



Case Studies & Decision Tools for Consideration of Repatriation of Confiscated Turtles-
January 2022

Developed by: PARC TNT CCITT Repatriation and Confiscations Working Group

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Introduction: This document contains three elements that were developed by the CCITT Repatriation and Confiscations Working Group: 1) a series of case studies that evaluates factors that went into decisions made to release or not release confiscated turtles back to the wild; 2) a decision tree; and, 3) a decision key. The case studies informed the development of the decision tree and key.

Purpose of the document: The purpose of this document is to: 1) help inform decision-making associated with the outcome of confiscated turtles from illegal trade or possession once a case has been closed; and 2) inform biosecurity, health, disease screening, and repatriation protocols and other needs to help support the best conservation outcome of animals.

Audience: State agency decision makers, state biologists, law enforcement.

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Case Studies for Release/Non-release of Confiscated Turtles-9/2/2021 version

Why we chose these case studies: We chose case studies where we knew the outcome of individuals confiscated and what information was used to make the decision to release or not release turtles back to the wild. We were able to talk to the biologists and law enforcement involved with these cases to get the facts. For the case studies that have individuals that are still being held, we will update as new information becomes available. We will also continue to add new case studies when information is available. A comprehensive list of confiscations is being maintained through the CCITT, and can be found on the google drive.

Target audiences: Law enforcement, biologists, and state natural resource agency decision-makers

TX confiscation (2016): Contributors-Paul Crump (TX Parks and Wildlife Department), Jordan Grey (Turtle Survival Alliance), Dr. Joe Flanigan (Houston Zoo))

Purpose was illegal trade; information on origin obtained through genetic analysis; post release monitoring is being conducted.

Thirty alligator snapping turtles were seized by USFWS in 2016 from a private property in Louisiana. As part of the investigation, Texas Parks and Wildlife Department's Texas Game Wardens and the USFWS's Office of Law Enforcement agents found that three Louisiana men captured more than 60 Alligator snapping turtles in Texas and transported them across state lines for sale. The turtles were held in ponds at the USFWS Natchitoches Fish Hatchery in Louisiana. A genetic library using next generation DNA sequencing was built from 1,000's of genetic samples collected across the species' range and confiscated turtles were tested to help determine what waterways they originated from. Analyses determined that the turtles came from 4 rivers across 2 major drainages that span LA and TX. Twenty-seven turtles were released back to the wild in August 2021. Turtles were pit tagged and radio transmitters will be used to track them post-release. They will be tracked weekly through the end of August 2021 and post release monitoring will likely occur for another two years. Potential recipient sites were assessed based on evidence of low population size (based on trapping), restricted access, and ability to control and access the site. Six sites were evaluated and three sites were ultimately selected. There was no baseline disease screening of existing animals conducted at the sites. There was also no disease screening conducted on the confiscated turtles before they were released. The rationale being that all animals had been collected in Texas waters within a limited distance from each other and from the same drainages. Also, all animals were housed together in the ponds for 5 years not far from their sites of origin. Any infectious organism originally present would have been representative of their site of origin (local) and would have been shared throughout the group due to being in the same water system for years. None had been mixed with species or individuals from other regions. Native wildlife (birds, amphibians) had access, but did not represent different threat than animals would have naturally experienced. Logistics of collecting animals from their pond required the draining of the system. All animals were isolated for hands-on exam and blood collection before release. There were no signs of infectious disease.

WV confiscation (May 2016): Contributors-Kevin Oxenrider, WVDNR and Jay Pilgrim, USFWS Office of Law Enforcement

Purpose was illegal trade; information on origin obtained through case; one species; genetic, disease testing and inoculation conducted by vet

Seventeen turtles were seized in May 2016. Two died and 15 were repatriated in September 2016. Genetic analyses were conducted and compared to the genetic library compiled from the wood turtle Competitive State Wildlife grant. Turtles were housed for 90 days, and had disease testing for Ranavirus and a fecal parasite exam. Turtles were also innoculated. Law Enforcement was able to get information to help with decisionmaking for release-hotel receipts, speeding ticket; perpetrator was cooperative and did say they were collecting in WV.

