The Care of Orphaned Plovers, Sandpipers, and their Allies

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Introduction

The term shorebird describes a diverse group of birds that spend much of their time near water foraging for insects, insect larvae or small crustaceans. This includes plovers, sandpipers and related forms that are part of the order *Charadriiformes.* Shorebirds are precocial and can be found in wetlands or near lakes, rivers, ponds or the ocean, especially during migration. Some, such as killdeer, have made their home in more developed areas including industrial sites and parking lots and are commonly brought to rehabilitation centers due to their proximity to human activity. This article focuses on killdeer and spotted sandpipers, based on the author's experience raising these species, but the information could be applied to other shorebirds with similar natural histories. Although the feeding habits and rearing of young shorebirds in the wild will vary depending on the specific species, most shorebirds can be raised in the same manner during the most critical first few weeks of life in captivity. Variances in the arrangement of the enclosure and different release criteria should be observed depending on the habits of the specific species once the birds have made it past the first few weeks and are being prepared for release into the wild. Shorebirds remain with their parents from the time they hatch through to migration. Though precocial, shorebirds require a high level of care during their first week of life.

Supportive Care and Stabilization

Warmth

Most orphaned shorebirds that are admitted for rehabilitation are less than a week old. As with any injured or orphaned bird, it can be assumed that they are mildly to severely dehydrated. Upon admit, the bird should first be warmed in a quiet, dark incubator. Young shorebirds require consistently warm temperatures and should be kept in an incubator between 95 and 98 degrees Fahrenheit (35 to 36 degrees Celsius) for the first week of life or until they are stable, if over one week old.

Hydration

Once warm and recovered from stress, the bird should be weighed and then hydrated using an electrolyte solution such as Lactated Ringers Solution (LRS), Pedialyte, or similar. The best way to orally hydrate orphaned shorebirds is to offer fluids one drop at a time, with the syringe tip placed along the side edge of their beak. Initial hydration should be done very slowly. Watch for the bird to suck each drop into their beak and swallow before offering each subsequent drop. Offer as much as the bird will drink every 20 to 30 minutes for about three hours or until the bird passes a dropping. For very dehydrated birds, initial fluids can be given subcutaneously. This can be stressful for some species such as killdeer and difficult

to administer due to the dense down covering the body, so should be done only by an experienced handler to avoid unnecessary stress.

Feeding

Introducing Foods

After warming and hydrating a young shorebird, attention should be turned to encouraging them to start eating. Different individuals will respond better to different first foods than others so a rehabilitator should be prepared to offer a variety of food items. Shorebirds are attracted to movement and are more likely to seek out one small morsel of food than to eat from a large pile of food. Dishes should be shallow and wide so that the bird can step in and out of them easily and without tripping. Plastic lids from peanut butter jars or plastic plant pot saucers make excellent shorebird food dishes.

A Spotted Sandpiper eyes up a speck of food floating in a shallow dish of water.

Gently 'pecking' at food morsels near the orphan's feet with the blunt end of a pencil or dropping small pieces of food from above into the enclosure are both good methods of attracting a shore bird to eat. Some birds will begin eating with very little coaxing, whereas others will require you to try more offerings and techniques of encouragement. It is the author's experience that different individuals respond to different cues and show preferences for different foods, so experiment with offering a variety of foods and methods to get the bird's attention until you find something that works.

Appropriate Foods

Flightless fruit flies sprinkled onto the ground near a bird's feet are an excellent first food, especially for reluctant eaters. Fruit flies move around a lot, are small in size and are usually irresistible to young shorebirds.

A low, wide shallow dish filled ½" deep with water and a few single bloodworms are another great first food. The bloodworms and the water should be replaced every few hours. Bloodworms can be purchased live, frozen, and dried. Live worms have the added advantage of moving around and therefore enticing the bird to eat, however it is always prudent to have a supply of frozen worms on hand as well since live bloodworms can be difficult to keep fresh. Dried bloodworms sprinkled over a shallow dish of water work well too, as the movement of the dried worms floating on the surface of the water is likely to capture a shorebird's attention.

