of the presence of cats in the area, creating an additional burden for wildlife rehabilitators. Each case must be decided on its own merits, as cats are everywhere in the US. In residential areas, the best option, if possible, is to persuade neighbors to keep their cats indoors, at least until the end of nesting season.

- **Predators:** It is not the job of wildlife rehabilitators to take young wild animals away from their parents solely because of the presence of predators such as cats, northern raccoons, bobcats (*Lynx rufus*), coyotes (*Canis latrans*), or foxes (*Canidae* family) in the area. However, if a specific predator has already located and attacked a nest or den, it would be unwise to attempt reuniting in the same location.
3. **Environmental conditions are adverse.**
 - Extensive land clearance for development, tornado and hurricane damage, and large-scale, clear-cutting of forest land are all reasons not to reunite. The exception would be where the original nest or den was near the edge of the devastated area, and the adjacent land is undisturbed and provides similar habitat. In such a case, reuniting might still be possible, as the adults could care for their young in undisturbed habitat close to the original nest or den.
 - Long-term, sustained weather conditions such as drought may also be a reason to consider not reuniting. Depending on the species, long-term drought may create conditions that will inevitably lead to loss of the brood or litter. This is a species-by-species concern that will become increasingly common as the climate continues to change.
 4. **Sibling rivalry is the original cause of separation.**
 - In some bird species, especially some raptors, the largest members of a brood may force a younger, weaker sibling out of the nest, especially in times of food scarcity. Reuniting a weaker juvenile to be attacked again by older siblings will cause further suffering and probably death to the younger sibling.
 - Understanding individual species' behavior, and carefully observing the nest before reuniting, will prevent this kind of tragedy.

Fostering Back to the Wild

In some cases, if a healthy juvenile cannot be reunited with its own parents, it can be wild-fostered to another family with juveniles of the same age. If successful, this is the best alternative to reuniting, allowing the young animal to grow up in normal conditions in the wild. The first concern should be to make sure the adults can support additional offspring. In most cases, only one juvenile should be fostered to a particular family. Not all species can be wild-fostered, and great care should be taken in researching species behavior before making the attempt. Stressing the parents by adding more juveniles than they can support, or fostering a juvenile that is larger (or smaller) than the other juveniles in the nest or den, may result in the death of some of the juveniles.

Transporting the Juvenile to the Reunion Site

Depending on the age, size, and species, a closed cardboard box or a plastic pet carrier can be used to transport the juvenile to the reunion site. It's important to keep the juvenile warm and comfortable by providing appropriate bedding and supplemental heat, if needed. It's also important to prevent stress and provide a sense of safety by screening the

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juvenile from unfamiliar sights and sounds, using a towel or sheet to cover the container, and keeping voices low.

Reuniting Strategies

Special Concerns: Cornell University's Nestwatch website recommends a code of conduct when interacting with nesting birds.

It is designed to ensure that the birds in the nest are not harmed and that predators are not inadvertently attracted by the presence of humans at the nest site. Wildlife rehabilitators who are reuniting birds should be informed about this code of conduct and follow its guidelines. Even if the original nest has been destroyed, it's a good idea to follow the suggested guidelines when installing substitute nests.

Each case is unique and requires developing a reuniting strategy based on the particular circumstances of the case, such as the age of the animal, condition of the nest or den, etc., as well as the biology of the animal being reunited. For mammals, reuniting rarely involves climbing or other heavy physical effort. Rather, it involves putting the animal back in the den, in a reunion box close to the den, or along the mother's known travel route. This should be done at the appropriate time of day, depending on the species. If the mother is observed searching for her missing young, the infant should be put out immediately for her retrieval.

For reuniting raptors and some other bird species, it is often necessary to have the help of someone with training and experience as a tree climber. Songbirds (Order Passeriformes) frequently nest closer to the ground and may be reunited with the use of a step ladder. For nestling birds, the best option is to return the nestling to the original nest. If the nest is damaged or has fallen, a substitute nest basket can be used instead. Fledglings and precocial birds usually just need to be released close to their parents. It's essential to fully understand the behavior of the individual species being reunited.

Using Recorded Calls

The calls of juveniles have a very powerful effect on their parents and can be used to help attract them to their lost juveniles. Adult calls should not be used. A recording of the juvenile's calls can be made with simple recording equipment, and the call can be played back in the field using an inexpensive device, preferably with a remote control so the sound can be turned on or off from a distance. If the nest is in a tree, the device can be placed on the ground at the base of the tree. Calls should not be played until the juvenile has been settled, and the reuniter is safely concealed at a vantage point where the reunion can be observed. As soon as the adult is sighted, the recording should be turned off, so the adult will not be distracted from locating its young by sight, as well as through hearing its young's vocalizations.

Follow-up Monitoring

Wildlife rehabilitators have a responsibility to verify that a reunion has been successful and that adults are caring for the juveniles. For birds, it's best to keep watch from a distance until the adults are seen attending to the lost juvenile. This requires patience and the ability to be quiet and alert for extended periods of time. Plenty of extra clothing (if needed), food and drink, and insect repellent, as well as comfortable seating will all help. A pair of binoculars is essential for most situations. All ladders and equipment should be safely stowed, so there is no need to disturb the family once the reunion has taken place. Monitoring should continue until it is clear that the reunion is successful.

For mammals, it is rarely possible for a person to witness the mother reclaiming her young. It may take her several days to reclaim all of her young and move each of them to an alternate den site. Depending on the situation and the species involved, it may be necessary to revisit the area for several days to check on the juveniles' condition and provide necessary additional care. The use of a trail camera is an excellent way to monitor the reunion and verify the activities of the mother. The camera should be checked frequently until the reunion is complete.

Interacting with the Landowner

The landowner's permission must be obtained before entering the property to reunite the juvenile. He or she can also be a valuable asset to the reuniting effort. Often the landowner has been observing the family for some time, is familiar with their daily behavior patterns, and knows the location of the nest/den or of other family members. Once the reunion has been carried out, the landowner may also be very helpful in providing follow-up observations of the family. Positive interactions with landowners also have important educational value, promoting a positive attitude towards wildlife.

Documenting the Case

Whether or not the reunion is successful, it's important to document all observations so they become a permanent part of the case record. Records should be kept of the date and time the observations were made, along with adult and juvenile behavior observed. Both successful and unsuccessful cases can yield valuable information that can be shared with the wildlife rehabilitation community.

Photographic documentation is also valuable. If possible, the juvenile should be photographed on first admission and also just before being reunited. Photographs of the reunion site, and any photos of siblings or parents, are especially valuable. Valuable documentation can also be obtained with motion-sensitive trail cameras that can be mounted in an appropriate place and removed after the family has dispersed.

Reuniting by Telephone

The best way to cut down on the numbers of healthy juveniles that need to be reunited is to

intervene by phone either before they have been separated from their parents or right after the separation has occurred. A great many young animals are taken from parents by concerned people who are unaware that the parents are nearby and are caring for their young. Typical cases include newborn fawns and fledgling songbirds. When people call a wildlife rehabilitator for advice, an important opportunity is provided to persuade the caller to leave the young animal alone or to return it immediately to the exact location where it was found. Some callers resist this advice, fearing for the safety of the juvenile.

Common concerns include:

- Fear that the scent of humans will cause the parents to reject their young. This is not true. Birds and mammals have a strong urge to care for their young. The fact that a youngster has been handled by humans will make no difference to them.
- Fear that neighborhood cats may harm the juvenile. This concern is realistic, but the solution must focus on asking neighbors to keep cats (and dogs) indoors until baby season is over. Point out to the caller how harmful it is to take babies away from their mothers, and make sure they understand that the period of time the young need to be protected is very short—perhaps only a few days or weeks. Explain to the caller that the juvenile's parents have chosen to live on the caller's property, despite the presence of cats. This does not justify taking their healthy young away from them. Only if there is a specific, constant, and present threat to the young animal should it be taken away from the care of its parents. Even in this case, the juvenile may be returned as soon as the immediate threat has been removed.

