INVENTORY OF AMPHIBIANS AND REPTILES AT CANYON DE CHELLY NATIONAL MONUMENT

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ABSTRACT

The Navajo Natural Heritage Program of the Navajo Nation Department of Fish and Wildlife completed two years of amphibian and reptile inventories at Canyon de Chelly National Monument as part of the National Park Service Inventory and Monitoring Program. The goals of this study were to document at least 90% of the extant herpetofauna through visual observations, photographs, and/or specimen collection; and to provide baseline information, and make recommendations, as warranted, for development of future management of zoological resources within the Monument. Prior to field studies, we estimated that 8 amphibian and 15 reptile species had high potential to occur at the Monument, and that there was a remote possibility for 9 other species to occur. Field inventories extended from 20 May to 29 September 2002, and 19 May to 05 September 2003. We performed triple-replicate, time-constrained surveys at 46 plots, each 1 ha (2.5 ac) in size, in at least 8 distinct habitat types, and performed many hours of nocturnal and diurnal general surveys. We documented a total of 13 reptile species (9 lizards, 4 snakes) and 6 amphibian species (5 frogs/toads, 1 salamander). Our survey efforts documented 82.6% of those species with high potential to occur, 91.3% including 2 additional species documented in a 1970 inventory, but only 59.4% when including species with remote potential to exist in the Monument. The Eastern Fence Lizard (*Sceloporus undulatus*) was the most common reptile, and Woodhouse's Toad (*Bufo woodhousii*) was the most common amphibian. No federal or Navajo Tribal-listed endangered species were documented during this study.

Key Words: amphibian, Canyon de Chelly National Monument, inventory, Inventory and Monitoring Program, National Park Service, reptile, time-constrained surveys.

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INTRODUCTION

The National Park Omnibus Management Act, passed by the U.S. Congress in 1998, has provided federal support for a "program of inventory and monitoring of National Park Service (NPS) resources to establish baseline information and to provide information on the long-term trends in the condition of National Park Service resources." This Act also provides the basis for Congressional funding for the NPS-Servicewide Inventory and Monitoring Program (I&M). This nationwide I&M program is currently compiling and organizing existing resource data for 265 NPS units, and completing inventory and monitoring data to fill data gaps in existing information. The I&M program will provide NPS land managers with comprehensive, scientifically-based information about the nature and status of natural resources within their jurisdictions for the purposes of management decision-making, scientific research, and public education.

The Navajo Natural Heritage Program (NNHP) of the Navajo Nation Department of Fish and Wildlife agreed with the NPS to perform vertebrate and plant inventories of the three national parks that are contained within Navajo Nation lands in Arizona. These parks include Canyon de Chelly National Monument (CACH), Hubbell Trading Post National Historic Site (HUTR) in Apache County, and Navajo National Monument (NAVA) in Navajo and Coconino counties. The Navajo Nation is situated within the south-central part of the Colorado Plateau, and has an elevation range between 853 m (2800 ft) at the mouth of the Little Colorado River, to 3175 m (10416 ft) at the summit of Navajo Mountain. Within this elevation range, there are three recognized ecological zones of (1) cold temperate mountain forest and woodland, (2) intermediate steppe grassland, and (3) arid desert lands. These zones are composed of mosaics of the following biotic communities (Brown 1982): petran sub-alpine and petran montane conifer forest types; Great Basin desert-scrub and conifer woodlands; and plains and Great Basin

Grasslands and sub-alpine grasslands. Annual precipitation ranges from an average of 15 cm (6 in) per year in the desert lands to over 61 cm (24 in) per year in the mountainous areas.

Canyon de Chelly National Monument includes the deep-canyon sections of three major tributaries to southeastern Chinle Wash; those being Whiskey, Wheatfields, and Tsaile creeks. The boundaries encompass the canyons of de Chelly, del Muerto, Monument, and Black Rock. This NPS unit comprises a total of 33930 ha (83840 ac) of sandstone cliffs and canyons, perennial and intermittent riparian habitats, and desert scrub and conifer woodlands above the canyon rim. The elevation ranges from approximately 1670 m (5444 ft) at the mouth of the canyon to around 2225 m (7254 ft). This NPS unit has evidence of occupation by Native Americans as far back as 350 A.D., and still today receives considerable usage by local Navajo People for seasonal home-sites, farming, and livestock grazing, amongst other activities.

A diverse array of distinct habitats and habitat components are recognizable within the boundaries of CACH; these include montane riparian wetlands, Great Basin desertscrub, Great Basin conifer woodland, Rocky Mountain conifer forest of both ponderosa pine and mixed-conifer community types (Brown 1982), and additionally, cultivated fields and sheer-cliff walls.

One previous faunal inventory of the Canyon de Chelly region (Burgess 1970) provided documentation on amphibians and reptiles (and fish) collected between 15 June and 28 August 1970 (Table 1). Burgess (1970) listed 14 reptiles and 8 amphibians collected from the region; however, only 12 of the reptile, and 6 of the amphibian, species were actually collected within the boundaries of Canyon de Chelly National Monument. During the planning stages of the I&M inventories, Stuart (2000) predicted that there were 24 herpetofauna species likely to occur at CACH. We also developed a list (Table 2) of species with ‘high’ and ‘remote’ potentials to occur using the known ranges of species and knowledge of habitat types within CACH. We

estimated that there were 23 species (8 amphibians and 15 reptiles) with a high potential to occur, and another 9 species (3 amphibians and 6 reptiles) with a remote potential to occur there.

The objectives of this portion of the NPS I&M inventories were to: 1) document at least 90 percent of the amphibian and reptile species occurring within Canyon de Chelly National Monument using existing, verifiable documentation and taxa-specific, field surveys with methodologies consistent with other NPS units in the Southern Colorado Plateau Network; 2) complete and transfer all documentation of species presence, and collected data in hard-copy and digital formats usable by the NPS; complete NPS's database with these data; and 3) identify species of concern, provide baseline information, and make recommendations, as warranted, for development of future management and monitoring schemes of zoological resources within the Monument.

METHODS

We employed standardized inventory methods that were used at other NPS units in the Southern Colorado Plateau, following a stratified-sampling scheme (by habitat) as outlined in Stuart (2000). We used the following survey techniques to determine the diversity of amphibians and reptiles at CACH: diurnal time-constrained surveys (TCSs), nocturnal and diurnal general surveys (especially at temporary and permanent water sources), and random road-cruising. We had planned to use two other methods (pit-fall trapping [Corn 1994] and nocturnal time-constrained surveys), however, delays in fund acquisition and lack of personnel prevented us from pit-fall trapping. We had attempted several nocturnal TCSs early in the 2002 field season, but determined them to be cost- and study-inefficient and shifted more effort to nocturnal general surveys.

Diurnal time-constrained searches (Crump and Scott 1994) are a type of visual encounter survey that produce data on the number of species/individuals encountered per person-hour, while also standardizing the size of area surveyed. The diurnal TCSs were performed by one person searching systematically for one hour within a square 1-ha (2.5-ac) plot roughly centered on a pre-selected point. All microhabitats and sites likely to harbor amphibians and reptiles were thoroughly searched, including under and within rocks, logs, tree cavities, dense vegetation, and on open ground. Each plot was sampled three times in one year during the months of May-June, July, and August-September, to maximize effort in each phase of the breeding cycle. To provide the best chance of detecting reptiles and amphibians if they were present, we made every attempt to avoid performing TCSs during the hottest part of the day (13.00 to 16.00 hrs).

To ensure that the entire plot was surveyed, the 4 corners of each sample plot were determined, using a hand-held global positioning system (GPS) unit (reportedly accurate to < 15 m), and marked with flagging. One corner was located at a randomly-selected compass direction from the center point, while the following 3 corners were determined by projecting lines, 100 m (328 ft) in length, from the first corner. The lines were at the proper azimuths to create a square plot around the center point. Plot centers and corners were marked with red flags and white flagging to ensure all survey effort was contained in the plot. The locations (in Universal Trans Mercator -UTM), of plot centers and corners are provided in Appendix A to allow for possible continuation into a monitoring program using the same plots.

The number and locations of TCS plot centers were selected, and provided to NNHP, by the I&M Planning Team. The number of plots needed was estimated as the number of sample points needed to detect 90% of the estimated number of species. Sample points were then stratified within the vegetation classification system so that an appropriate number of points were

placed within each vegetation type (see Stuart [2000] for details). A total of 46 TCS plots (Appendix A and Table 3) were determined necessary for CACH. The 46 plots were assigned to 1 of 6 representative habitat types, including riparian, agriculture, grassland, desert scrub, pinyon-juniper, and ponderosa pine. However, we found that the existing habitat ('actual') at some plot locations did not match the habitat type 'predicted' during the planning process (see Table 4). We performed the TCS at the provided location, as directed, and documented the actual habitat components to accurately identify the habitat type. Also, it should be noted that one habitat type, Douglas-fir mixed-conifer forest was omitted during the planning process and therefore received no TCS plots.

During each TCS, all amphibians and reptiles found within the 1-ha (2.5-ac) plot and 1-hr time period were identified to species (and sex and age group, when possible) and enumerated. Digital photographs were taken when possible and necessary to document their occurrence. Data on the time of survey and ambient weather conditions were also collected.

Nocturnal general surveys at temporary and permanent water sources were effective at detecting amphibians at various life stages, and were used primarily for collecting presence/absence data and increasing the species list. These surveys were conducted in the early evening until midnight, when amphibians were most active, and typically targeted water sources found on topographic maps or found during diurnal TCS surveys. We attempted to survey all permanent water at least once during the study. Surveys were conducted as one person used all means available to detect amphibians, including walking the perimeter of water searching for amphibians at all life stage, dip-netting, and listening for calling adults. The time spent at each water source was variable and was determined by the size of the water and the number of amphibians encountered.

Diurnal general surveys were performed within habitats likely to harbor reptiles and amphibians not typically encountered in TCS surveys. We typically performed these surveys in habitats under-represented in TCS plots (including water sources), and with the intention of detecting uncommon species that occupy unique habitats. These surveys were typically conducted during the times of day that were unsuitable to perform TCSs.

Random road-cruising is our term for a method involving driving roads, typically two-track roads, at times and places likely to encounter amphibians and reptiles. These surveys were considered 'random' because they were conducted for an unspecified distance, amount of time, and they were not replicated (unlike in Shaffer and Juterbock 1994). They were conducted solely to detect individuals with the goal of increasing the total species list.