New York confiscation (August 2018): Contributor-Anne Rothrock, NYDEC; Scott Smith, Maryland Department of Natural Resources; Brian Zarate, NJ Division of Fish and Wildlife; Kevin Oxenrider, WV DNR, Chris Urban, PA Fish and Boat Commission

Purpose was for individual possession to breed as a hobbyist, some turtles were likely released into the wild, traded, and sold; turtles were in captivity for an unknown duration; large numbers; held with multiple species, including non-native species

A large confiscation of reptiles occurred in western New York State in August 2018. The individual was charged with unpermitted possession of over 300 reptiles. Turtles were found housed in the back yard and garage. Seven different native species of turtles were found, including 28 Blanding's turtles, 53 wood turtles, 185 spotted turtles, and 17 bog turtles, 2 painted turtles, 6 snapping turtles as well as 195 eggs. Two of the spotted turtles and two of the bog turtles were notched (indicating that they were from the wild). There were 293 turtles and 195 eggs confiscated in total. Some of the eggs were hatched successfully at zoos. Also of note, of the eggs that were confiscated, 11 snappers hatched and survived. The bin they were in was the only instance where a label identified where they had been collected from the wild. Since we knew the approximate location of the wild nest and they hatched once at the zoo thereby minimizing disease risk, we released those to the wild in September 2018 in the general vicinity of where they were collected. The one repatriation success of the confiscation (at least so far).

Animals went to licensed facilities, Universities, nature centers, and to wildlife rehabilitators and educators. None of the animals were euthanized. For this case study, NY biologists and veterinarians determined the turtles were not candidates for release because they were from multiple, unknown locations and the risk of disease was too high due to being mixed with each other as well as with some non-native (exotic) species. However, of the eggs that were confiscated, 11 snappers hatched and survived. The bin they were in was the only instance where a label identified where they had been collected from the wild. Since there was information on the approximate location of the wild nest and they hatched once placed at the zoo thereby minimizing disease risk, they were released to the wild in September 2018 in the general

vicinity of where they were collected. The one repatriation success of the confiscation (at least so far).

The wood turtles were genetically tested and were given locality assignments based on the genetic library that was assembled from the Wood turtle Competitive State Wildlife grant. Turtles were found to be from Susquehanna, Potomac, and Hudson watersheds and there was fairly high assignment to some of the known blood collection sites in NJ, MD, PA and WV with the majority of the turtles from PA.

Current status of individuals (as of September 2021, information will be updated if the status of these individuals change).

NJ (9 turtles): The turtles are currently housed with an individual from the Turtle Conservancy at his private residence in NJ. Several turtles tested positive for ranavirus, the outcome of these individuals is pending.

MD (6 turtles): These turtles are at the Maryland Zoo that is participating in the AZA Turtle SAFE program. The Zoo and Maryland Department of Natural Resources are developing a headstart program with them using the confiscated female turtles. Males were collected from the wild in 2021. Part of the proposed wood turtle Competitive State Wildlife grant funding is to put transmitters on headstarted wood turtles and track their movements, survival, etc.

ME (1 turtle): The turtle was sent back to Maine and is now at Maine Wildlife Park.

PA (20 turtles): Turtles were released in fall 2021 and post release monitoring will occur.

WV (3 turtles): they will not be repatriating; don't feel like they had enough genetic samples from the first Competitive State Wildlife Grant to feel comfortable releasing to a specific area. The 3 turtles were placed with Universities (Marshall University and West Liberty University) and a local environmental education group (Potomac Valley Audubon Society) for use in outreach programs.

Disease screening: The bog turtles were tested for Ranavirus, Herpes, and Mycoplasma by Bronx Zoo staff. One was positive for Terrapene herpesvirus 1 which they have not found in bog turtles before and concluded it was likely from being held near other turtles in captivity. Three other turtles were positive for a strain of Mycoplasma that had previously been found in spotted turtles in PA and one more with a strain of Mycoplasma that they were unable to ID.

Four species in this confiscation, spotted turtle, wood turtle, bog turtle and Blanding's turtles are incorporated into the AZA American Turtles SAFE program as Confiscation Case Studies designed to track, facilitate and contribute to the development of a process by which confiscated turtles transition from law enforcement and regulatory agencies to specific, measurable, conservation outcomes.

The spotted turtles from this confiscation are included in a case study below involving multiple confiscations.

Florida confiscation (August 2019): Contributor-Jonathan Mays, FL FWC

Purpose was illegal trade; large numbers; multiple species, including some species not native to FL; information from case on where turtles originated from

Over 800 live and 200 dead turtles were confiscated in August 2019 near Fort Myers in Lee County, Florida. There were ten different species confiscated: Florida box turtle (~200 live, +1 dead), Eastern box turtle (16), three toed box turtle (2), Gulf Coast box turtle (2), chicken turtle (8), spotted turtle (1), diamondback terrapin (4: 2 live, 2 dead), spiny softshell turtle (1 juvenile), striped mud turtle (~820: 620 live, 200 dead), Florida mud turtle (~40).