Frozen brine shrimp are very nutritious for shorebirds and should be offered in water and replaced every few hours, just like bloodworms.

Dried Plankton tossed onto the ground has proven to be an especially appealing food item to many reluctant eaters. This food spoils quickly so take care not to leave it in the enclosure too long, especially if wet.

Game bird crumbles or Mazuri waterfowl starter should be scattered on the ground or offered in water (just a sprinkling). As with bloodworms and brine shrimp, water with crumbles should be changed often. Game bird crumbles or waterfowl starter usually become a good staple food for shorebirds and eventually larger, dry dishes can be filled with these as the bird grows and becomes a good eater.

Very small mealworms are another excellent shorebird food. Maintaining a mealworm farm is an excellent way to get the smallest sized worms for young birds, but they can also be purchased in small and mini sizes. You can pick and choose the smallest ones and then gradually offer larger ones as the shorebird grows. Mealworms that are light in color that have just shed their skin are best. Do not offer mealworms with thick, dark skins, as they can get stuck and cause problems once swallowed.

Waxworms (grubs) and small crickets are good foods to offer to juvenile shorebirds, due to their larger size and resemblance to foods that many shorebirds will find in the wild.

For nutritional variety and to encourage the recognition of diverse food sources when foraging, it is best to offer as many of the above foods as possible. Pay attention to what the bird prefers to eat and make sure to provide as much of it as you can during the food introduction stages. Most of the above food items can be purchased from pet stores, especially those that cater to fish and reptiles.

Accommodating a Growing Bird

Once a shorebird is eating well, some dishes should be filled with dry crumbles and only changed daily or if they get wet. Handfuls of mealworms, grubs and small crickets can be added to these as well as tossed randomly onto the ground. Also be sure to include both plain water and water with bloodworms and brine shrimp in the enclosure. Wash and replace these often. Once a bird has developed a good appetite, it is no longer necessary to pay such careful attention to presenting food as individual morsels. Offer as much food as they will eat. Shorebirds can consume a surprisingly large amount of food, so a reliably full dish of game bird crumbles in their enclosure will assure that they do not go hungry.

A juvenile killdeer foraging for food.

Getting a reluctant bird to eat

A warm, hydrated bird that has not begun self-feeding should be sustained on vital HN or diluted Omnivore Emeraid drops placed at the corner of their beak every half hour during the day and every few hours through the night until they start feeding. LRS can also be given every few feedings. Do not mix the LRS with the Emeraid or Vital HN. Continue to experiment with various methods of encouraging feeding. Sometimes the drops of liquid supplement will whet the appetite and cause a young shorebird to start pecking and searching for food, so offer supplementation and self-feeding encouragement at the same time.

Force-feeding is very stressful and unnatural for self-feeders and does little to encourage a bird to feel safe and secure in their new environment. Shorebirds are prone to aspiration and gavage feeding is also not advised due to the danger of possible injury. If a bird will not eat despite all attempts to encourage feeding, you may try gently putting small pieces of food shallowly into the beak with a fingernail or a toothpick. (Soggy dried plankton pieces would be a good food to try.) Some birds respond to this better than others, so assessment of the individual is necessary to determine if this sort of intervention will be helpful or detrimental to getting the bird to self-feed.

Overnight Feeding

Although most shorebirds are more active during the day, they are cathemeral, meaning they are active and forage for food both during the day and at night. It is important that a shorebird can see and access food at night while also maintaining natural photoperiods. Dim lighting in the portion of the enclosure where their food is kept will help them locate it even at night. Keeping the heat source at the other dark end of the enclosure will give the birds normal photoperiods and allow them to move towards or away from the heat source as needed. A half lit/half dark enclosure can be easily achieved by placing a household night light on the end of an extension cord and positioning it so that the area where their food is kept is lit. Take care that the light source is secure so that it is not in danger of falling into the water. Clumps of grass in shallow containers placed in the middle of the enclosure can help to keep one area decidedly dark while the other part is slightly lit. Unless you will be able to attend to a self-feeding shorebird every few hours in the night, only food that will not spoil quickly should be offered. Dried bloodworms, small mealworms and game bird crumbles sprinkled over the enclosure's dry substrate are all excellent overnight foods since they will not spoil if kept dry. A dish of plain water should also be in the enclosure at night, kept at a reasonable distance from the dry food to avoid the food accidentally getting wet.