A list of amphibian and reptile species expected to occur within CACH (Table 2) was derived using knowledge of the local herpetofauna, recognized range maps of each species (Stebbins 1985 and Stebbins 2003), and knowledge of habitats found in CACH. We predicted that there were 8 species of amphibians, and 15 species of reptiles with 'high' potential to occur in CACH, and another 2 amphibians and 7 reptiles with a 'remote' potential to occur there. Table 2 also provides comments on the distribution and abundance of each species on the Navajo Nation.

Digital photographs were taken to document the habitat type at each TCS plot and to document the occurrence of each species identified during all survey types. A database (Appendix B) provides details on each photograph transferred to the NPS. We had begun collecting specimens during the 2002 field season; however, given the ability of digital photographs to sufficiently document species, we shifted to only collecting amphibians and

reptiles found dead. All specimens collected during this inventory were transferred to NPS for inclusion in a reputable museum.

RESULTS

We documented the presence of 19 herpetofauna species (Table 5) within the boundaries of CACH during 2002 and 2003, which included 6 amphibian (5 frogs/toads and 1 salamander) and 13 reptile (9 lizards and 4 snakes) species. This inventory detected: 79.1% of the number of species (24) estimated to occur by Stuart (2000); 82.6% of the number of species (23) we determined to highly likely occur there; and 59.4% of the number of species (32) likely to, and remotely possible to, occur within CACH. Time-constrained surveys alone detected 17 amphibian and reptile species, which was 73.9% of the number we estimated to have hight potential to occur.

Burgess (1970) documented the presence of two species within the boundaries of CACH that were not encountered in this study, those being the Northern Leopard Frog (*Rana pipiens*) and Lesser Earless Lizard (*Holbrookia maculata*). Including these two species in our tally, results in documentation of: 87.5% of the number of species estimated to occur there by Stuart (2000); 91.3% of the number of species we determined highly likely to occur there; and 65.6% of the number of species likely to, and remotely possible to, occur there.

We derived a species accumulation curve based on the cumulative number of species documented during each day of survey (Figure 1). This graph revealed a relatively fast documentation of the first 10 species (15 survey-days), then a more gradual increase from 11 to 19 species (34 survey-days). The graph also revealed that the last (19^{th}) species detected in this survey was at day 49, and that there were no additional species detected during the last 17 survey-days.

Table 5 summarizes basic information on the species documented during this study, and includes the two species detected within CACH boundaries by Burgess (1970) that were not detected by us. Also included in the summary are: the number of plots in which each species was detected; the number of locations that the species was encountered by other survey methods, and the date that the species was first documented in this study. We recorded all locations of detection for each species in this study (Appendix C), except for four lizard species that were too numerous and widespread to provide full encounter-documentation; they include Plateau Striped Whiptail (*Cnemidophorus velox*), Sagebrush Lizard (*Sceloporus graciosus*), Eastern Fence Lizard (*Sceloporus undulatus*) and Side-blotched Lizard (*Uta stansburiana*). Figure 2-16, maps of the TCS plots, their cumulative list of species found during surveys, and locations of herpetofauna detected by other survey methods, are included to provide a visual reference of the data contained in Appendices A and C.

An analysis of the number of species and number of individuals detected at each TCS plot is provided in Table 3. These results showed that the numbers of species and individuals were rather variable but overall relatively low. Plots in riparian habitats typically had the highest diversity and abundance of herpetofauna; whereas, plots in desert-shrub were mostly devoid of reptiles and amphibians.

All reptiles and amphibians species encountered during this study were documented with a total of 307 digital photographs and we documented the habitat at each TCS plot with 105 digital photographs (both listed in Appendix B). Figures 17-40 are representative digital images taken at CACH of each species found during this study. For herpetofauna found during general surveys, digital photographs were named with the following code: first three letters of the scientific name, four-letter NPS unit name, date (in month-day-year format), and a unique

sequential letter (e.g. AmbTigCACH5-28-02a). Herpetofauna recorded during TCSs were named with: the first 3 letters of the scientific name, unique TCS plot number, four-letter NPS unit name, date (in month-day-year format), and a unique sequential letter (e.g. BufPun881CACH8-21-03a). Habitat photographs (Figures 41-52) of TCS plots are named with: four-letter NPS unit name, unique TCS plot number, 'hab' (for habitat photograph), and a unique sequential number (e.g. CACH10102hab1). In addition, we collected a total of seven specimens from CACH (Appendix D).

DISCUSSION

This inventory was effective at documenting between 79.1 and 82.6% of the number of expected species at CACH, depending on whether the expected number is that of Stuart (2000) or ours (Table 2), respectively. We documented three species not found by Burgess in 1970, but also did not detect two that he had found. When combining the results of both inventories, between 87.5 and 91.3% (again depending on expected number of Stuart [2000] or us) of the species highly likely to occur at CACH have been documented.

The most common and widespread reptile species was clearly the Eastern Fence Lizard, as it was detected at nearly three-quarters (73.9%) of the survey plots (Table 5), and was commonly found in the uplands, as well as inside the canyons, of 'de Chelly, 'del Muerto', and Black Rock canyons. It existed throughout the elevation range of 1695 to >2100 m (5560 to >6890 ft) of CACH, and in near all habitat types (from ponderosa pine to riparian). The Plateau Striped Whiptail was also determined to be a common, widespread lizard (43.5% of the plots) that primarily occupied habitats of riparian and pinyon-juniper grasslands/woodlands. The sagebrush lizard was rather common and widespread north of Black Rock Canyon, however, it was curiously missing in and around the Whiskey Creek branch of CACH. The Woodhouse's

Toad (*Bufo woodhousii*) was the most common and widespread amphibian detected during these surveys. It was found breeding at most permanent, and many temporary, still-waters throughout CACH; and was occasionally found wandering away from waters after summer rains began. The Red-Spotted Toad (*Bufo punctatus*), was rather common in Tsaile Creek and its tributaries in CACH, and at permanent waters north of Black Rock Canyon; however, it was also curiously absent from the Whiskey Creek branch.

Six species were detected at three or fewer locations during the two years of survey (Table 5); these species included: Plains Spadefoot (*Spea bombifrons*), Western Whiptail (*Cnemidophorus tigris*), Many-lined Skink (*Eumeces multivirgatus*), Prairie Rattlesnake (*Crotalus viridis*), Striped Whipsnake (*Masticophis taeniatus*), and Gopher Snake (*Pituophis catenifer*).

By far, the riparian habitats along Whiskey and Wheatfields creeks provided the highest counts and most diversity of herpetofauna. This was not unexpected, as riparian areas usually provide excellent habitats for amphibians and reptiles as increased moisture levels usually provide: dense ground, and multiple-layered, vegetation, multi-structured ground substrate (trees, rocks, boulders, and creek banks), and water for sustaining life and medium for amphibian breeding. Conversely, desert-scrub habitats are usually monotypic short-shrublands with few places for herpetofauna to seek refuge. We also found that some of the pinyon-juniper lands above the canyon rims often presented rather sterile environments for amphibians and reptiles, at least during these drought years. In pinyon-juniper woodlands, there often seemed to be sufficient cover for reptiles in the form of holes in live junipers and dead-down pinyon-juniper, but reptiles were infrequently found there. Pinyon-juniper habitats with rocks and boulders, especially those on rocky slopes and at the canyon rims, were usually much more productive

with reptiles. Ponderosa pine, and ponderosa pine/pinyon-juniper, forests were surprisingly low in numbers and diversity of herpetofauna despite the large amount of available cover. Perhaps the drought conditions may be the primary cause of low counts in these habitats. Lastly, grasslands were typically only productive for reptiles around rocky areas or small drainages that provided some topographic diversity and cover. These results show that riparian areas within CACH should be given high priority during resource management planning, and that the herpetofauna may comprise a suite of fauna suitable for monitoring the effects of riparian habitat modifications.

We were concerned that the habitat types predicted for some TCS plots did not match the habitat that was actually encountered there (Table 4), making it unclear whether a sufficient number of TCS plots were performed in each habitat type based on Stuart (2000). Further, there were incorrect predictions throughout all habitat types (e.g. predicted ponderosa pine was actually pinyon-juniper, predicted grassland was actually steep cliff or sandstone bedrock). Also alarming was that one major habitat type (Douglas-fir/mixed-conifer woodlands that occurs on many north-facing slopes in CACH) received no TCS plots. Unfortunately, given the time required to survey the large number of TCS plots at CACH, little time was available to explore areas with this habitat type.

Of the two species originally documented by Burgess (1970) that were not detected by us (Northern Leopard Frog and Lesser Earless Lizard), only the lizard likely still exists within CACH. Perhaps this species was not detected because of the small amount of time spent in its preferred habitat, which seems to be soft-sandy grasslands. This habitat occurs mostly in the lower parts of CACH just east of Chinle; however, no individuals of this species were encountered there. There is little doubt that the species still occurs within CACH however.

Conversely, Northern Leopard Frog has suffered a precipitous decline in populations across the Navajo Nation in more recent years. For example, the entire population of *R. pipiens* was lost from the Chuska Mountains in the last 10 years, from what was a seemingly healthy meta-population of more than 10 breeding locations. Small isolated breeding locations, such as the one found by Burgess in 1970, are usually more prone to extinction, and this one was likely lost earlier than the 1990s. Other species not detected by this inventory, still may exist in CACH. This would include species that we declared as having 'remote' potential in Table 2, and especially those found by Burgess (1970) in Chinle Valley, but outside of the CACH boundaries (Table 1). These would especially include several snake species such as: Eastern Glossy Snake (*Arizona elegans*), Night Snake (*Hypsiglena torquata*), and Longnose Snake (*Rhinocheilus lecontei*).

We found that the TCS-plot method was fairly effective at detecting most of the herpetofauna of CACH. Table 5 shows that 15 of the 19 species (78.9%) were detected on at least 1 TCS plot during at least 1 year of the study. Thus, it is not surprising with the large number of survey plots and the diversity of habitat represented, the TCS-plots accounted for 65.2% of the total number of expected species. Of those not found during diurnal TCS surveys, the Eastern tiger salamander (*Ambystoma tigrinum*) was only found by dip-netting ponds or by nocturnal general surveys at permanent still waters; the two spadefoot toads (*Spea multiplicata* and *S. bombifrons*) were only found by random nocturnal road-cruising during, and after, heavy summer rains; and only one Striped Whipsnake was found during a diurnal general survey. It was clear from the results that TCSs were not as effective at producing accurate abundance and distributional information for most amphibians, as amphibians were detected much more frequently by other survey methods. Perhaps more reliable abundance and distribution data

would result if ‘permanent-still-water’ was considered as a unique habitat type during inventory planning stages, and that TCS plots were established at a sample of them.