Telephone Basics

Reuniting by telephone involves the same concerns as when the juvenile is in the custody of a permitted wildlife rehabilitator. But telephone reunions require special skills to make sure the right decisions are made. Here are some tips:

Confirm the Details Carefully

Callers may think they know what they're seeing, but it's all subject to their interpretation, which is sometimes very wrong. Take the time to confirm what species and age the animal is by asking the caller to text or email a photo of the juvenile. Be sure you obtain all of the relevant details. Continue to question the caller until you visualize the situation clearly.

Assess the Juvenile's Condition

Most callers are not capable of determining if an animal is healthy, so it's important to look for clues that will help determine the juvenile's true condition over the phone. Depending on age, some clues can be ascertained from behavior (Is it acting alert and energetic? Is it listless and withdrawn?). Other clues can be found in the details of the situation that caused the separation. For example, an animal that is brought in by a cat is very often suffering from well-hidden puncture wounds. On the other hand, a newborn fawn that has been found curled up peacefully in a field may be perfectly healthy. If there is any doubt about the

health of the juvenile, or if it has been kept overnight or longer, it is usually best to ask the caller to bring the juvenile in for a physical exam and supportive care before reuniting at the appropriate time of day.

Assess the Cause of Separation

Many successful telephone reunions involve young animals that have been picked up, not because of a mishap, but just because they were behaving normally for their age and species. Fledgling songbirds that have just left the nest are vulnerable to capture, as are newborn fawns as described above. However, if the cause of separation involved some kind of potentially hazardous mishap (such as a falling tree), it's important to be absolutely certain that the infant's health has not been compromised. In such cases, it may be best to ask the caller to bring the animal in to be examined before attempting to reunite.

Reunite Quickly

If it is clear that the young animal is healthy, and that there is no immediate danger, and if it has been separated from parents within the previous 6 to 12 hours (the length of time depends on age and species), the caller should be encouraged to return the young animal immediately to the exact place where it was found.

Provide Detailed Reuniting Instructions

Specific reuniting methods depend on the age and species of the animal. It's important to provide the caller with species-appropriate information. Make sure the caller understands the exact steps and has the right materials for a successful reuniting. In cases where the animal was not found on the homeowner's property, it's also important to instruct the caller about how to house the animal appropriately when returning to the reunion site.

Be Persuasive

A big part of any successful reunion is persuading the caller to do it. This involves helping them to see that the right option is to get the animal back to its own mother. Take time to paint the picture that the mother is desperate to get her young back and may spend hours or even days frantically searching for them. Stress how important it is for the young to learn vital survival skills from their parents, skills we simply can't teach. It's essential to help the caller understand that the young animal's chance of survival is greatly enhanced when raised in the wild by its own parents.

Follow-up Monitoring

Many callers don't understand that the presence of humans may frighten the mother away, and they may want to hover over the youngster hoping to witness the reunion. Be sure to instruct the caller to leave the area immediately and to watch for the parents from the window of a house or car.

Section 2

Reuniting Methods for Birds and Mammals

This section provides a simple explanation of behaviors to consider when you are developing a reuniting strategy for a particular animal. Understanding behavioral differences should help you to select the appropriate method for reuniting a wide variety of different types of birds and mammals. Some general guidelines for reuniting different groups of animals are provided here, but reuniting requires more than a quick review of these general guidelines. Section 4 provides a list of resources for finding the information you need about the particular species being reunited.

Understanding Nesting Behavior

Altricial versus Precocial Birds:

Birds can be categorized along a spectrum of early developmental characteristics.

Precocial birds (e.g., ducks, geese-Anatidae family, and quail-Odontophoridae family) are covered with insulating downy feathers and are strong and active enough to leave the nest soon after hatching (nidifugous). These birds usually follow their parents away from the nest within a day or two after hatching.

Semi-precocial birds (e.g., nightjars-Caprimulgidae family, horned larks-*Eremophila alpestris*) are active and well-developed soon after hatching, covered with insulating downy feathers, but stay in or close to the nest and must be fed by the parents.

Altricial birds (e.g., songbirds, woodpeckers-Picidae family, hummingbirds-Trochilidae family, doves-Columbidae family) are almost naked (may be covered with fine, non-insulating, downy filaments), blind, and need the support and protection of a nest for at least 10–14 days after hatching (nidicolous).

Semi-altricial birds (e.g., raptors, egrets, herons-Ardeidae family) are covered with downy, semi-insulating feathers as hatchlings. They may appear less dependent but still require feeding and brooding and the support of a nest until close to fledging.

Reuniting strategies are necessarily very different for these basic developmental categories.

Synchronous versus Asynchronous Hatching

Nearly all precocial birds and many altricial songbirds hatch their eggs in a synchronous manner. They delay incubation until all eggs have been laid. This ensures that they will all hatch within a few hours of each other, resulting in a brood in which all of the juveniles are

equal in size and strength. This is an important strategy for precocial birds that usually follow their parents away from the nest within a day or two after hatching.

Some altricial or semi-altricial birds are asynchronous incubators and begin to incubate soon after the first egg is laid. This results in a brood in which the young are many days different in age. This strategy increases the probability of a larger number of successful offspring. If food sources are plentiful, all the young may fledge. If food is less plentiful, the older nestlings benefit from size and ability to compete while the younger chicks may fail to compete, or even be added to the food supply.

Solitary versus Colonial Nesters

Most of the juveniles that are aided by wildlife rehabilitators belong to species that are solitary nesters. The mated pair establishes a nesting territory and defends the territory against other adults of its own species.

Colonial nesters (gulls, terns-Laridae family, herons, swallows-Hirundinidae family, and some species of swifts-Apodidae family) use various sites ranging from under or on the ground to trees to the walls of cliffs. These raise their young in strategies that keep the young integrated in the colony.

Parent-Young Recognition in Solitary and Colonial Nesters

Solitary nesters do not discriminate between their own offspring and other juveniles of the same species, and usually will care for any juvenile that is in their nest territory. In a colony, the adult birds must be able to recognize their young, so they can be sure they are feeding only their own chick. Parent-chick recognition among most colonial birds usually begins soon after hatching, at the time when the young begin to move away from the nest. Since colonial birds can recognize their own offspring within a few days of hatching, most juveniles of colonial species can be reunited safely by returning them to the colony or crèche. If the young have fledged, it is not usually necessary to return them to the exact nest site. Fostering, however, is usually not possible with colonial birds.

Vocalizations

Birds use a variety of calls to communicate within a family. The food-begging calls and alarm calls of juveniles trigger an appropriate response from parents. Contact calls help adults and young find each other away from the nest. Wildlife rehabilitators can use recordings of the young birds' calls to attract the adults after a separation. Most solitary-nesting species will respond to any food-begging or alarm call of the appropriate species. Colonial nesting parents learn the vocalizations of their own young when they leave the nest soon after hatching and usually will not respond to the vocalizations of other juveniles.

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Reuniting Altricial Birds

Storms and high winds may blow nests and nestlings out of a tree or may even blow down the whole tree. Another major source of disturbance occurs when trees are trimmed or cut down. Predators such as northern raccoons, cats, and crows may also drive young birds from the nest. Some species are not very good nest builders, and the nest may disintegrate as the juveniles grow larger. Restless older nestlings or branchers may fall to the ground accidentally. For ground nesters, disturbance may be caused by mowing or by a predator.

Guidelines for Various Ages

Hatchlings: Eyes closed, nearly naked, and helpless. Completely dependent on parents for food and warmth. Hatchlings are especially delicate and are among the most difficult to reunite, as they must be constantly kept warm and need frequent feedings. Reunions should take place as quickly as possible, as adults who lose an entire brood may abandon the nest and reneest in another location.

Young nestlings: Eyes open, pin feathered, able to sit up on their hocks, but not stand. Still require feeding and brooding by adults. Like hatchlings, young nestlings require warmth and frequent feedings. Reunions should take place quickly and should be monitored continuously until the parents are seen caring for the young.