Housing

After stabilization and during the initial hydration period, the bird should remain in the incubator or brooder if under a week old or if injured, severely dehydrated or

otherwise unwell. A healthy, lively orphan should be housed in a large plastic tub or terrarium with a heat lamp if older than one week. Eventually shorebirds should be moved to a larger, outdoor enclosure.

As often seen in killdeer, young shorebirds will sit on their hocks and will not show interest in eating or moving around if they are stressed, unwell, cold or weak. A dry, warm washcloth heated in the microwave for 20 seconds and folded into a loosely rolled cone shape (so a chick can climb inside) is an easy way to offer an orphan immediate security by mimicking the warmth and protection they might get from their parent. Adding feather dusters, small mirrors, and even stuffed toys that resemble an adult shorebird to the enclosure are all good ways to help an orphan feel secure in its new environment. Once warm, hydrated and feeling secure, shorebirds should stand up and begin to move around and explore their enclosure.

A newly admitted orphan Killdeer inside a Brinsea TLC Octagon brooder.

Brooder set-up: Note the shallow dishes are not full of food but contain easily visible individual morsels to encourage eating. The natural colored towel is not flat but arranged so that the substrate has varied surfaces. Avoid brightly colored or patterned textiles. Instead, stick to dull greens, browns or beige materials. A few mirrors and a toy killdeer complete the enclosure.

Two juvenile Killdeer inside a Rubbermaid tub enclosure.

Tub set-up: The bottom of the tub has a substrate of mounds of clean, dry sand (purchased sand box sand) covered with a dull, solid colored bath towel. A heat lamp should be attached to one side of the tub with a thermometer to make sure the temperature is not too hot or too cool. The tub should measure at least 18” wide x 30” long and should be roughly 15” tall. Taut netting covers the top of the tub and is fastened with large binder clips at the corners. Once birds are no longer dependent on the heat lamp, the tub ought to be placed outside during the day in order to acclimate the birds to outdoor temperatures, sights and sounds.

One corner of an outdoor enclosure housing two juvenile Killdeer.

Outdoor pen set-up: An outdoor enclosure should be roughly 4' x 8' wide and 3' to 4' high. A low clearance is important since shorebirds can be very strong flyers and can hurt themselves by flying into the side of the pen if they are able to gain too much lift and momentum. At least one corner should be sheltered from the elements and one portion should allow the bird to view the sky and be in the sunshine. Consider what direction wind and rain tend to come from when setting up outdoor housing so that the intended sheltered corner of the enclosure is actually adequately sheltered.

At all stages of housing, mirrors should be safely and securely affixed to the side so they do not fall over onto the bird. Plexiglas mirrors are a good choice, as are a handful of small make-up compact mirrors scattered around the enclosure (especially useful inside small brooders). Mirrors not only convince the chicks that they are amongst others of the same kind, but give the impression that they are in a larger area rather than a small confined incubator or tub. Killdeer especially like open areas and can feel stressed in a seemingly small area.

Keep in mind the natural history of the specific species you are caring for when designing the outdoor enclosure. Creating a varied, natural habitat will help prepare a juvenile shorebird for its eventual release into the wild. For example, Killdeer like to be able to see their surroundings to feel safe, but Sandpipers tend to appreciate

more secluded areas where they can hide. Hiding places can be created by adding extra clumps of tall grass in the enclosure. Natural grasses can be planted into low dishes such as plastic Tupperware containers and placed in the enclosure, or alternately, plastic greenery can be used. Natural grass might contain insects, which is of course an added benefit for shorebirds!

A Spotted Sandpiper hiding behind some grass.