It is difficult to determine, and impossible to measure, possible effects that the recent drought conditions had on herpetofaunal populations, daily cycles of individuals, and their detectability by these survey methods. It seemed apparent that in some areas, the extreme hot, dry conditions severely limited their daily activity, perhaps sent some or many into aestivation, or otherwise made them undetectable during surveys. For example, a TCS plot within a prairie-dog (*Cynomys gunnisoni*) town in desert-scrub habitat near Whiskey Creek seemingly provided suitable habitat for many lizard and snake species; however, only one Mountain Short-horned Lizard (*Phrynosoma hernandesi*) was encountered during one TCS. Drought also seemed to negatively affect the amphibian populations in Tsaile and Wheatfields creeks in CACH. These creeks seem to be provide suitable breeding habitat as spring run-off recedes and leaves many small breeding pools. The major effect of the drought was a quicker drying of these pools and desiccation of many toad (*Bufo* spp.) larvae. The fact that the water levels in both Wheatfields and Tsaile lakes have been lowered in recent years, due to safety of dams issues, presented additional challenges for breeding amphibians. In 2003, Tsaile Creek was a rather deep, rushing creek throughout most of upper Canyon del Muerto, but flows were severely reduced by the June survey, leaving many larval amphibians with no water to survive.

Drought may also affect the water levels in the ponds inhabited by the Eastern Tiger Salamander and other amphibians. Most ponds we visited appeared to have sufficient water levels to allow for amphibian breeding, and only a few ponds we visited were clearly negatively affected by drought. However, this condition should be continued to be monitored for possible future depletion of sufficient still water, which may reduce populations of amphibians that

typically require more permanent water, or breed prior to summer rains. Realizing the possible negative influences of drought, one should recognize that this inventory was performed during two years of drought conditions, and the results may not be directly comparable to herpetofaunal monitoring in the same sites under different conditions.

Although no federal or Navajo Tribally-listed endangered species were identified in this inventory, one interesting discovery was made. We found that there may be a high and varying degree of inter-breeding between the two spadefoot toad species found at CACH. Hybridization is reportedly not uncommon between these two species in other areas. Most adult *Spea* documented in this inventory seemed to most closely fit characteristics of *S. multiplicata* (e.g. lack of prominent cranial boss between eyes, uniform dorsal color with small dark spots and small orange or red tubercles), but they also appeared to have some characteristics of *S. bombifrons* (e.g. irregular light dorsal body stripes defining an hour-glass shape). Evidence of inter-specific breeding was most obvious in one adult captured and photographed on 05 August 2002, which seemed to show an equal amount of characteristics of both species (especially the pug-dog profiled face and bony boss between the eyes of *S. bombifrons*). This individual was determined to have enough characteristics to document the presence of *S. bombifrons* at CACH, even though we found none that were identified as 'non-hybrid' *S. bombifrons*. This work identified the need to evaluate the *Spea* species across The Navajo Nation.

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Table 1. Amphibian and reptile species documented, and 'possible' to occur[1], within and near[2] Canyon de Chelly National Monument (Burgess, 1970).

Species	Common Name	Comments
	AMPHIBIANS	
Ambystoma tigrinum	Eastern Tiger Salamander	3 found, 2 from 1 area on NPS lands
Bufo punctatus	Red-Spotted Toad	3 found from 1 area on NPS lands
Bufo woodhousii	Woodhouse's Toad	4 found from 4 areas on NPS lands
Hyla arenicolor	Canyon Treefrog	2 found from 2 areas on NPS lands
[2] ***Pseudacris triseriata***	Western Chorus Frog	4 found in Chuska Mtns. outside NPS lands
Rana pipiens	Northern Leopard Frog	4 found, in Chuska Mtns. and Tsaile Lake Dam
[2] ***Spea bombifrons***	Plains Spadefoot	recorded as *Scaphiopus bombifrons* from outside NPS
Spea multiplicata	New Mexico Spadefoot	recorded as *Scaphiopus hammondi*- W. Spadefoot
	REPTILES – Lizards	
[1] ***Cnemidophorus tigris***	Western Whiptail	only reported as "may occur...in Chinle Valley"
Cnemidophorus velox	Plateau Striped Whiptail	reported from 4 areas on NPS lands
Crotaphytus collaris	Eastern Collared Lizard	reported from 2 areas on NPS lands
Eumeces multivirgatus	Many-lined Skink	1 found near Tsaile Lake in C.del Muerto
[1] ***Gambelia wislizenii***	Longnose Leopard Lizard	only reported as "may occur...in Chinle Valley"
Holbrookia maculata	Lesser Earless Lizard	reported 6 found in 1 area near staff residence
Phrynosoma hernandesi	Mtn. Short-horned Lizard	reported as *P. douglassi* from 3 areas
Sceloporus graciosus	Sagebrush Lizard	reported 7 found, 5 from 3 areas on NPS lands
[1] ***Sceloporus magister***	Desert Spiny Lizard	only reported as "may occur...in Chinle Valley"
Sceloporus undulatus	Eastern Fence Lizard	reported from 5 areas on NPS lands
Urosaurus ornatus	Tree Lizard	reported from 3 areas on NPS lands
Uta stansburiana	Side-blotched Lizard	reported from 3 areas on NPS lands
	REPTILES – Snakes	
[2] ***Arizona elegans***	Eastern Glossy Snake	5 found off NPS lands(?) and around Chinle
[1] ***Coluber constrictor***	Racer	only reported as "possible in the region"
Crotalus viridis	Prairie Rattlesnake	8 found mostly around Chinle, 1 on NPS lands
[1] ***Hypsiglena torquata***	Night Snake	only reported as "possible in the region"
[1] ***Lampropeltis triangulum***	Milk Snake	only reported as "possible in the region"
[1] ***Masticophis flagellum***	Coachwhip	only reported as "possible in the region"
[2] ***Masticophis taeniatus***	Stiped Whipsnake	1 found off NPS lands at Chinle Wash
Pituophis catenifer	Gopher Snake	reported as *P.melanoleucus*; 7 found, 1 on NPS
[1] ***Thamnophis cyrtopsis***	Blackneck Garter Snake	only reported as "possible in the region"
Thamnophis elegans	W. Terrestrial Garter Snake	reported from 7 areas on NPS lands

[1] species only reported as "possible" to occur on NPS lands of Canyon de Chelly by Burgess (1970)
[2] species found by Burgess (1970), but only from sites outside of Canyon de Chelly boundaries

Table 2. Amphibians and reptiles considered potential to exist at Canyon de Chelly National Monument, based on whether the species' reported distribution[2] includes the Monument (Species' Range?) and on the presence of available habitat.

Species[1]	Common Name	Species Range[2]?	Habitat Present?	Degree of Potential[3]	Comments on Distribution and Population on the Navajo Nation
		AMPHIBIANS			
Ambystoma tigrinum	Tiger Salamander	Yes	Yes	High	widespread; locally common at perennial still water
Bufo cognatus	Great Plains Toad	Yes	Yes	High	unclear distribution, few records
Bufo punctatus	Red-Spotted Toad	Yes	Yes	High	widespread; common at still/running waters
Bufo woodhousii	Woodhouse's Toad	Yes	Yes	High	widespread; common at still/running waters
Hyla arenicolor	Canyon Treefrog	Yes	Yes	High	widespread; locally common
Pseudacris triseriata	Western Chorus Frog	Yes[5]	No	Remote	only in high elevation perennial still water (Chuskas)
Rana catesbeiana	Bullfrog	Yes[6]	Yes	Remote	exotic; potential only via human intervention
Rana pipiens	Northern Leopard Frog	Yes	Yes	High	recent precipitous declines; now very rare
Spea bombifrons	Plains Spadefoot	Yes	Yes	High	likely widespread but unclear distribution; common?
Spea multiplicata	New Mexico Spadefoot	Yes	Yes	High	widespread; common at temporary/perennial waters
		REPTILES -- Lizards			
Cnemidophorus inornatus	Little Striped Whiptail	--	--	--	mis-identified specimen; range incorrect in Stebbins
Cnemidophorus tigris	Western Whiptail	Yes	Yes	High	widespread; locally common
Cnemidophorus velox	Plateau Striped Whiptail	Yes	Yes	High	widespread; common
Crotaphytus collaris	Eastern Collared Lizard	Yes	Yes	High	widespread; locally common
Eumeces multivirgatus	Many-lined Skink	Yes	Yes	High	widespread; locally common in riparian habitats
Holbrookia maculata	Lesser Earless Lizard	Yes	Yes	High	widespread; locally common in desert grasslands

Phrynosoma hernandesi	Mtn. Short-horned Lizard	Yes	Yes	High	widespread; common in variety of habitats
Sceloporus graciosus	Sagebrush Lizard	Yes	Yes	High	widespread; common
Sceloporus magister	Desert Spiny Lizard	Yes	Yes[6]	Remote	only in low-elevation canyons; locally common
Sceloporus undulatus	Eastern Fence Lizard	Yes	Yes	High	widespread; common
Urosaurus ornatus	Tree Lizard	Yes	Yes	High	widespread; locally common in PJ & rocky habitats
Uta stansburiana	Side-blotched Lizard	Yes	Yes	High	widespread; common in variety of habitats
		REPTILES -- Snakes			
Arizona elegans	Eastern Glossy Snake	Yes	Yes	High	unclear distribution; few NN records
Crotalus viridis	Prairie Rattlesnake	Yes	Yes	High	widespread; common in variety of habitats
Heterodon nasicus	Western Hognose Snake	Yes[6]	Yes	Remote	restricted to San Juan River?; few NN records
Hypsiglena torquata	Night Snake	Yes[6]	Yes	Remote	unclear distribution; larger range than Stebbins?
Lampropeltis getula	Common Kingsnake	Yes[6]	No	Remote	only in low-elevation canyons; 1 NN record
Masticophis taeniatus	Striped Whipsnake	Yes	Yes	High	widespread; locally common in riparian habitats
Pituophis catenifer	Gopher Snake	Yes	Yes	High	widespread; common in several habitats
Rhinocheilus lecontei	Longnose Snake	Yes[6]	No	Remote	only in low-elevation canyons; 0 NN records
Salvadora hexalepis	Western Patchnose Snake	Yes[6]	No	Remote	only in low-elevation canyons; 0 NN records
Thamnophis cyrtopsis	Blackneck Garter Snake	Yes[6]	No	Remote	restricted to San Juan River?; few NN records
Thamnophis elegans	West.Terrest. Garter Snake	Yes	Yes	High	widespread; locally common

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[1]Collins and Taggart (2002) used for species names
[2]Stebbins (1985) and Stebbins (2003) used for range maps
[3]Degree of potential determined by combination of recognized range and presence of quality habitat for the species ('--' means 'no' potential to occur)
[4]No breeding habitat within NPS boundaries, require permanent/near-permanent still water
[5]Range overlap with NPS boundaries is questionable
[6]Range not overlapping NPS boundaries, but has potential habitat corridor to known range

Table 3. Summarized results of 1-hr time-constrained surveys (with 3 repetitions) at 46 randomly selected 1-ha plots at Canyon de Chelly National Monument, with a comparison of habitat predicted by the I & M Planning Team versus the actual habitat for each plot.