Species native to the county consisted of Florida box turtles, striped mud turtles, Florida mud turtles, chicken turtles and diamondback terrapins. Many of the box turtles were collected from one area, but the majority of the confiscations were Striped and Florida Mud Turtles collected (mostly) from the mainland. The state biologists worked closely with law enforcement during the investigation and during the release. Part of that communication detailed the need to know common collection sites for potential release. Law enforcement knew many of the collection sites because they had been following the poachers while gathering evidence for the case. Animals were released when there was reasonable assurance that they were collected from that area and they were deemed in good health. Two live animals had been pit-tagged (1 Florida box turtle and 1 striped mud turtle; 17 deceased striped mud turtles also had pit tags) and could be released to the site they originated from. Over 200 Florida box turtles (including the pit

tagged individual) were released at one site. This site had an on-site species expert that has been conducting a long term box turtle study, so he was able to make decisions based on known morphology of the population, and released animals are being incorporated into his study. Most of the species were released just several weeks after confiscation. Animals that were not eligible for release (non-native) were re-homed to outreach facilities.

Handling/Health screening: They kept animals separated based on the bins they were found in. Turtles were further separated from those bins based on a coarse health screening (evidence of lethargy, labored breathing, cloudy eyes, nose/eye/mouth discharge). A subsample of 5 turtles out of 15 striped mud turtles that were ill were taken to the state vet and had cloacal and mouth swabs taken for bacteriological assessment. These swabs were sent off to the lab where a suite of cultures were run for common bacteria infection agents. All 15 turtles were treated with varying topical creams (shell rot and injuries) and steroid eye drops (swollen and/or milky eyes). Most importantly, they were isolated in clean water with the option to bask and heat. Most observable health issues cleared within days. They would have been released ~2-weeks post quarantine, but a hurricane delayed the effort a few weeks longer (held/treated for 34 days total and released September 19, 2019). The approximately 200 dead individuals will be further examined if funding is obtained.

Factors considered for release/non-release:

1. Is the species native to the area?
2. Is the individual in good health?
 1. How long has the turtle been held captive? If greater than 6 months, FL law does not allow release.
 2. Has the turtle been exposed to other individuals? Other species?
 3. Quarantine sick or injured turtles which are then observed for a period of time, and tested; once the test results came back and the animals were acting normal, they were released.
3. Do we know where the turtle came from (information from the case or genetic information)?
4. Will the release harm the local population? (e.g., disease transmission, oversaturation, genetic pollution)
5. Are site managers willing to accept released turtles?
6. Are appropriate research questions being considered?

NJ confiscation (July 2018): Contributors: Brian Zarate, NJ Division of Fish and Wildlife, Ryan Connors, U.S. Department of Justice

Purpose was illegal trade; information obtained through case; one species

In 2014 Canadian officials intercepted a package containing 11 diamondback terrapin hatchlings that were inhumanely smuggled from the United States. David Sommers, a Pennsylvania resident, shipped the package and falsely declared it as a book with a value of \$10. United States officials identified Sommers as a common link to many known reptile dealers and bank accounts associated with turtle trafficking. This prompted further federal investigation, which

included search warrants to monitor Sommers' vehicles and to search his home. Federal investigators obtained records to detail his criminal activity, such as bank documents and parcel shipping records. They were able to use various surveillance methods to document his activities. They observed him driving to the New Jersey shore during the night to poach terrapins and their eggs. Though Sommers collected and sold turtles for a number of years, federal officials narrowed the focus of the charge to the period of their investigation, from August 2014 through October 2017. Agents found over 3,500 turtle hatchlings in his house. A federal grand jury charged Sommers with smuggling wildlife and multiple violations of the Lacey Act (<https://www.justice.gov/usao-edpa/pr/levittown-man-indicted-trafficking-protected-turtles>). In coordination with New Jersey officials, 3,572 hatchlings were released to their habitat where they had been poached. Sommers pleaded guilty to violating the Lacey Act, and a judge sentenced him to six-months imprisonment along with a restitution payment of \$250,000 to New Jersey.