Acclimation to Outdoors

While still indoors, healthy and active birds should be waterproofed once they are over a week old and moving around. Regular light misting with clean, distilled water using a spray bottle early in the day will prepare a bird for living outdoors. Observe them to make sure that they do not get chilled and make sure they are warm.

Acclimating a young shorebird to outdoor temperatures, sights and sounds is not only important but is vital for preparing a bird for release into the wild. Pay attention to the weather and choose some warm sunny days to place the tub outside for the first few times. It is best to approach outdoor acclimation gradually, taking the weather, the bird's health, and its age into consideration. Make sure the tub is placed in a location within earshot and eyeshot and where it will not get too hot or

too cold. Shelter and shade should always be available to a bird when placed outside, so make sure part of the tub is protected from the sun, strong gusts of wind or unexpected rain and that the area is free from predators. Gradually, place the tub outside more often – always making sure that it will not be forgotten! Once the bird can handle cooler days and evenings and remains stable, you should transfer it to a larger outdoor enclosure. Try to get shorebirds into outdoor housing as quickly as possible while making sure that the acclimation is not happening too fast for any one individual. Transitioning captive birds gently to the outside climate is important since in the wild birds can move away from excessive temperatures or take shelter as needed. In captivity, a bird's options for taking cover, cooling off, or warming up are limited by the barriers of the enclosure that we have put them in and therefore should be very closely monitored. Use common sense and keep birds inside during excessively hot spells or during storms, yet be sure to take advantage of any temperate weather so they can be released earlier in the season. It is always preferable to release a healthy bird as soon as possible so they have adequate time to get used to living in the wild before migration is upon them.

Avoiding Common Problems:

Blocked Vents

Keeping the vent clear of dried droppings is also important. Dehydrated shorebirds are prone to have droppings block the vent and prevent them from expelling waste. The vent is not clearly visible because of the fluffy down, so be sure to check this area of the bird periodically. If droppings are stuck to the bird, they can be gently removed with a warm, damp cotton ball. Moisten any dried droppings to loosen them before gently brushing them away with the cotton ball, avoiding getting the down too wet.

Metabolic Bone Disease

Metabolic Bone Disease can be an issue for shore birds raised in captivity, so adding a small amount of calcium carbonate to their food daily is necessary. Scraping a cuttlebone over their food dishes is one way to add calcium.

Tracking Weight Gain

It is important to weigh shorebirds during their first few weeks of life in order to make sure that they are eating well and to quickly catch any potential illnesses. Shorebirds grow up quickly. If a bird fails to gain weight daily, there is probably something wrong that requires veterinary attention. Older juveniles should be weighed every few days for about a week or so after admit, but should be spared the stress of being captured and weighed regularly if they appear to be eating, growing and healthy. Weekly weighing is adequate for older birds.

Mixing Birds

Always observe the behavior of the birds in your care for a period of time when adding a new bird to the group. Sometimes a slightly older bird will peck at or step

on and frighten a younger, smaller bird. Other times the new bird will benefit from observing the other birds eating. Usually it works best to keep birds of the same age, size and activity level together and to have a physical barrier between birds that are at different stages developmentally. If new birds can see the older self-feeding birds, it may help them begin self-feeding more quickly.

Release

Healthy juveniles who are capable foragers and are able to fly are ready to be released into an appropriate habitat and into a flock if possible. Make sure you choose a safe release site away from a lot of traffic or known dangers where conspecifics can be found. Check the weather forecast and choose to release birds when the forecast is clear from extreme weather for a few days. Pay attention to migration dates in order to avoid releasing a bird too late, as some species migrate much earlier than others. It is important also for a migratory bird to have a window of time to acclimate itself to life in the wild and to develop strength and endurance before the actual flock migration begins. Choosing a release date is always a fine balance of many factors, but as a rule it is best to release a migratory bird sooner rather than later so it has the best chance at survival in the wild. If a juvenile shorebird is anxious to get away from you and is able to fly off into the wild, the release can be considered successful.