Plot I.D.	Predicted Habitat	Actual Habitat	Survey Year	Canyon	No. Species Each Survey	No. Herps. Each Survey
881	Grassland	Sandstone Bedrock	2003	Confluence	2, 1, 3	3, 4, 13
1010	Grassland	Grassland	2003	Confluence	0, 1, 2	0, 1, 3
1149	Grassland	Desert-scrub	2003	Confluence	1, 1, 1	3, 3, 2
1151	Desert Scrub	Riparian	2003	Confluence	1, 1, 0	2, 1, 0
1955	Desert Scrub	Riparian	2003	Confluence	2, 1, 3	9, 4, 8
2097	Grassland	Sandstone Bedrock/P-J	2003	Confluence	1, 3, 3	2, 4, 6
3443	Grassland	Sandstone Bedrock/P-J	2003	Cd Muerto	1, 2, 2	1, 2, 5
3980	Grassland	P-J/Grassland	2003	Cd Chelly	1, 0, 0	1, 0, 0
4123	Grassland	Grassland (Disturbed)	2003	Cd Muerto	2, 2, 2	5, 13, 3
5055	Desert Scrub	Riparian	2003	Cd Chelly	1, 1, 3	2, 2, 6
5179	Pinyon-Juniper	P-J/Desert-scrub	2002	Cd Chelly	1, 0, 3	1, 0, 3
5340	Desert Scrub	P-J/Grassland	2002	Cd Muerto	2, 1, 3	3, 3, 3
5343	Desert Scrub	Pinyon-Juniper	2003	Cd Muerto	1, 2, 1	2, 2, 1
5881	Desert Scrub	Pinyon-Juniper	2003	Cd Muerto	2, 1, 2	2, 1, 5
6284	Pinyon-Juniper	P-J/Desert-scrub	2003	Cd Muerto	1, 0, 1	3, 0, 2
7244	Pinyon-Juniper	Pinyon-Juniper	2003	Cd Muerto	0, 0, 0	0, 0, 0
7503	Pinyon-Juniper	P-J/Bedrock	2003	Cd Muerto	1, 1, 3	4, 1, 4
7897	Pinyon-Juniper	Pinyon-Juniper	2003	Cd Muerto	0, 0, 0	0, 0, 0
8051	Grassland	Grassland	2003	Cd Muerto	1, 2, 2	3, 6, 6
8406	Pinyon-Juniper	Pinyon-Juniper	2002	Cd Chelly	3, 2, 2	4, 4, 4
8447	Pinyon-Juniper	Pinyon-Juniper	2003	Cd Muerto	0, 1, 0	0, 1, 0
8820	Pinyon-Juniper	P-J/Bedrock	2002	Cd Chelly	1, 2, 2	2, 4, 4
8990	Pinyon-Juniper	Pinyon-Juniper	2003	Cd Muerto	1, 1, 1	1, 1, 4
9154	Pinyon-Juniper	Pinyon-Juniper	2003	Cd Muerto	2, 1, 2	3, 1, 2
9922	Pinyon-Juniper	Pinyon-Juniper	2003	Cd Muerto	0, 1, 1	0, 2, 1
10102	Riparian	Riparian	2003	Cd Muerto	2, 1, 2	4, 2, 6
10563	Pinyon-Juniper	Pinyon-Juniper	2002	Cd Chelly	1, 1, 1	1, 1, 1

Table 3 – Continued.

10584	Riparian	Riparian	2002	Cd Chelly	3,	3,	4	6,	18,	16
11006	Pinyon-Juniper	Desert-scrub/P-J	2003	Cd Muerto	0,	0,	0	0,	0,	0
11047	Riparian	Riparian	2003	Cd Muerto	5,	4,	4	11,	14,	10
11182	Riparian	Riparian	2003	Cd Muerto	2,	2,	4	4,	6,	14
11397	Agriculture	Riparian	2002	Cd Chelly	5,	2,	3	*7,	18,	17
11936	Pinyon-Juniper	Gambel Oak/P-J	2002	Cd Chelly	1,	1,	1	5,	3,	6
12828	Pinyon-Juniper	Ponderosa Pine	2002	Cd Chelly	0,	1,	1	0,	1,	2
12880	Pinyon-Juniper	Pinyon-Juniper	2002	Cd Chelly	1,	1,	3	1,	1,	6
12964	Pinyon-Juniper	P-J/Ponderosa Pine	2002	Cd Chelly	1,	2,	1	4,	8,	6
13013	Pinyon-Juniper	Pinyon-Juniper	2002	Cd Chelly	1,	0,	1	1,	0,	1
16188	Pinyon-Juniper	Desert-scrub	2003	Cd Muerto	0,	0,	0	0,	0,	0
17082	Pinyon-Juniper	P-J/Ponderosa Pine	2002	Cd Chelly	0,	0,	2	0,	0,	2
18162	Ponderosa Pine	Desert-scrub	2002	Cd Chelly	0,	0,	1	0,	0,	1
18537	Pinyon-Juniper	Pinyon-Juniper	2002	Cd Chelly	1,	1,	1	7,	5,	9
18694	Ponderosa Pine	Desert-scrub/P-J	2002	Cd Chelly	1,	1,	2	1,	3,	4
18817	Ponderosa Pine	Desert-scrub/P-J	2002	Cd Chelly	0,	0,	1	0,	0,	1
18957	Ponderosa Pine	Desert-scrub/P-J	2002	Cd Chelly	1,	2,	3	3,	12,	11
19365	Pinyon-Juniper	Desert-scrub	2002	Cd Chelly	0,	1,	0	0,	1,	0
19385	Ponderosa Pine	Desert-scrub	2002	Cd Chelly	0,	0,	1	0,	0,	1

Table 4. Number and percentages of TCS plots within each 'predicted' habitat type deemed necessary during project planning versus 'actual' habitat types found at TCS plots; amount and percent of differences are also included.

Habitat Type	No. of Predicted	% of Predicted	No. of Actual	% of Actual	Amount of Differ	% Difference
Riparian	4	09	8	17	+4	+8
Grassland	8	17	3	07	-5	-10
Agriculture	1	02	0	0	-1	-2
Desert Scrub	6	13	9	19	+3	+7
Pinyon-Juniper	22	48	21	46	-1	-2
Ponderosa Pine	5	11	1	02	-4	-9
Gambel Oak	0	0	1	02	+1	+2
Sandstone Bedrock	0	0	3	07	+3	+7
Total	46	100	46	100		

Table 5. List of amphibians and reptiles documented at Canyon de Chelly National Monument during 2002 – 03; those previously documented (Burgess 1970) within the NPS boundary; and summarized results of TCSs at 46 plots, and other survey methods.

Species[1]	Common Name	Burgess 1970	No. Plots Species Occurred	No. Sites Species Found By Other Methods	Date First Documented
		AMPHIBIANS			
Ambystoma tigrinum	Tiger Salamander	Yes	0	6	28 May 2002
Bufo punctatus	Red-Spotted Toad	Yes	1	8	24 May 2003
Bufo woodhousii	Woodhouse's Toad	Yes	1	14	25 May 2002
Hyla arenicolor	Canyon Treefrog	Yes	2	8	07 June 2002
[2]***Rana pipiens***	Northern Leopard Frog	Yes	0	0	----
Spea bombifrons	Plains Spadefoot	No	0	1	05 Aug. 2002
Spea multiplicata	New Mexico Spadefoot	Yes	0	8	26 July 2003
		REPTILES -- Lizards			
Cnemidophorus tigris	Western Whiptail	No	1	1	21 May 2002
Cnemidophorus velox	Plateau Striped Whiptail	Yes	20	n/a	05 June 2002
Crotaphytus collaris	Eastern Collared Lizard	Yes	3	3	12 Aug. 2002
Eumeces multivirgatus	Many-lined Skink	Yes	2	1	08 July 2002
[2]***Holbrookia maculata***	Lesser Earless Lizard	Yes	0	0	----
Phrynosoma hernandesi	Mtn. Short-horned Lizard	Yes	3	2	05 Aug. 2002
Sceloporus graciosus	Sagebrush Lizard	Yes	9	n/a	27 May 2003
Sceloporus undulatus	Eastern Fence Lizard	Yes	34	n/a	22 May 2002
Urosaurus ornatus	Tree Lizard	Yes	6	1	08 June 2002
Uta stansburiana	Side-blotched Lizard	Yes	10	n/a	08 June 2002
		REPTILES -- Snakes			
Crotalus viridis	Prairie Rattlesnake	Yes	3	0	02 June 2002
Masticophis taeniatus	Striped Whipsnake	No	0	1	17 July 2003
Pituophis catenifer	Gopher Snake	Yes	1	1	19 May 2003
Thamnophis elegans	W. Terrestrial Garter Snake	Yes	3	6	05 Aug. 2002

[1]Collins and Taggart (2002) used for species names
[2]Species not documented during this inventory in 2002-03

Figure 1. Species accumulation curve for herpetofauna documented at Canyon de Chelly National Monument during 2002 and 2003 using all survey types.