Multiple groups of confiscated spotted turtles (2014-2018): Contributor: Dave Collins, AZA Turtle SAFE program and Turtle Survival Alliance.

Purpose was illegal trade; possible test case for decision-making on outcomes since they are still being held

Four groups of Spotted Turtles from separate confiscations (2014-2018) totaling approximately 250 individuals will be sampled and genotyped and included in a genetic analysis of samples collected from populations throughout their natural range with a goal of determining origins of these confiscated turtles.

These confiscations include approximately:

60 adult spotted turtles seized at Dallas Fort Worth in 2014

10 adults seized at O'Hare in 2016/17

35 adults seized at LAX in 2017

148 mixed aged turtles seized in NY at a private residence (above) in 2018

Blood (live) and tissue (dead) samples will be collected using the standardized Regional Spotted Turtle Monitoring Protocol developed by PARC (Partners in Reptile and Amphibian Conservation) and American Turtle Observatory. The confiscation samples are to be included in the range-wide genetic study, which will be centrally analyzed at Virginia Commonwealth University in the lab of Dr. Rodney J. Dyer. The analysis will include assignment tests to identify potential populations of origin and further inform the structure of management units.

With respect to releasability, the NY group has been designated as "not to be released" by NYSDEC due to exposure to exotic species and indeterminate length of time in captivity as well as unknown origin and relatedness. This group received medical evaluations from both Cornell

and Bronx Zoo. Once the genetic results are obtained, it will be up to the states in which the turtles originated to determine whether release will occur.

The three airport seizures have unknown exposure risks prior to confiscation and have now been in human care for an extended period of time.

SC confiscation (August 2019): Contributors-Kurt Buhlmann and Tracey Tuberville, Savannah Research Ecology Lab

Purpose was illegal trade; possible test case for decision-making since they are still being held; multiple species, large numbers

In August 2019, there was a large confiscation in South Carolina. There were several species of turtles, including 220 eastern box turtles. They were being held outside in cattle troughs with no food or water. They separated the turtles into groups (dead, poor condition, healthy). They were transported to an officer's house for several days where they were put in mulch, and fed (strawberries). They were showered with water to keep them cool. Savannah Research Ecology Laboratory took them. SC Department of Natural Resources provided food for them and they were housed in an aviary with water and netting. A health assessment was conducted (see below). Mortality was found to be caused by emaciation and pneumonia. They were moved during the winter to an approximately two-acre fenced "soft-release" enclosure in an old growth forest stand. All of the turtles are pit tagged and 30-40 have radio transmitters to look at site fidelity.

Health assessment conducted:

The first health issue to be determined is supportive care. We often do not know for how long turtles were held in poor conditions; and it likely varied because the poachers are collecting them over time to build up their collection for shipment. Some of the Box turtles were and are in great condition; others were near dead and died shortly after we obtained them. However, there is also a middle group that looked ok—but some of them went downhill (refused to eat and lost weight, and then died), while some recovered (fed and added weight).

-Box Turtles were initially measured (carapace length) and weighed (to nearest gram). This step is also critical in gaining ability to understand initial health parameters and for beginning a health monitoring program.

-Body measurements were subsequently taken: carapace length, carapace width and shell height for volume. In combination with weight can calculate various body condition indices.

-List of samples taken to assess health parameters, assessments: blood smears, and oral and cloacal swabs for pathogen screening. Draw blood for genetics.