Older nestlings: Well-covered with feathers, able to thermoregulate and stand well. In raptors, able to self-feed from prey provided by adults. These birds are relatively easy to reunite, as they do not require continuous brooding. Nocturnal species can be left at the nest site overnight except in bad weather. However, care should be taken to avoid disturbing juveniles that are still in the nest, since older nestlings are more aware of their surroundings and can be frightened out of the nest. Older nestling songbirds that are close to fledging but are still unable to fly may be at risk of premature fledging if disturbed. Even though they normally remain in the nest until able to fly, these older juveniles frequently refuse to remain in the nest if replaced and may be at risk on the ground.

Branchers: Most raptors, and a few other altricial species, spend time perching and climbing on branches near the nest before they can fly. They often return to the nest for food and rest. Flight and contour feathers are almost fully developed, some down remaining, especially on the head; tail short. Size is almost the same as adults. Branchers have frequent mishaps and may tumble to the ground. In owls (Order Strigiformes), this is normal, and adult birds will feed them on the ground until they are strong enough to hop/climb into the trees again. For younger branchers, replacement in or near the original nest, or in a substitute nest, will provide needed support and protection until they are stronger and more developed. Older branchers are strong enough to hop/climb from branch to branch to reach the higher branches of a tree for safety. They can be reunited by placing them on a low branch that offers opportunities to hop higher up into the treetops close to the location of the original nest. Typically, branchers rarely stay in one location, even if returned to the trees. If it is clear the adults are feeding them, and if they are not in danger from humans, they can usually be left on the ground.

As it is not always easy to decide whether juvenile birds are young branchers, older branchers, or fledglings, it's best to test them first in a room or small flight cage. Place the birds in a comfortable nest basket with adequate cover and some nearby branches for perching, and observe their behavior. Nestlings and young branchers will stay in or very close to the original nest, while older branchers and fledglings are likely to perch. This should help you decide how to reunite.

Fledglings: Some altricial birds are able to fly when they leave the nest, although some newly fledged birds, such as barn swallows (*Hirundo rustica*), may return to the nest for rest periods for several days after fledging. Other altricial fledglings, such as Western scrub jays (*Aphelocoma californica*) or greater roadrunners (*Geococcyx californianus*), may leave the nest as much as two to three weeks before they are able to fly, and conceal themselves in cover on the ground where they maintain contact with their parents by their food-begging calls. Obviously, it's important to understand the fledging behavior of the species you are reuniting. The parents of fledglings can be located by playing a recording of the juvenile's food-begging or alarm call in the general vicinity of the nest. Once the adults are sighted, the fledgling can be released, usually close to cover.

Reuniting Strategies for Birds with Open-cup Nests

Open-cup nests are used by many species of solitary-nesting birds, from raptors to hummingbirds. They may be constructed of a wide variety of materials and in a variety of locations, either on a main fork or farther out on the branches of trees and shrubs. Each species has preferences for nest location. Some build only in small trees, some in shrubs, while others nest only in the higher branches of mature shade trees. Some open-cup nests are constructed on the ground.

Some birds (e.g., house finches-*Haemorhous mexicanus* and Carolina wrens-*Thryothorus ludovicianus*) prefer a location around human structures, often in a hanging basket or a wreath on a front door.

Return to original nest: If the original nest is accessible and can be reached, healthy nestlings should be returned immediately to the nest. Care must be taken not to frighten siblings out of the nest.

Use a substitute nest basket: If the original nest has been destroyed, most solitary nesting birds will accept their young in a substitute nest basket that provides similar conditions to the original nest and is placed close to where the original nest was located.

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Recommended Substitute Nests

Raptor nests: A wicker basket lined with a bed of branches makes a good substitute nest. Ensure the replacement container will drain if it becomes wet.

Songbird nests: Small wicker baskets or other sturdy containers about the size of the original nest. Holes should be drilled for drainage. Nest baskets should be lined for warmth and support with material from the original nest or other natural materials that will not dissolve or hold water when wet. Do not use tissue or other paper.

Cavity nests: Nest boxes with the appropriate size and hole diameter have been designed for a wide variety of cavity nesters. Plans are available at the Cornell Lab of Ornithology's Nestwatch website. When installing a nest box, care should be taken to install appropriate predator guards. The box should be placed on a pole, or on a nearby tree, as close as possible to the original nest cavity.

Reuniting Strategies for Birds with Cavity Nests

Some birds have a strong preference for nesting in cavities. They may be abandoned woodpecker holes, or they may be holes that have formed because of damage to a tree. Larger, older trees are more likely to have suitable cavities, and it is usually possible to spot the most likely trees from a distance, judging by their age and size alone. Cavities in sandy banks or under eaves of houses are also used, and some birds use tunnels in the ground. Some cavity nesters now also nest in the drainage holes in buildings.

Return to Original Nest

The young of cavity nesters most frequently become lost when the cavity is damaged or destroyed. However, if the original nest is accessible and undamaged, healthy nestlings should be returned immediately to the nest cavity, unless the original cause of the problem was the attack of a predator. In this case, it may be safer to reunite to a predator-proof nest box.

Use a Substitute Nest Box

If the original nest cavity is not available, some cavity nesters will accept a nest box instead.

Reuniting and Fostering Altricial Colonial Land Birds

Some altricial land birds nest in colonies instead of establishing individual nesting territories. This group includes cliff swallows (*Petrochelidon pyrrhonota*), bank swallows (*Riparia riparia*), some species of swifts, and similar species. Like other colonial birds, the parents begin to recognize their own young about the time the juveniles leave the nest and join a crèche near the colony. Adults maintain contact with their young by their calls and usually

will not feed any juveniles other than their own. The young birds can fly, but they remain dependent on their parents for food for a brief period. This means that fledgling cliff and bank swallows can be returned to the location of the colony they came from and released near other fledglings. Not all species will willingly accept fledglings. Know the behavior of each species when trying to reunite or foster. Some species that appear to be nesting in colonies may actually be solitary nesters. Networking, Internet research, sharing of information, and careful observation are important ways to ensure success.

Monitoring Strategies for Altricial Birds

Follow-up observations are essential, as not all reunions are successful. It's important to clearly establish that the adults are caring for the reunited juveniles. Depending on the age and species of the bird, it may be necessary to provide additional feedings or even to cancel the effort to reunite. Here are a few of the most practical methods of monitoring:

Direct Observation: Watching the nest from a window or from a concealed vantage point is the best method. It is important not to disturb the area immediately around the nest, as the adults may refuse to approach. Careless or intermittent observation is usually not effective in determining success. Some birds are fast and secretive when bringing food to their nestlings. Unless a monitor is watching attentively at the exact moment the food delivery is made, the presence of the adults could be missed entirely.

Motion-sensitive Camera: For nestlings confined to a nest or nest box, a motion-sensitive camera installed near the nest can provide verification that the adults are tending the young without the need for direct observation. These cameras are available online. For raptors, whose nests are often high in a tree, it is best to suspend the camera by rope from a hook or ring attached to a nearby tree branch. The camera can then be lowered to the ground to check the images. Picture quality may be affected by motion, but should be good enough to detect the presence of the adult birds.

Cameras should be checked several times the first day, or the following morning for older nocturnal raptor nestlings.

Sand Shelf for Nest Boxes: For raptor nest boxes, cover a small (1" x 4") wooden shelf installed directly outside the entrance hole with sand. Using a hand mirror attached to an extension pole, it's possible to check to see if the sand has been disturbed, indicating that an adult has been entering and exiting the box.

Signs of success/signs of failure: Any positive interaction between an adult and the juvenile is usually a good indicator of success in solitary nesting birds, as (unlike colonial nesters) they will usually care for any juvenile of the appropriate species. For altricial birds, strong indicators that the reunion is successful include an adult sitting on the nest, bringing food to the nest, perching on the branch beside the juvenile, or bringing food to the juvenile. For raptors, a good sign would also be the presence of new food items in the nest or nest box.