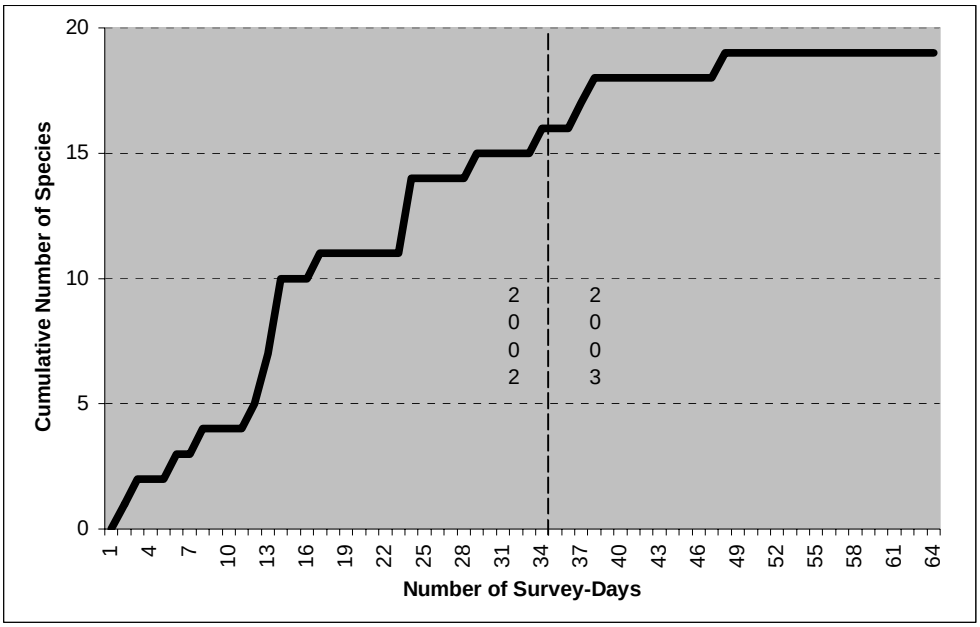


Figure 2. Southeast quarter of Chinle quad. with Canyon de Chelly National Monument showing the locations of each TCS plot and the species documented by all survey methods during 2002 and 2003.

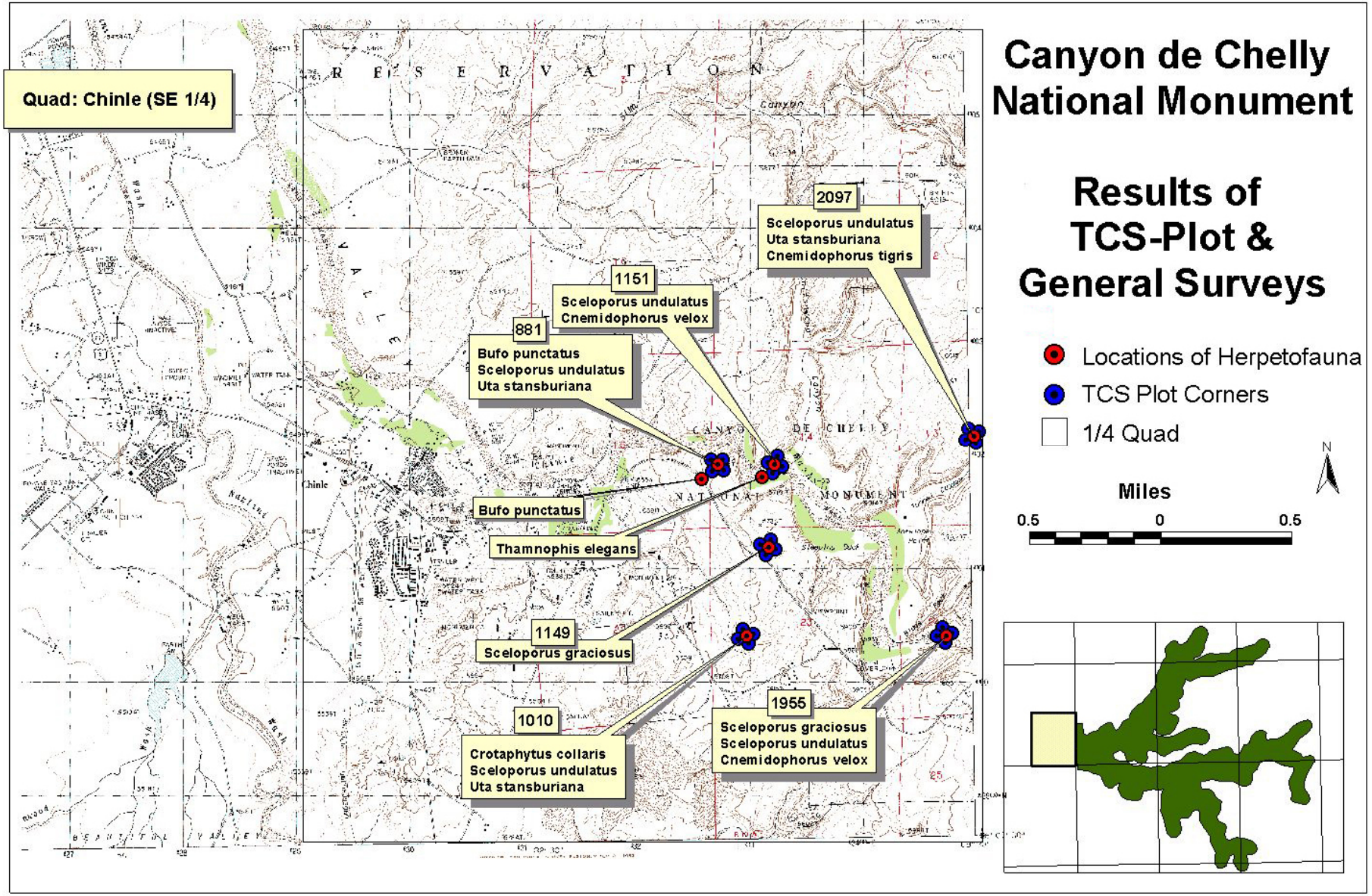


Figure 3. Southwest quarter of Del Muerto quad. with Canyon de Chelly National Monument showing the locations of each TCS plot and the species documented by all survey methods during 2002 and 2003.

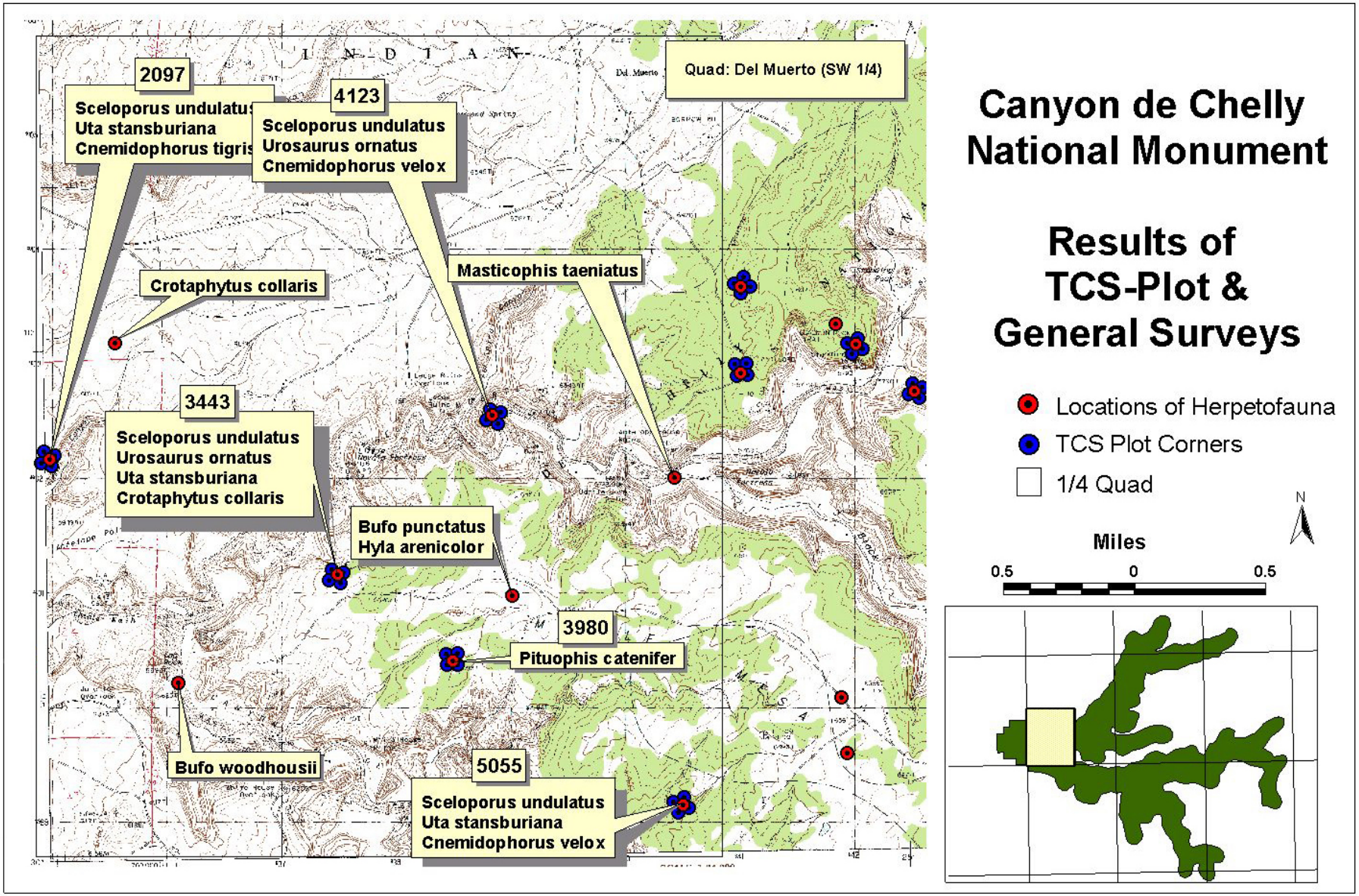


Figure 4. Southeast quarter of Del Muerto quad. with Canyon de Chelly National Monument showing the locations of each TCS plot and the species documented by all survey methods during 2002 and 2003.