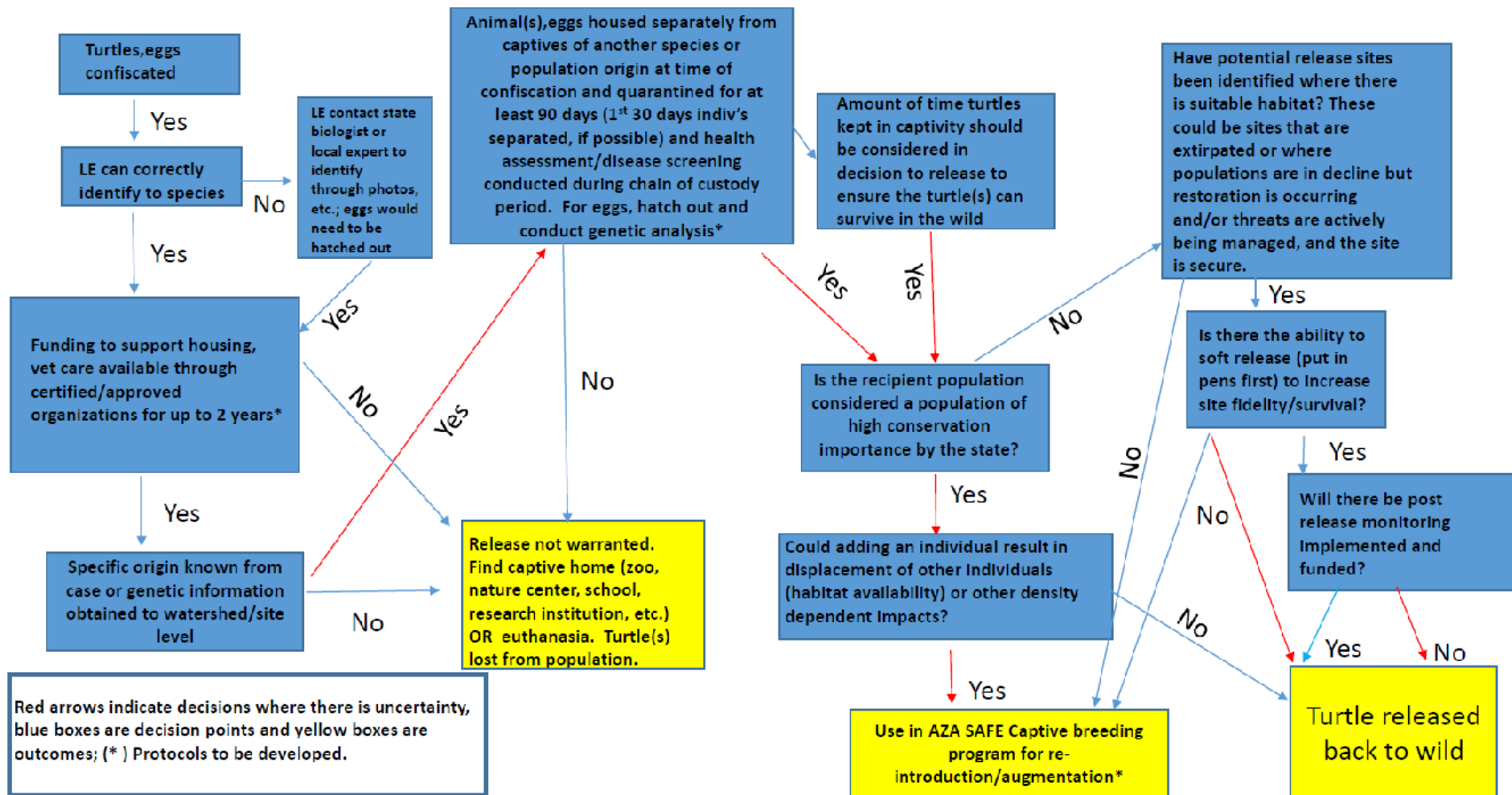
- Plasma (aliquots) for corticosterone, nutrition, and other potential assays

- Lactate measurements and packed cell volumes
- Recorded abnormalities, lethargy, injuries, abnormal behavior.
- Photographs taken of each turtle.

Florida confiscation (2020): Contributor-Brad O’Hanlon, FL FWC

Purpose was illegal trade (repeat offender); information obtained through case; multiple species

Between 2017 and 2019, the Florida Fish and Wildlife Conservation Commission and the United States Fish and Wildlife Service documented the illegal acquisition and sale of approximately 3,500 wild turtles, primarily three-stripe mud turtles, through a wildlife dealer in south Florida. In 2020, several turtles were confiscated from Michael Van Nostrand of Davie, Florida and Strictly Reptiles, Inc., a company also located in Davie. Van Nostrand was sentenced by a federal judge in 2022 for his role in smuggling illegally-harvested Florida turtles out of the United States and into China, Japan, and other places. Turtles, including Florida mud turtles, striped mud turtles, and musk turtles, were held in evidence for two years with a rehabber and after the sentencing of Van Nostrand, then were relinquished to the Florida Fish and Wildlife Commission. Disease screening was conducted and the turtles were tested for turtle herpesvirus-1, ranavirus, and herpes, as well as monitored for several weeks to ensure overall health. There was no genetic analysis done. Information on the origin of the animals was obtained during the investigation. Turtles were released in 2022 to two recipient sites, the majority to one site, and three turtles at a second site. They were pit tagged and notched. Sixteen of the animals are transmittered and will be tracked by students from Florida Southwestern State College.