It's important not to rely solely on direct observation of the adults, but also to pay close

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attention to the behavior of the juvenile. Many juvenile songbirds chirp when their parents bring food to the nest and become quiet when the parent departs. The intermittent sound of chirping from the nest could indicate a feeding trip by a parent. Healthy juvenile raptors are usually quiet except when hungry, when they usually emit distinctive food-begging calls. This stimulates the adults to hunt. After being fed, they stop food-begging and spend the rest of their time sleeping, grooming, playing, and observing their surroundings. Prolonged food-begging calls may be a sign that the juvenile is not being fed. For those of us in the Americas, hummingbird nestlings tend to remain silent when in the nest. After leaving the nest, they call to inform the parent of their location. Calling from the nest is usually an indication of abandonment. There are also some species that remain quiet and do not emit a food begging call. It is important to understand the biological history of the species with which you are working.

Reuniting Precocial Birds

Reuniting strategies for precocial and semi-precocial birds are quite different from reuniting strategies for altricial birds. Precocial birds include ducks, geese, and upland game birds. All require warmth and protection while they are very young. Most ducklings and hatchling shorebirds find their own food. However, upland game birds such as wild turkey (*Meleagris gallopavo*) and quail must be shown the food by their parents.

Semi-precocial birds (some are solitary nesters—nightjars—and some are colonial nesters—gulls, terns, and some shorebirds) are similar to typical precocial birds. However, many are actually fed by their parents and remain dependent on the adults for food until sometime after they begin to fly.

Guidelines for Various Ages

Hatchlings: Covered with down. Eyes open, able to stand, and imprint on parents within hours of hatching. Hatchlings continue to receive nourishment from unabsorbed yolk for the first 24–48 hours after hatching. They are completely dependent on the adults for warmth and protection. Hatchlings may be reunited by returning them to the nest or scrape if found during the brief period (one to five days) that they remain in or near the nest after hatching.

Young chicks: Downy, alert, active. Many are self-feeding. However, they are still dependent on the adults for warmth and protection for varying lengths of time after leaving the nest. They are easily chilled and dehydrated, but may revive quickly with supportive care. Very strong and active young chicks can then be reunited.

Older juveniles: As the young birds develop, their down is gradually replaced by feathers, and they are no longer dependent on the adult(s) for warmth. Full development is relatively slow, and they may not fly for one to two months. Some precocial juveniles, especially migratory ducks (common goldeneye-*Bucephala clangula*), are left on their own before they can fly, while other birds (killdeer-*Charadrius vociferus*) remain with their parents until

well after they are able to fly. Canada geese (*Branta canadensis*) remain with their parents throughout the first year.

Reuniting Solitary Nesters

Ducks, Geese, Plovers, and Upland Game Birds

Reuniting these precocial birds is generally not difficult if the location of the family is known. Contact calls allow the family to spread out while foraging without getting lost and can be useful in reuniting or fostering. However, reuniting is only possible if the juvenile is strong and healthy. Since the young birds must follow the family, any slight weakness may cause the juvenile to fall behind, which is usually fatal.¹

Typical Causes of Separation

Most displaced young are encountered in urban or suburban habitats, and mishaps are usually related in some way to an altered environment and/or human activity. Frequently, juveniles are separated from adults immediately after the newly hatched brood leaves the nest, while the flightless chicks are being led to a body of water or feeding area providing appropriate habitat. One or more chicks may be found wandering along a street, trapped in a storm drain, or an entire brood of hatchlings may be trapped in a swimming pool or an enclosed courtyard. In many of these cases, the adults are unharmed and, if they can be located, they can be reunited with their chicks.

Reuniting Strategies

Dabbling ducks (including mallard-*Anas platyrhynchos*, ruddy duck-*Oxyura jamaicensis*, teal, northern pintail-*Anas acuta*):

Entire brood: Some dabbling ducks, such as female mallards, have a very strong attachment to their own brood of ducklings. In case of a mishap, it should be possible to reunite the mother with her brood. In most situations involving entrapment, the mother should be captured first, if possible, and confined in a cardboard box. If she escapes capture and flies off, a reunion can still be arranged. The hatchlings must be gently and quietly rounded up and placed in a tall cardboard box (to prevent escape). The use of large towels or sheets or a long-handled net may help to round up the chicks. If they are in a storm drain, it's important to block off all openings with cardboard to prevent the brood from becoming separated. Typically, the mother will not abandon her brood and will return even if she has initially flown away. Once she hears the contact calls of her offspring, she will stay fairly close to the box they are in. Depending on the circumstances, the box can be turned on its side so the mother can round up the juveniles, or the box can be carried slowly to a safer location for release, keeping the mother close enough to the box at all times to hear the calls of her ducklings.

Single duckling: Single ducklings may be difficult to reunite. Although the mother shows strong attachment to her entire brood of ducklings, many females react with hostility to

lone ducklings, even their own. This is especially true in urban settings where ducks may be crowded together. In some cases, separated ducklings have been attacked and killed by the mother when a reunion was attempted. In cases where the mother and other ducklings have been captured, lost ducklings (and even a few foster ducklings) can be integrated with the main brood. In a captive setting, the female will gradually accept the introduced duckling(s), and the entire group can then be released together.²

Diving ducks (including scaup-Anatidae family, bufflehead-*Bucephala albeola*, golden-eye-Anatidae family, and hooded-*Lophodytes cucullatus*, red-breasted-*Mergus serrator*, and common mergansers-*Mergus merganser*):

These species frequently mix their broods with conspecifics, and all juveniles of their own species are accepted. Healthy ducklings that are lost can usually be reunited or fostered by taking them to the edge of a pond or lake containing a family of the appropriate species. Playing a recording of the calls of the ducklings will usually attract the attention of the mother duck. Once it is clear that she has responded, the duckling can be placed in the water. The female will probably not approach the bank, but will call the duckling and lead it to her brood.^{2,3}

Geese: Canada geese, for example, are easily reunited or fostered to a family with similar-aged goslings. Families are usually found on grassy areas near water. Approach the family slowly and gently, and release the goslings at a safe distance to prevent distress to the family. The goslings should attract the attention of the family by their calls, and they will gradually get together. Observe from a distance for one hour to make sure the reunited goslings can keep up with the family. Monitor for several days to make sure the goslings are still able to keep up. When reuniting to a single family of geese, fostering should be limited to one or two extra goslings. When fostering to a group of several goose families clustered together with their young, it is safe to foster additional goslings, as all of the goslings form a single large group, or crèche.¹

Plovers: Some plovers (Charadriidae family), such as killdeer, have adapted well to urban conditions, taking advantage of the plentiful supply of insects attracted to urban lights. Killdeer are ground-nesters and frequently lay their eggs on playing fields, parking lots, gravel driveways, and flat rooftops. Young killdeer leave the nest 24–48 hours after hatching and follow the male and female while foraging for their own food, usually in open, grassy fields. Very young killdeer are frequently captured by children in parks and athletic fields. They should be reunited immediately. Young hatchlings are easily chilled and may need supportive care before a reunion can be attempted. Strong, healthy chicks can be reunited or fostered to a killdeer family by placing them on the ground nearby. The chicks will attract the adults by their calls.

Upland game birds: Chicks can be reunited if they are healthy, alert, and vocalizing. If found showing signs of lethargy, they may revive with immediate supportive care, in which case reuniting can be attempted as soon as the young bird(s) appears strong and active. Family units usually follow a predictable foraging route linked to time of day. The peeping of the young should enable the flock to reunite to the lost juvenile(s).

Reuniting Ground-nesting Colonial Birds

Birds that nest in colonies have a different approach to parenting. Very young nestlings remain for one to five days at the site where the eggs were incubated and hatched. Then the young leave the nest and wander within the colony or may gather with the other juveniles to form a group (known as a crèche) that stays together for comfort and protection while their parents are foraging for food. Some young return to the nest to be fed, and the parents provide food at the original nest location. Other species feed their young wherever they are within the colony. Since adult birds can recognize their own offspring within a few days of hatching, most juveniles of colonial species can be reunited by returning them to the colony or crèche. It is not usually necessary to find the exact spot where the eggs were hatched. Recognition between parents and offspring usually begins at the time when the chicks begin to wander away from the nest. Most nestling gulls, terns, and skimmers (Laridae family) can be reunited if the colony can be found.

