LIVE TURTLE TRANSPORT

Sea turtles are susceptible to physiological changes induced by capture events, stress when handled or during transport. Changes in blood chemistry (glucose, potassium, lactates etc.) and body temperature can negatively impact a sea turtles' behavior and survival. Juvenile Kemp's ridleys and green sea turtles - the size class of these species observed in SC waters - have shown more pronounced stress responses than loggerheads.

Sea turtles must be transported in a climate-controlled environment, protected from extremes of heat and cold, and kept moist. A core body temperature reading of the turtle should be taken if possible and transport temperatures should not fluctuate greatly from the ambient stranding temperature. The optimal temperature for providing medical treatment is 70F – 80F (21C -27C) therefore the best range of temperatures for transport. Temperatures that are below 60F (see cold-stun transport below) or well above over 80F require sea turtles to be sheltered. If a turtle is transported at temperatures greater than or equal to 27C (≥80F), it may be cooled by keeping a wet towel on the carapace and by periodically applying just enough water to soak the towel. Any open wounds should be kept moist with clean freshwater regardless of temperature. Larger turtles (≥30 cm straight carapace length) do not need a lubricant during transport because they are less likely to dry out due to their low surface to volume ratio; therefore, use of a lubricant should be avoided to minimize risking of accidental slippage and injury during handling. Turtles must be placed in sturdy containers with sufficient holes for adequate ventilation during transport. Turtles must not be transported in water. The containers housing turtles during transport must be padded but must not contain any material that could be accidentally ingested. Containers must be secured during transport, so they do not slide around or tip over. Any transfers of a turtle from one vehicle to another or from a pier to a vehicle should be done as soon as possible with as little extra handling as needed.

COLD-STUN TRANSPORT PROTOCOL

Cold-stunned turtles occur when the water temperature drops below 11C (51.8F). For a turtle, the body temperature at or below **55F is the cutoff for normal systematic function**. Rapid rises in temperature greater than 3C/5F during transport, housing, and/or subsequent treatment should be avoided to the maximum extent practicable. The standard re-heat rate at a rehabilitation facility is 5-7F/day.

- Measure the turtle's body temperature using a temperature gun.
- Keep the vehicle at ambient temperature where the turtle was found. If you are picking up a turtle on the beach, do not turn on the heat in the vehicle. If you are picking up a cold-stunned turtle from another vehicle or rehabilitation facility, try to keep the temperature of the vehicle as close as possible to the turtle's current core body temperature. Make sure to constantly monitor the temperature throughout the duration of the transport. **Do not increase/decrease the temperature by more than 3C/5F per hour. Never drop the temperature of a cold-stunned animal.**
- At temperatures less than 23.9C (<75F), juvenile turtles (less than 32 centimeter (cm) curved carapace length – 32cmCCL) may be kept from drying out during transport by applying a thin layer of water- based, water

soluble, non-petroleum lubricant (e.g., K-Y Jelly) to the carapace and all the soft tissues except the eyes and any open wounds. Dry towels may be used on any turtles where temperatures are less than 75F. Be sure to keep open wounds moist with clean freshwater during the duration of transport. **Do not use water or wet towels in conditions less than 75F, in air conditioning, or if the turtle is exposed to a draft or wind.**

- If transport travel time is more than 45 minutes, apply ophthalmic eye gel to the lower edge of the closed eye. The turtle will blink the gel onto the surface of the eye. Do not put anything into the eye unless it is specifically labeled as ophthalmic and you have first consulted with SCDNR.
- When transporting a turtle in/out of the vehicle or from an aircraft to vehicle be aware of the air temperature. All transfers of a turtle from one vehicle to another, from aircraft to vehicle or from a vehicle to a rehab facility should be done as quickly as possible. Plan out the turtle transfer before it occurs. The animal should remain in any transport container it arrived in to minimize exposure to air. Do not delay transfer of turtles due to photo opportunities or other non-medical reasons. Back up one vehicle to the other vehicle or into the rehab facility to avoid any temperature change. At the rehabilitation facility, the vehicle should be backed into the facility before the turtle is removed. **Do not allow the turtle's temperature to rapidly fluctuate by more than 3C/5F due to outdoor air contact**.
- Make sure that all transport containers are padded, clear of any materials that may be accidentally ingested and secure before transportation begins. Do not allow the containers to slide around or tip over during travel.

FLIGHT TRANSPORT PROTOCOL (typically associated with cold-stun turtle events):
Containers must be handled and secured during transport in an upright position. The top of the container must be clearly marked. Containers must be ventilated, padded if necessary, and be free of material that could be accidentally ingested.

- The cabin temperature must be kept between 21C and 27C (70F and 80F).
- Rapid temperature changes must be avoided.
- Turtles must be accompanied by an animal care specialist at both the departure and receiving locations.
- Turtles must be transported in containers as approved by the State Sea Turtle Stranding Coordinator (e.g., wooden crate, banana box, plastic container, or other appropriate container) for transport.