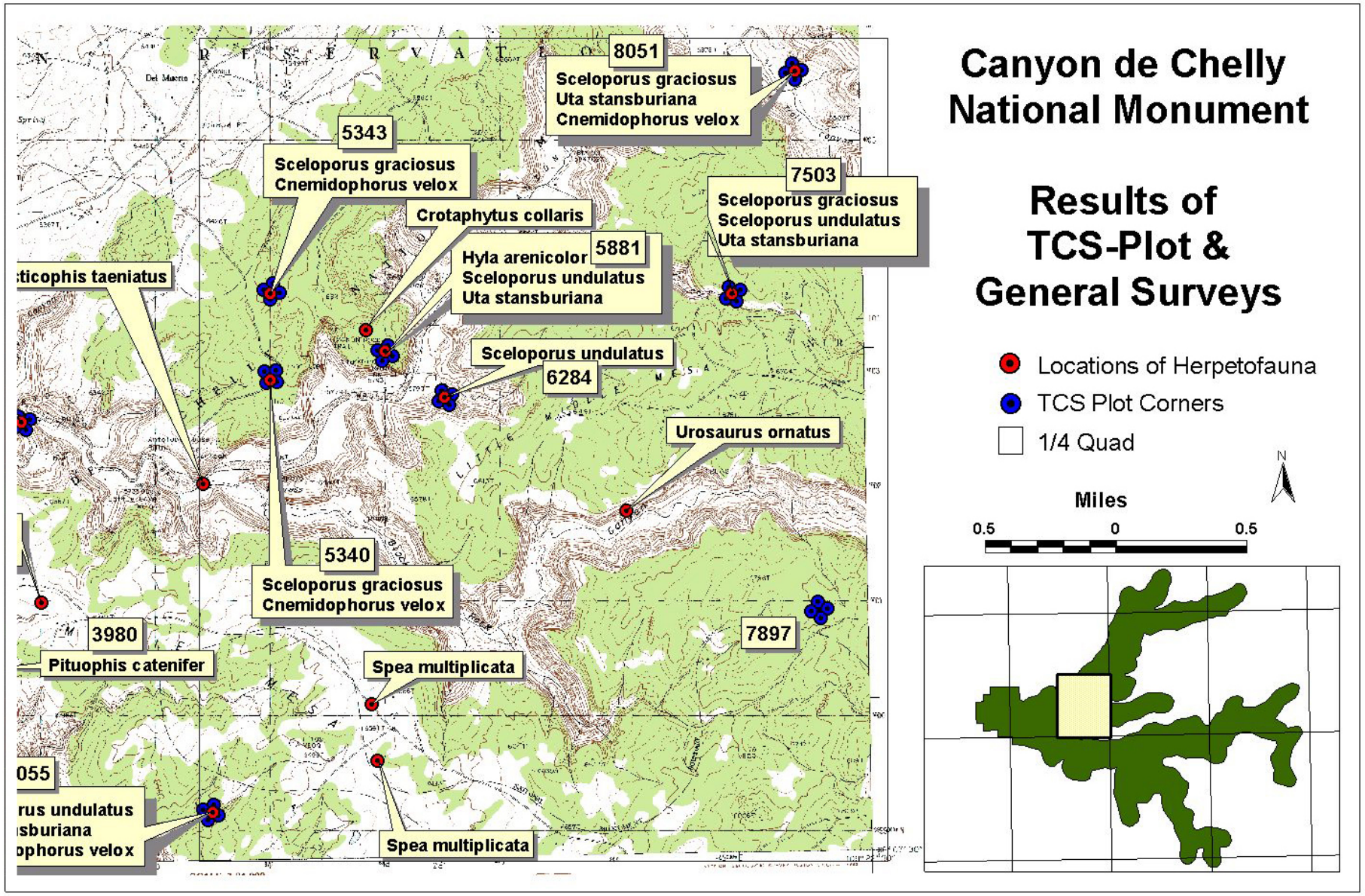


Figure 5. Northeast quarter of Del Muerto quad. with Canyon de Chelly National Monument showing the locations of each TCS plot and the species documented by all survey methods during 2002 and 2003.

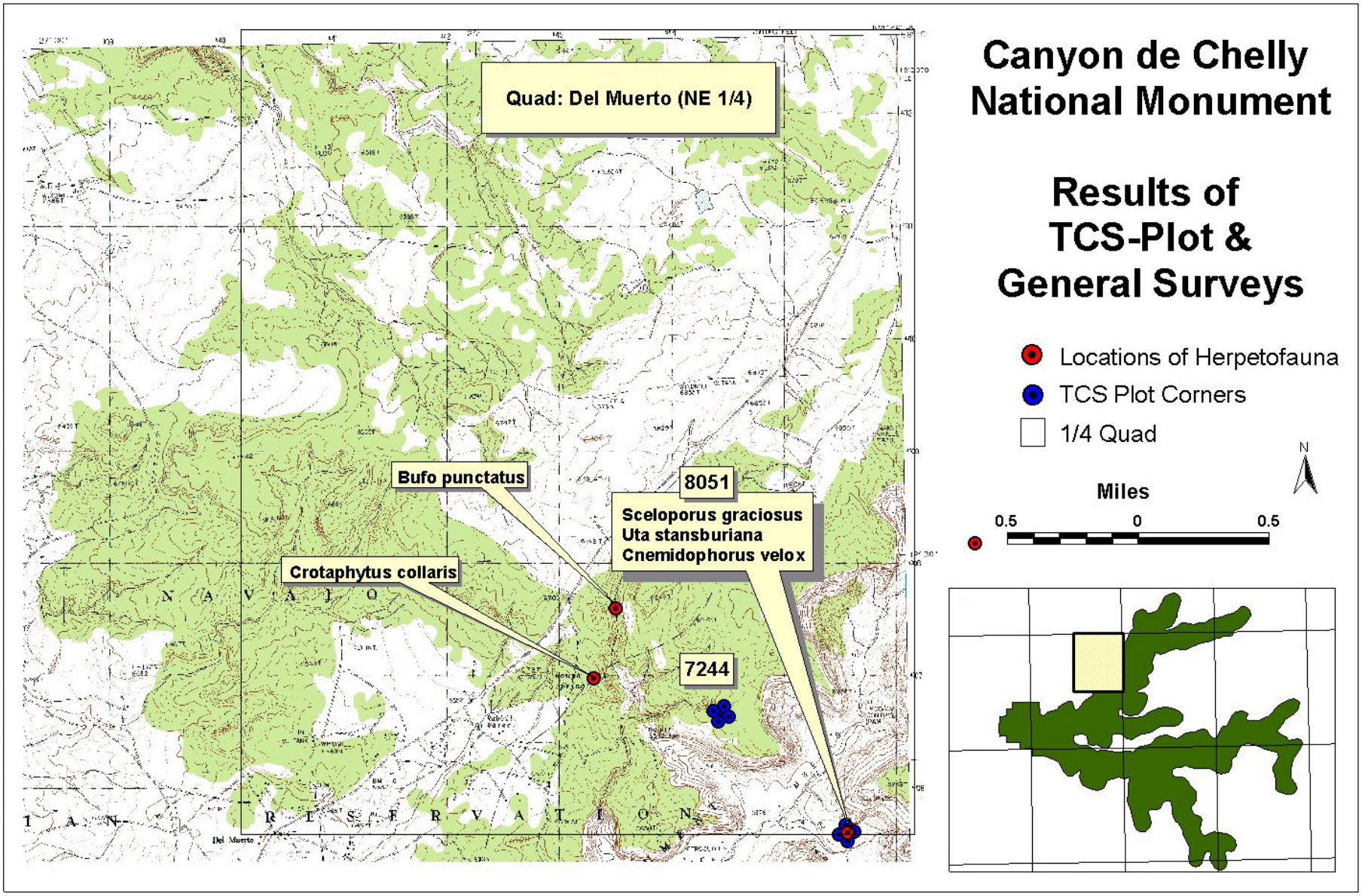


Figure 6. Southwest quarter of Mummy Cave Ruins quad. with Canyon de Chelly National Monument showing the locations of each TCS plot and the species documented by all survey methods during 2002 and 2003.

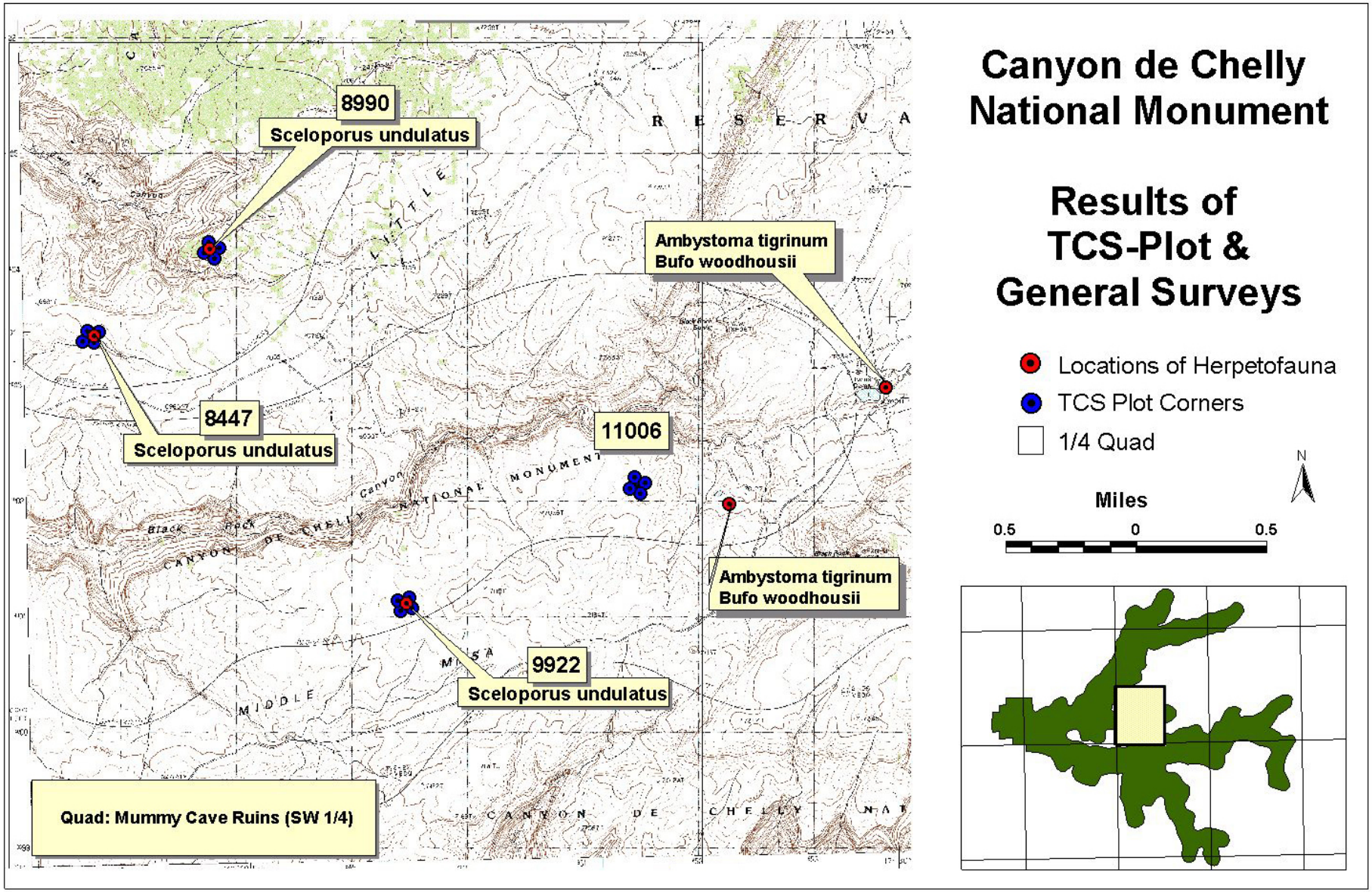


Figure 7. Northwest quarter of Mummy Cave Ruins quad. with Canyon de Chelly National Monument showing the locations of each TCS plot and the species documented by all survey methods during 2002 and 2003.