Note: An important concern when reuniting birds that nest in colonies is the danger of causing harm to the other juveniles if the colony is disturbed. Great care must be taken when approaching the colony. Many water and shore bird nest colonies are monitored by federal and state wildlife agencies. Before attempting to reunite to a colony, the relevant authorities should be consulted.

Reuniting to Rooftop Nesting Colonies: Some species of gulls and terns form nesting colonies on the flat gravel roofs of commercial buildings. This protects them from disturbance by humans and dogs they frequently encounter on the sandy beaches or other areas that are their usual nesting grounds. However, juveniles may fall from unprotected rooftops and, if healthy and uninjured, must be reunited as quickly as possible. As in ground-nesting colonies, it is not necessary to return the juvenile to an exact location within the colony. Reuniting these chicks is vital to their survival, as many continue to be fed by their parents long after fledging.

Reuniting Tree-Nesting Colonial Water Birds

This includes most of the herons and other large wading birds. They may form large nesting colonies near fresh or brackish water with flimsy nests in the higher branches of a stand of trees. Colonies may contain one or more species. The young are usually semi-altricial, but branchers leave the nest well before fledging and may accidentally fall to the ground. If they are healthy and uninjured, branchers can be placed on low branches within the colony. As with all colonial nesting birds, the first concern must be preserving the safety and well-being of the colony. Reuniting should be attempted only if it is clear that the rest of the colony will not be disturbed.

Note: Solitary-nesting herons such as green herons (*Butorides virescens*) can safely be reunited following guidelines for other open-cup nesters.

Reuniting Mammals

Reuniting offers clear advantages for lost baby mammals. Many mammal species spend a long time developing and learning vital survival skills from their parents. By emulating adults, they learn where and what to eat, they become familiar with the location of potential dens and escape corridors, and they learn how to avoid predators and recognize prey. Most of the lost young mammals that are handled by wildlife rehabilitators belong to a relatively limited number of mammal species that tend to den near human habitation.

Preliminary Action Steps:

Find Out What Happened

Mammal dens are usually hidden away, camouflaged, and very hard to locate. Sometimes young animals are found far from the den or nest, especially if they are old enough to be mobile and are hungry. Getting a complete case history is the key to successful reuniting. Interviewing neighbors may lead to an observant person in the area who knows where the mother was denning. Getting a good case history will help determine whether or not the mother is around and if reuniting is a viable option.

Identify the Animal

This can be challenging when it comes to days-old neonates. Baby squirrels and chipmunks, for example, look very similar as neonates. Get a really good case history and consult with the right resources to figure out what the animal is. Some species have distinguishing markings, such as a northern raccoon's darkened mask or ringed tail, or the elongated ears of young rabbits.

Check for Obvious Signs of Being Orphaned

Juveniles that appear strong and healthy have probably been separated from the mother for only a few hours and may or may not need rescue. Most true orphans are usually found several days after losing their mothers. They probably remain in the nest or den for a day or more before being driven by hunger to crawl out in search of the absent mother. Signs that a young animal has been without maternal care for a long time and is a genuine orphan are dehydration (sunken eyes, "skin tents," etc.), external parasite infestation (fleas, ticks, maggots), or observed crying and wandering for hours, or running up to people or pets.

Provide Supportive Care: Babies should always be examined and treated for any signs of injury, sickness, or lethargy caused by chilling and dehydration. If a young mammal is injured or lethargic, its mother may abandon it. Even healthy babies should be provided with warmth and rehydrating fluids while awaiting reuniting. Until the mother reclaims her infant, it's important for the wildlife rehabilitator to continue to provide adequate care for the baby. The use of a warming device at the reunion site may be necessary so the young don't become chilled while waiting for the mother to return. If the reunion is going to take more than 24 hours, formula feedings may also have to be provided at intervals spaced to allow

plenty of time for the mother to reclaim her young at the appropriate time of day or night. A full examination by a wildlife rehabilitator prior to reuniting is the best course of action. If coaching a caller over the phone on how to do an immediate reunion, it's vital to ask enough questions to be sure that the original separation was recent and that the baby is in good enough condition for a reunion attempt.

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Research Species Behavior and Develop a Reuniting Plan

To help develop a responsible reuniting plan, study the natural behaviors and parental rearing strategies of the species with which you are working. There are risks involved for the helpless young infant from exposure, to predators or harsh weather, or an accidental fall from an insecure container. The rehabilitator's job is to minimize the risks and ensure that the infant is reclaimed by appropriate adults.

See Appendix A, p. 387, North American reunion boxes for types of squirrels, raccoons, bobcats, and skunks.

A clear understanding of the normal behavior for the animal's species and age, where to look for the animal's den or nest, and how and when to try attracting the parents will be required. Once a plan has been developed, be sure to have all the equipment needed to carry it out carefully.

Tools and Equipment:

Heating devices: Chilling causes young mammals to become stiff and unresponsive. Mammals will not retrieve their young if they are chilled. Neonates and young juveniles require a heat source even in warm weather. In cold temperatures, consider the use of heating devices for older juveniles as well. Simple heating devices include hot water bottles, socks containing uncooked rice or birdseed (heated in the microwave for 20 to 30 seconds), and chemical hand warmers. Be sure to wrap the device in a towel to prevent burns, and re-heat every two hours. For reunion boxes, a more secure heat source can be devised using a heating pad set on low attached by extension cord to a power outlet. The pad should be placed under one side of the box so young can crawl away from the heat source if necessary. Always check to make sure the heating device is providing adequate warmth before putting the babies in the container.

Reuniting containers: The challenge in choosing the best reuniting container is to ensure that the young are kept warm and concealed from predators but visible and accessible to the mother. She must be able to see and access her young, so covering them with shirts or putting them in a box she can't see or easily get into may prevent reuniting. The container must also be placed where she is likely to find it, and it must be fastened securely in place to prevent accidental falls.

Monitor the Reunion

It's rare to see a mammal reunion as it is occurring. Many mammals are secretive. They are usually well aware of the presence of a human and will not show themselves until the

observer departs. Since mammals may move their young from the reunion site, unless an observer actually witnessed the removal, "success" is often concluded merely from the fact that the young have been moved. The use of a trail camera is an excellent way to obtain solid evidence that the mother has moved her young.

Signs that a reunion has failed include:

- No juveniles have been retrieved within 24 hours of the parent's normal activity period.
- Juveniles display typical abandonment behavior (restlessness, continuous vocalization, wandering, progressive weakness over time).

Reuniting Strategies for Common North American Mammals

It is beyond the scope of this chapter to provide detailed reuniting and/or fostering information for every mammal species the reader may encounter. The following examples relate to common species found in North America. Some techniques may apply to similar species, but there is no substitute for knowing the natural history of the species in your care.

Eastern Cottontail and Related Species

(altricial, single parent, single nest or burrow)

Many cottontail rabbits (*Sylvilagus floridanus*) are successfully reunited every year, although the mother is secretive and the nest is usually well concealed. Lost young must be returned to their own nest.

Note: Excessive disturbance around the nest may cause the mother to abandon the nest.

Juvenile Behavior

Birth to 2 weeks: Confined to the nest.

2 weeks: Ears still folded and still dependent on maternal feeding, but able to move around outside the nest.

3+ weeks: Ears are erect, juvenile is hopping, weaned, and eating independently. At this age, they no longer need to be reunited, but can be released close to where they were found.

Maternal Behavior

Mother is nervous and easily stressed. Females with young are extremely secretive and do not stay with their young, but spend most of their time feeding and resting away from the nest.

- Mother cottontails are diurnal.

- Mothers return to the nest only 2–3 times a day to nurse.
- Mothers will not relocate their young to another nest.
- The peak of foraging activity is 3–4 hours after sunrise and an hour after sunset.

Description of Nest

A small, slanting depression or cavity is usually excavated by the mother, although she sometimes uses existing holes dug by other mammals, particularly woodchucks (*Marmota monax*). The nest is lined with dried grasses, leaves, and other vegetation, with a generous layer of the mother's own fur, which is also used to cover the young completely.