Decision tree for potential outcomes of confiscated turtles.

Confiscation decision key

(Blue= definition/discussion below)

Turtles confiscated

1. **Specific origin known?**

Yes: Send to local, short-term holding facility (Agency or AZA/SAFE).

Mark and conduct health assessment (comprehensive protocol to be developed by NE Wildlife Disease Coop and AZA SAFE Health WG). Note: The guidelines for when euthanasia is appropriate will be determined in protocol to be developed.

Pass health assessment: release to wild at place of origin or AZA ex-situ population. Note: Must be cleared through health assessment and required chain of custody period before release.

Fail health assessment: initiate treatment.

Re-assess: **Pass health assessment:** release to wild at place of origin.

Fail second health assessment: Good prognosis- send to long term holding facility (AZA/SAFE).

Poor prognosis- **Euthanize**

No: Send to longer term, Chain of Custody (COC) holding facility (AZA/SAFE).

Mark and Conduct health assessment.

Pass health assessment: Sample for genetic analysis.

Assigned origin determined: Candidate for release pending recipient site identification and approval.

Recipient site identified and approved by jurisdictional agency- **Release to wild**

Recipient site not identified or approved- Hold at COC SAFE facility or transfer to AZA/SAFE ex-situ population for research, education, propagation for approved restoration.

Origin not determined: Hold at COC SAFE facility or transfer to AZA/SAFE ex-situ population or other educational facility for research and education

Fail health assessment: Initiate treatment.

Re-assess: Pass health assessment - sample for genetic analysis.

Origin determined: candidate for release pending recipient site identification and approval.

Recipient site identified and approved- **Release to wild.**

Recipient site not identified- Hold at COC SAFE facility or transfer to AZA/SAFE ex-situ population for research, education or other educational facility.

Fail second health assessment:

Good prognosis- Continue treatment.

Poor prognosis- **Euthanize**

Additional considerations for decision-making:

The condition of the site and demographic of the resident population needs to be considered when looking at potential recipient sites. There could be unintended and detrimental social effects to an otherwise functioning population. These populations are likely to exhibit some density dependent behaviors, movements, and growth. This could include social disruption or displacement, and even reduced reproduction for some period of time. Recipient sites where a species has been extirpated but restoration has occurred or threats can be managed may also be considered. In either scenario, it is important to conduct post-release monitoring (protocols to be developed) to evaluate the health and welfare of the released individuals and the native population, and to make sure the site is secure from poaching.

Definitions

Specific origin

Known locality of capture identified during the course of investigation.

Genetic analysis

Samples from confiscated turtles compared to species specific range-wide genetic library to provide assignment to most likely origin. Techniques continue to be honed to provide greatest resolution to specific location of collection.

Assigned origin

Location of capture determined by genetic analysis. Resolution may vary.

Health assessment

A comprehensive evaluation including direct examination, disease and pathogen testing and post-capture risk exposure assessment. Risk assessment would include exposure to: exotic species and potential pathogens, diseased animals, inappropriate and potentially harmful environments, length of time in captivity, etc. A comprehensive Health Assessment Protocol to be developed.

Local, short-term holding facility (Agency or AZA/SAFE).

In cases where capture location is known from pre-confiscation investigations and turtles appear to be in apparent good health, short-term facilities provide immediate husbandry and access to veterinary care for a full health assessment prior to release. Certain zoos may be able to commit to this level/duration of care while not being able to provide a long-term (ca. two year) commitment to Chain of Custody care (see below). In these cases, maintaining animals close to point of confiscation and ultimate release is desirable.

Chain of Custody (COC) holding facility (AZA/SAFE).

Facility committed to care of confiscated turtles throughout the duration of Chain of Custody and culmination of legal proceedings. The duration is highly variable. For planning purposes it is assumed to be a ca. two-year period involving a hierarchical care regime, graduating from intensive care to species-appropriate environmental management. During an initial Q1 phase health assessments, genetic sampling and pit-tagging would be completed, if not done previously. Protocols TBD by AZA/SAFE health assessment team. Initiation of captive breeding programs would not be initiated during this stage.

Long term holding facility (AZA/SAFE).

Long term AZA/SAFE holding facilities are institutions committed to long-term holding of populations of confiscated turtles at the conclusion of Chain of Custody care for the purpose of education, research or conservation. Conservation projects may involve captive breeding,

head-starting and release where viable recipient sites have been identified and with the approval of and typically cooperation with appropriate agencies.