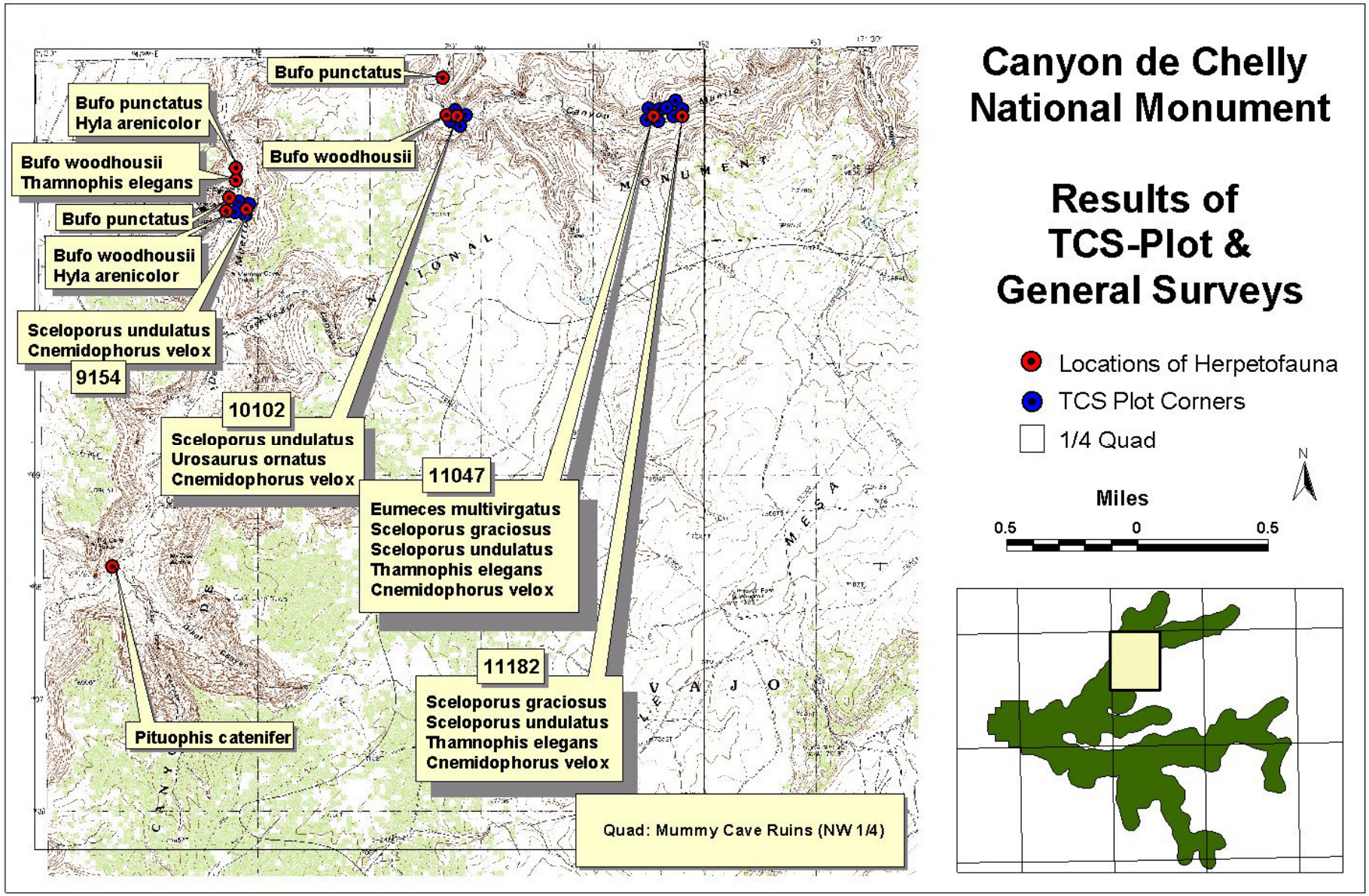


Figure 8. Southwest quarter of Red Cornfield Mesa quad. with Canyon de Chelly National Monument showing the locations of each TCS plot and the species documented by all survey methods during 2002 and 2003.

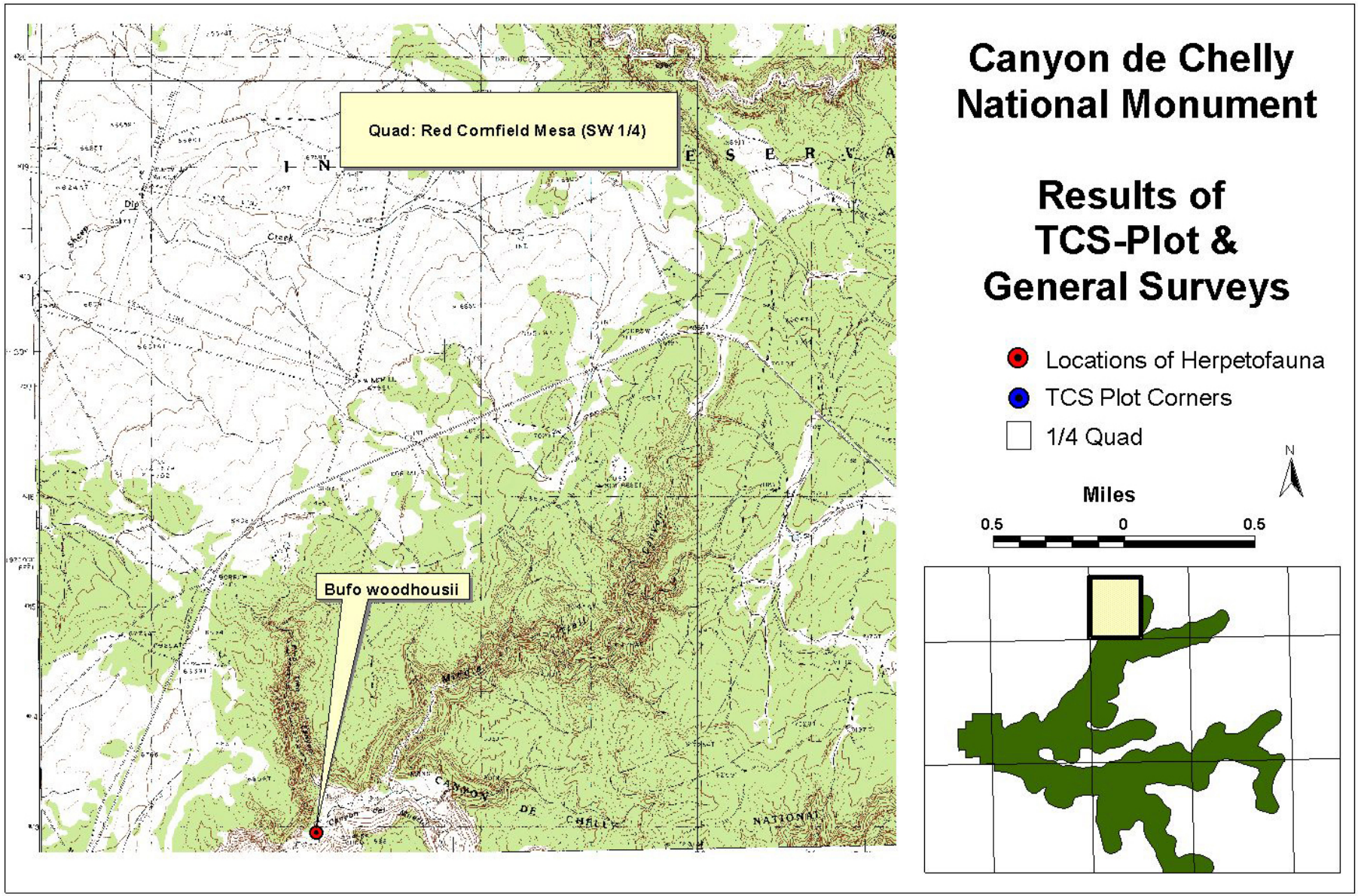


Figure 9. Southwest quarter of Tsaile quad. with Canyon de Chelly National Monument showing the locations of each TCS plot and the species documented by all survey methods during 2002 and 2003.