Typical causes of separation:

- Frequently disturbed by dogs and cats.
- Many nests are exposed and damaged by lawn mowers.
- Independent juveniles are frequently "kidnapped" under the mistaken assumption they are orphaned because they are alone.
- Homeowners attempt to protect the nest from their pets by fencing it off or putting a protective shield over it, thereby inadvertently keeping the mother out.

Note: Persuade homeowners to keep their dogs leashed and cats indoors for those few vulnerable weeks until the young rabbits are old enough to leave a backyard nest.

Special Risks or Concerns

If a rabbit has been captured by a dog or cat, it must be examined by a wildlife rehabilitator for puncture wounds. Handling must be minimal, gentle, and quiet. Only if the juvenile is completely uninjured can it be reunited.

Note: If there is blood left in the nest due to an injury to one of the young, the mother will not return to the nest, and all the young will need to be rescued.

Reuniting strategies: Cottontails are not adaptable. They have a single, fixed nest site to which the young must be returned. Babies must be placed back in the original nest and re-covered with the fur and grass that the mother used to camouflage the nest. Reunions can be attempted during daylight hours as well as after dark.

Monitoring strategies: Although a motion-sensing trail camera is desirable, a simple method is also very effective. Place a tic-tac-toe pattern of crossed yarn or sticks over the top of the fur covering the nest. Check back cautiously after 12 hours. If the pattern has been pushed off but the young are still covered with nest materials, then the mother has returned, pushed the pattern aside, nursed her young, and re-covered them. If the pattern stays in place for more than 12 hours, this usually indicates that the mother has abandoned the nest.

Squirrel, Northern Raccoon, Skunk, Bobcat

(altricial, single parent, multiple nests or dens)

Squirrels (*Sciridae* family), northern raccoons (*Procyon lotor*), skunks (*Mephitidae* family), and bobcats (*Lynx rufus*) are all raised by the mother alone, using some sort of cavity for a den site. Within their home ranges, these mothers maintain multiple den/nest sites and will move their young if conditions at the original den site change or if the den is destroyed.

Juvenile Behavior

Squirrels (tree and ground): Birth to 6 weeks: Remain in the nest until eyes open. If the mother is killed, starving young may fall from nest and be found on the ground.

6 to 8 weeks: Eyes open, beginning to venture out of the nest. Weaning begins at 7 weeks. Juveniles that are orphaned and starving sometimes run up to people and even try to climb up their legs.

8 to 10 weeks: Weaned, ready for independence (tail bushy, length 6" excluding tail).

Raccoons: Birth to 6 weeks: Remain in nest unless starving because of death of mother. If found outside of nest, they are almost certainly orphans.

6 to 12 weeks: Young follow their mother on outings. Weaned at 10 weeks, but not behaviorally independent. They develop skills while following the mother on foraging trips, using different dens as the family moves around. This is a vulnerable age as they can wander far when separated.

16+ weeks: Young are independent, but often rejoin the mother and overwinter together.

Skunks: Birth to 4 weeks: Young remain in den, able to discharge musk at 3 to 4 weeks.⁴

4 to 10 weeks: Begin to leave den, following the mother closely. Individual babies may get separated when following the mother, and entire litters frequently become trapped when they fall into a window well. At 6 to 8 weeks, weaning occurs, and the mother introduces them to foraging and hunting techniques.

10 weeks: Young depart the natal territory and disperse.

Bobcats: Birth to 4 weeks: Young remain in den.

4 to 12 weeks: Begin to leave den, eat solid food. After 6 weeks, begin to play outside den. Weaned at 8 to 12 weeks.

12 weeks: Kittens begin to travel with the mother on hunting expeditions, but are still heavily dependent on her for food and protection.

7 to 12 months: Some juveniles become independent in the fall, while others remain with the mother until the following spring.

Maternal Behavior (squirrel, northern raccoon, skunk, bobcat)

- Mothers with helpless young will only venture from the den/nest to forage.
- Multiple dens are maintained, and the mother may move the young several times.
- Older juveniles are closely supervised when they begin to follow on foraging trips.
- Mother introduces foraging and hunting skills to older, weaned juveniles before dispersal.
- When separated, the mother will look frantically for her young. Even nocturnal species often appear during the day in the area where they were separated.

Description of Nests/Dens

Raccoons and tree squirrels: Usually prefer sites off the ground, such as tree hollows, vacant bird houses, attics, and chimneys. Tree squirrels also build nests of twigs and leaves, called dreys, located well out on a high branch of a tall tree. However, these are not usually used for raising young.

Skunks: Are ground nesters who will utilize hollow logs or woodchuck burrows (old and active). Also, they often use spaces under porches and sheds.

Note: All three of these groups are highly adaptable, so any opening that leads to a good cavity is likely to be used. This, unfortunately, results in many "nuisance" complaints when northern raccoons, skunks, and tree squirrels den/nest in and around homes, particularly in spring through fall. Mothers of these species are flexible—they readily move their young to one of their other den sites if their original den/nest becomes unsuitable because of damage to the den site, the presence of predators, or because they are evicted from a building. Reuniting is therefore still possible even if the original den/nest is no longer available.

Bobcats: Dens are well concealed and are not usually located close to human dwellings. Potential sites include rock shelters, brush piles, abandoned beaver lodges, under large uprooted trees, or in underground burrows. A female bobcat may have as many as five den sites within her territory.⁵ Since bobcats are territorial, only one female will be found within a given area. If a lost juvenile is returned to the point of origin, it should be in its mother's territory.

Typical Causes of Separation:

- trees being trimmed or cut down

- underground dens being accidentally uncovered by bulldozers
- mothers and juveniles becoming separated by some kind of disturbance caused by people or pets
- "nuisance" mother animals denning in attics or around houses often trapped, and relocated or killed (particularly an issue with northern raccoons, skunks, squirrels, chipmunks, and woodchucks, all of which have adapted well to the suburban landscape)

Reuniting Strategies

Timing: If the mother is present, the best thing to do is to put the young out immediately where she can see and hear them, and keep people and pets away. If the mother is not in the immediate vicinity, she is almost certainly nearby. It is vital to attempt reuniting within 24 hours of a known separation, while the mother is still looking for her young. Reunions can be successful after a separation of up to 48 hours, but the likelihood of success lessens as time passes.

Time of day: Nocturnal mammals should be returned at dusk and left in a reunion box at an appropriate location overnight. Diurnal mammals should be reunited as early in the day as possible and left until dusk. In some cases, babies not reunited by dusk may be given overnight care and returned to an appropriate reunion box shortly after dawn the following day for a second attempt. Bobcats are crepuscular (most active at dawn and dusk); they can be reunited with recorded calls during daylight hours.

Protection from predators: Young animals without parental protection are always in danger from predators and pets. Reuniting efforts should always include concerns for protecting the young by restraining any free-ranging dogs or cats in the area and by careful placement of the reunion box (a box with an opening cut large enough for the mother to retrieve her young).

Selecting the Reunion Site

Northern Raccoons and Squirrels:

- Place the reunion box at the base of the nest tree, on or very near the stump if the nest tree was cut down, or below the downspout or tree the mother is using to access a chimney or attic den.
- If the entrance to the nest is known to be on the roof, the reunion box should be fastened securely on the roof as close as possible to the entrance to the nest.

Special note: Northern raccoons are accustomed to moving their young babies from one den to another one before the young are old enough to follow her. However, the mother may take several nights to transport all of her babies to the new den. When retrieving her

young from a reunion box, it may also take a mother northern raccoon two or three days to retrieve all of her young. The remaining babies must be offered continuous warmth in the reunion box and must be given formula several times a day until the last one is reunited with its mother. Constant chattering and "wee-calls" indicate that the mother hasn't returned and they have not been fed.

Skunks:

- Skunks are nearsighted, so their babies must be placed where the mother can easily find them. Place them, exposed, on the ground near her den or travel route, or contained within a small box placed on its side (so she can walk right in and retrieve them).

Bobcats:

- Return the baby to the location of the original den, if known, or to the exact location where the baby was found.
- Use a recording of the baby's calls to summon the mother. Since bobcats are territorial, the mother should be nearby and will return to reclaim her young.
- If the mother is aware of the presence of a human in the area, she will not come forward to retrieve her infant. If watching from a car, avoid making any noise or sudden movement.
- The best approach is to use a trail camera to monitor the reunion. If a recording of the juvenile's calls is played, the reunion should take place quickly (less than two hours).
- Special note: Female bobcats may move their young to as many as five different dens before they are weaned.

Communicating with the Mother

For some species (northern raccoons, squirrels, bobcats), recordings of the baby's hunger or distress calls can be played on a boom box, iPod, or cell phone to lure the mother in.

Gray Fox, Red Fox, Coyote

(altricial, two parents, multiple dens)

Gray foxes (*Urocyon cinereoargenteus*), red foxes (*Vulpes vulpes*) and coyotes (*Canis latrans*) are reared by two parents and require long learning periods to practice critical survival skills such as hunting. These skills are extremely difficult to teach in a typical rehabilitation setting, thus reuniting must be a priority for these species. Reunions are still a possibility even if you suspect something has happened to one of the parents. Of course, if the baby is still at nursing age and only one parent remains, you'll need to make sure that the remaining parent is a lactating female.

Special Health Concerns: Foxes and coyotes are susceptible to a variety of diseases including mange, distemper, and rabies. These diseases can kill the parents or seriously compromise the juveniles to the point that they are abandoned, sickly, or in the case of mange, develop serious fur loss. It is fairly common for fox kits found alone to be diseased. For this reason, it is recommended that lost young be given a thorough physical examination to be sure that they are candidates for reuniting.

Behavior of Young

Fox (gray and red): Birth to 4 weeks: Confined to den.

4 to 10 weeks: Begin playing outside den. Sometimes assumed to be orphaned since adults often not present. Parents deliver food at dawn and dusk. Weaning completed.

10 to 12+ weeks: Follow parents on outings, begin developing hunting skills.

6 to 7 months: Pups attain adult size and weight.

8 to 10 months: Pups disperse.

Coyote: Birth to 3 weeks: Confined to den.

3 to 7 weeks: Begin playing outside den and eating solid food. Gradually weaned.

8+ weeks: Fully weaned, eventually moved to aboveground "rendezvous sites," fed and guarded by adults.

9 months: Pups reach adult size; some may disperse in fall and early winter, but some pups remain with the family and become helpers during the following breeding season.

Parental Behavior

Fox (gray and red):

- Both are crepuscular and nocturnal, although gray foxes are much more secretive than red foxes, which are often seen at any time of day.
- Solitary except during the mating season.
- Female stays with very young pups in the den; male provides most of the food.
- Female leaves pups at den and resumes hunting before they are weaned.
- When young are able to travel, both parents teach the young to hunt.
- If food is abundant, males may breed with two females, with adjacent dens or even shared dens, in which case the pups may nurse from either mother. Up to one-third of red fox families have an adult helper, probably unmated young from previous year.

Coyote: Basic family unit is a mated pair; often includes previous year's offspring acting as helpers. Young are rarely left unattended.

- Most active at dawn and dusk. In rural areas, activity is also diurnal, mostly nocturnal in urban areas.
- Female remains with her nursing newborns, but helps provide prey as pups develop.
- Male and helpers provide most of the food for the young.
- If food is abundant, a second female may breed. Dens are shared and young are raised cooperatively.

Description of Fox and Coyote Dens

Den entrance is an earthen hole, usually facing east or south.

- Adults may dig their own den or may use a woodchuck burrow, rock pile, brush pile, or hollow log. Dens usually have several entrances with long tunnels.
- Like red foxes, gray foxes sometimes den near humans.
- Gray foxes are especially sensitive to disturbance. Dens disturbed by humans may be abandoned, and the pups may be moved to another den.⁵
- Good dens may be reused year after year. Recognized by bones and scat around the entrance, which also supports a growth of well-fertilized, lush vegetation.

Typical Causes of Fox and Coyote Separation

The 2–4 week period when the pups are active at the den site and their parents are hunting is a particularly vulnerable time—people often kidnap the juveniles under the assumption they must be orphaned.

- Encounters with cars or dogs may separate a juvenile from the family.
- Trapping or shooting may cause the death of one or both of the parents.
- Diseases can result in the death of the parents, leaving the young malnourished or diseased.
- Parents may switch den sites if conditions become unfavorable, and sometimes young are left behind.

Reuniting Strategies

The best strategy is to find the active den. Very young pups should be put in the den, older pups (eyes open, walking) can be put right outside it, causing less disturbance. Monitor the entrance with a trail camera or from a car. If the den can't be found or doesn't seem active, go back to exactly where the pup was found and leave it in a carrier with the door unlatched but propped closed with an easily dislodged stick, allowing the door to be opened and the young to be retrieved by an adult. Recorded vocalizations of the pup's calls will help lure the parent(s) in for retrieval.

Monitoring Strategies

The best method is to use a trail camera, as the adults may not be willing to approach if humans are detected in the area. If you are going to watch in person, however, conceal yourself in a house or car and remain absolutely still to avoid attracting attention. If the pup is still alone after being left out for a full 12 hours during the parents' normal period of activity, then the reuniting effort has failed.

Deer

(precocial, single parent, no fixed nest)

White-tailed deer (*Odocoileus virginianus*) and mule deer (*Odocoileus hemionus*) are very secretive when raising young. Reuniting fawns after a brief separation is usually not a problem. Because deer are so easily tamed, for healthy fawns, reuniting is a much better option than captive rearing.

Juvenile Behavior

Birth to 3–4 weeks: Born with eyes open, well-furred, able to stand and walk, but unable to run fast enough to avoid predators. The spotted reddish coat provides effective camouflage, and the mother's licking stimulates elimination so no odor builds up to attract predators. Fawns mostly remain alone, quietly sleeping and resting in a curled up position, moving short distances after the mother's brief visits. Twin fawns will conceal themselves separately in the same general area.

3 to 4 weeks: Fawns begin traveling with their mother. They are still nursing but also eating a variety of vegetative matter.

2 to 4 months: Fawns are weaned and start to lose their spots around the time of weaning.

Maternal Behavior

To avoid attracting predators by her large size and noticeable scent, a mother deer only visits her fawns to nurse and clean them at irregular intervals during day and night.

- Visits may last no more than five minutes. The rest of the time the mother stays nearby but hidden.
- When approaching her fawns after an absence, the doe displays a stereotypic posture with lowered head and outstretched neck.⁴

Typical causes of separation:

- Healthy fawns are frequently "kidnapped" by well-intentioned people who find them lying quietly while the mother is apparently not in attendance.
- Fawns may become separated when chased by dogs or when running from other perceived threats.

- Fawns are sometimes found along a road with steep banks where they have been accidentally trapped when following their mother. The fawns may be unable to climb the steep bank even though it is easily climbed by the mother.
- The mother may have been killed by a car, in which case the body is usually found along the roadside close to where the fawn is located.

Reuniting Methods

- If the fawn is healthy and has been separated from its mother for less than 72 hours, it should immediately be returned to the exact spot where it was found. Place the fawn on the ground and give it a chance to walk away or settle down. Fawns instinctively follow a large, slowly retreating form, so it may follow you as you are attempting to leave. To avoid triggering this behavior, keep low to the ground and back away quickly until you are concealed by some foliage. Do not remain in the area, as this will keep the mother from approaching her fawn.
- If the fawn was found on a roadside, and there is no sign of a dead doe, return the fawn to the same location, but out of the right-of-way, well back from the road. The mother will find her fawn by following its scent.
- If the fawn was found after being chased by dogs, it may be some distance from where the mother left it. In this case, if it is healthy and uninjured, release the fawn in a secluded patch of woods as close to where it was found as possible. Mother and fawn can locate each other by scent trail and by vocalization.

Monitoring Strategies

It can be extremely difficult to monitor a fawn reunion as the mother won't return if she sees a human or smells human odor in the area.

- Watching from a concealed location such as the window of a house or car is not advised, since your presence could prevent a reunion. Leave the fawn completely alone at the reunion site for at least 10 to 12 hours or overnight. Then check just once to assess if the fawn is lying down quietly (normal) or wandering and crying (sign of abandonment).
- Use a trail or game camera to track activity.
- If the fawn is still in the same general area and is lying quietly and appears comfortable, it is almost certainly being cared for by its mother and should not be disturbed. If the fawn is wandering and bleating continuously, the reunion was not successful, and the fawn should be retrieved.

Special concerns: Fawns rely on concealment for protection and do not move away from a threat, so in some parts of the world fire ants (*Solenopsis* sp.) pose a hazard. Care should be taken not to leave a fawn lying near an ant mound.

If a fawn has been chased by dogs, the dogs must be kept confined for several days to

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prevent them from following the fawn again after reuniting.

People often bond with fawns and are hesitant to leave them where they were found. For this reason, it's always best if the rehabilitator is part of the reuniting effort. If this isn't possible, be sure to follow up with the finder to make sure the fawn has actually been reunited with its mother and has not been adopted as a pet.

Virginia Opossum

(marsupial, single parent, no fixed nest)

North America's only native marsupial, Virginia opossums (*Didelphis virginiana*) have a nocturnal, nomadic lifestyle that suits their scavenging habits. Mothers with young must keep moving to find enough food and rarely stay in a particular area for more than a few days.

Juvenile Behavior

Birth: "Joeys" are born as tiny embryos and are carried in the mother's pouch.

2 months: Joeys can leave pouch while still nursing, may ride on mother's back, and may become separated by a fall.

3+ months: Begin to eat solid food and wean very quickly. Within 2–3 weeks, fully weaned young begin to wander away from the mother. Although still very small (about 7 inches, not including the tail), they are independent and do not need to be reunited with the mother at this age. If healthy, they can be released in suitable habitat.

Maternal Behavior

The mother carries her young in the pouch until close to weaning. She may leave older, unweaned young in the den while she forages, or they may accompany her in the pouch. After three months, the mother may leave them in the den while foraging, or they may ride on her back or run beside her.

Typical Causes of Separation

Joeys are often thrown from the pouch if the mother has to flee or encounters a predator, is hit by a car, or dislodges babies while foraging.

Reuniting Strategies

It is difficult to reunite a joey with its mother once it has been separated unless you know the exact place where the mother is denning temporarily (like a shed or woodchuck burrow). If joey is too young to be independent and you are certain about where the mother is denning, you can put the joey back in the den alone or with other joeys.

Section 3

Organizing a Reuniting Team

Baby season is always busy, and it's hard to make time to reunite healthy juveniles. The best way to ensure that every healthy infant has a chance to grow up in the wild is to work with a reuniting team of trained volunteers. These are usually people who are not directly involved in animal care and can respond quickly when needed. Tri-state Bird Rescue and Research has developed a system for organizing a separate reuniting team that takes the stress off of overworked rehabilitators.^{5,6}

Most centers have the resources to organize their own team. Home-based rehabilitators can collaborate with other rehabilitators to organize and share a reuniting team—even if it's a very small group.

Recruiting, Training, and Equipping the Reuniting Team

Well before baby season, recruit volunteers specifically for the reuniting team. Retired people make especially good team members and also have time to spare on short notice. For reuniting birds, tree climbers with special skills and equipment will be needed. The best places to recruit people for this role are tree services, arboretums, and botanical gardens. A local bird bander or trained climber can also be helpful. For teams that will be reuniting a lot of raptors, it's best to have at least two or three people who can take turns as tree climbers, to avoid burnout. Also, look for companies or agencies that would be willing to help with climbing equipment such as bucket trucks and long ladders. The reuniting team should be recruited and trained during the slower winter months. Here is a brief description of the various job assignments for the reuniting team.

The Reuniting Coordinator: This is a job for a responsible adult with good communication skills and enough free time to take action quickly when needed. When a healthy juvenile is admitted, the reuniting coordinator is immediately notified and then is responsible for organizing the reunion. This usually starts with a follow-up call to the finder to gather as much information as possible and also to obtain permission to visit the property. Next, the reuniting coordinator contacts a list of trained volunteers to form the reuniting team for this particular case. While the reuniting is proceeding, the coordinator keeps in touch with the reuniting team and always consults with the wildlife rehabilitator in case of problems.

Scouts: A volunteer should assess the situation at the nest site before the reuniting takes place, obtaining as much information as possible about the exact whereabouts of the nest or den, and looking for the adults and any siblings. Information about height of nest or possible logistical problems is also important. The information is relayed back to the coordinator of the reuniting team to help determine the appropriate reuniting strategy. While the reunion is being carried out, a scout may serve as a ground assistant to the tree climber. They may also act as observers to monitor the reunited family. In some cases, one scout can help with all of these jobs for a particular reunion, but in other cases different volunteers can assist in different parts of the operation.

The Reuniter: This is the person responsible for actually putting the juvenile back in the original nest or den or in a substitute nest. For mammals, this rarely involves climbing or other heavy physical effort. The most important qualities are a good understanding of the behavior of the species being reunited, a gentle and conscientious attitude, and some degree of patience.

For reuniting raptors and other bird species, this role usually requires someone with training and experience as a tree climber. The reuniter should be trained in advance to understand the behavior of the species and risks to the humans involved, and how to handle the juvenile properly. Whether using a ladder or climbing equipment, the tree climber should always wear appropriate safety gear including a helmet and should have a ground assistant on hand for safety.

The Monitor: This person remains at the site to observe the reunion from a concealed location. In some cases, for example, when leaving older nestling owls overnight, the monitor is responsible for checking back in the morning to make sure the reunion has actually taken place. For mammals, monitoring may be required for several days. The monitor reports all observations to the coordinator, who reports back to the wildlife rehabilitator.

Summary

A key factor in successful reuniting is having a good understanding of the behavior of the species being reunited. There are many behavioral factors that determine when, where, and how to reunite a particular species successfully.

- Is the animal diurnal, crepuscular, or nocturnal? This will determine when the reunion should take place.
- Given the age of the juvenile, should it be in a nest, or has it already left the nest?
- Does it need to be fed and warmed by the mother, or can it feed itself?
- How long does the family normally remain together after the young leave the nest or den?

Understanding each of these issues—and many others—as they apply to the particular species is critical to a successful reunion. Use of professional literature and networking are essential first steps when reuniting wildlife. Publications of the IWRC and NWRA represent a comprehensive source of peer-reviewed information on reuniting wildlife.

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Resources for Researching Species Behavior in North America

Avian Behavior

The Birds of North America Online (bna.birds.cornell.edu): By far the most comprehensive and useful source of information on over 716 species of North American birds is available online from the Cornell Lab of Ornithology. Known as "BNA" to its users, this is an indispensable resource for bird rehabilitators. The website offers exhaustively detailed information on every aspect of species behavior, with full references. Requires an annual membership fee.

Nestwatch (www.nestwatch.org): A free website also hosted by Cornell Lab of Ornithology, provides a wealth of information on the nesting behavior of birds, as well as plans and recommendations for a wide variety of nest boxes. The Cornell Nestwatch Code of Conduct can also be found here.

Mammal Behavior

Mammal rehabilitators in North America can get nearly all of the information they need from one book, the Peterson guide to Behavior of North American Mammals, listed below. All of the developmental information provided in this chapter was taken from this source, which provides comprehensive, authoritative information on the behavior of North American mammals, including hard to find details about the development of young.

Elbroch M, Rinehart K. Behavior of North American mammals. Peterson Reference Guide. Houghton Mifflin Harcourt, Boston; 2011.

Feldhamer G, Thompson B, Chapman J, editors. Wild mammals of North America, biology, management, and conservation, 2nd ed. Johns Hopkins University Press, Baltimore; 2003.

A brief, online database is provided by the National Museum of Natural History's website: Mammals of North America: <http://www.mnh.si.edu/mna/>. The most useful part of this website is the link provided at the bottom of each individual species account that connects to the exhaustive species accounts of the American Society of Mammalogists, which are otherwise difficult to find.

Reuniting and Fostering Methods

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