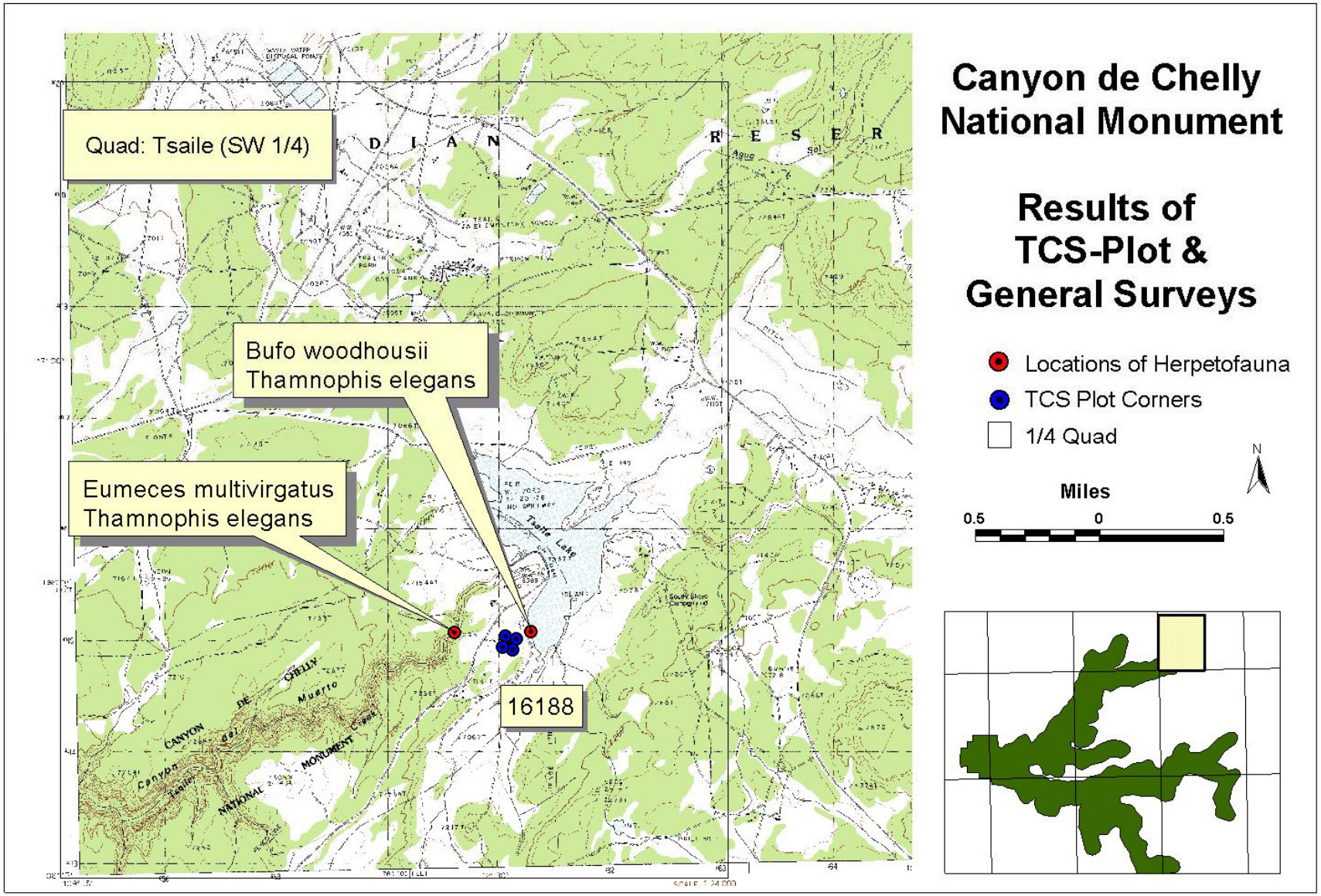


Figure 10. Northwest quarter of Three Turkey Canyon quad. with Canyon de Chelly National Monument showing the locations of each TCS plot and the species documented by all survey methods during 2002 and 2003.

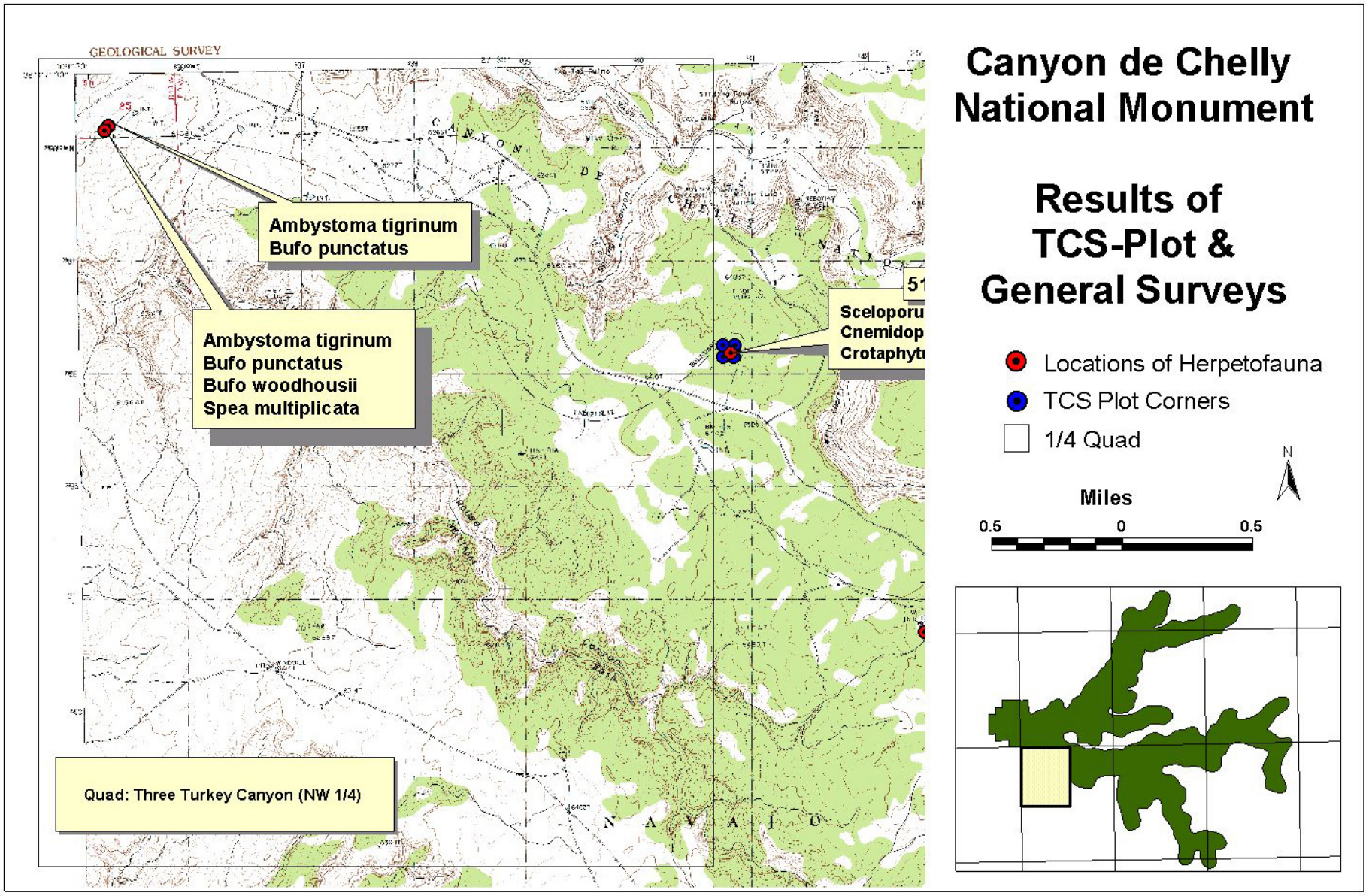


Figure 11. Northeast quarter of Three Turkey Canyon quad. with Canyon de Chelly National Monument showing the locations of each TCS plot and the species documented by all survey methods during 2002 and 2003.

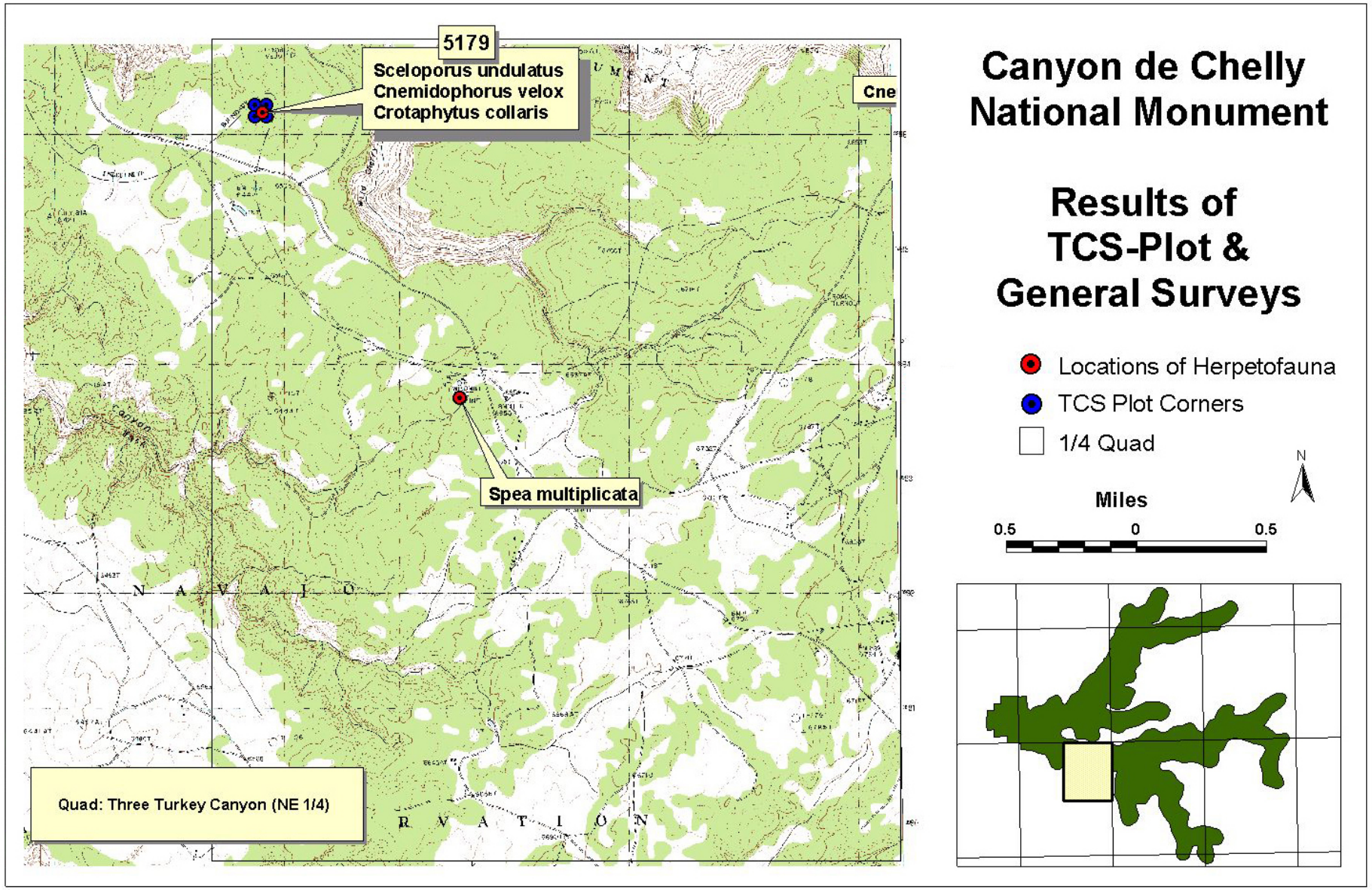


Figure 12. Northwest quarter of Spider Rock quad. with Canyon de Chelly National Monument showing the locations of each TCS plot and the species documented by all survey methods during 2002 and 2003.

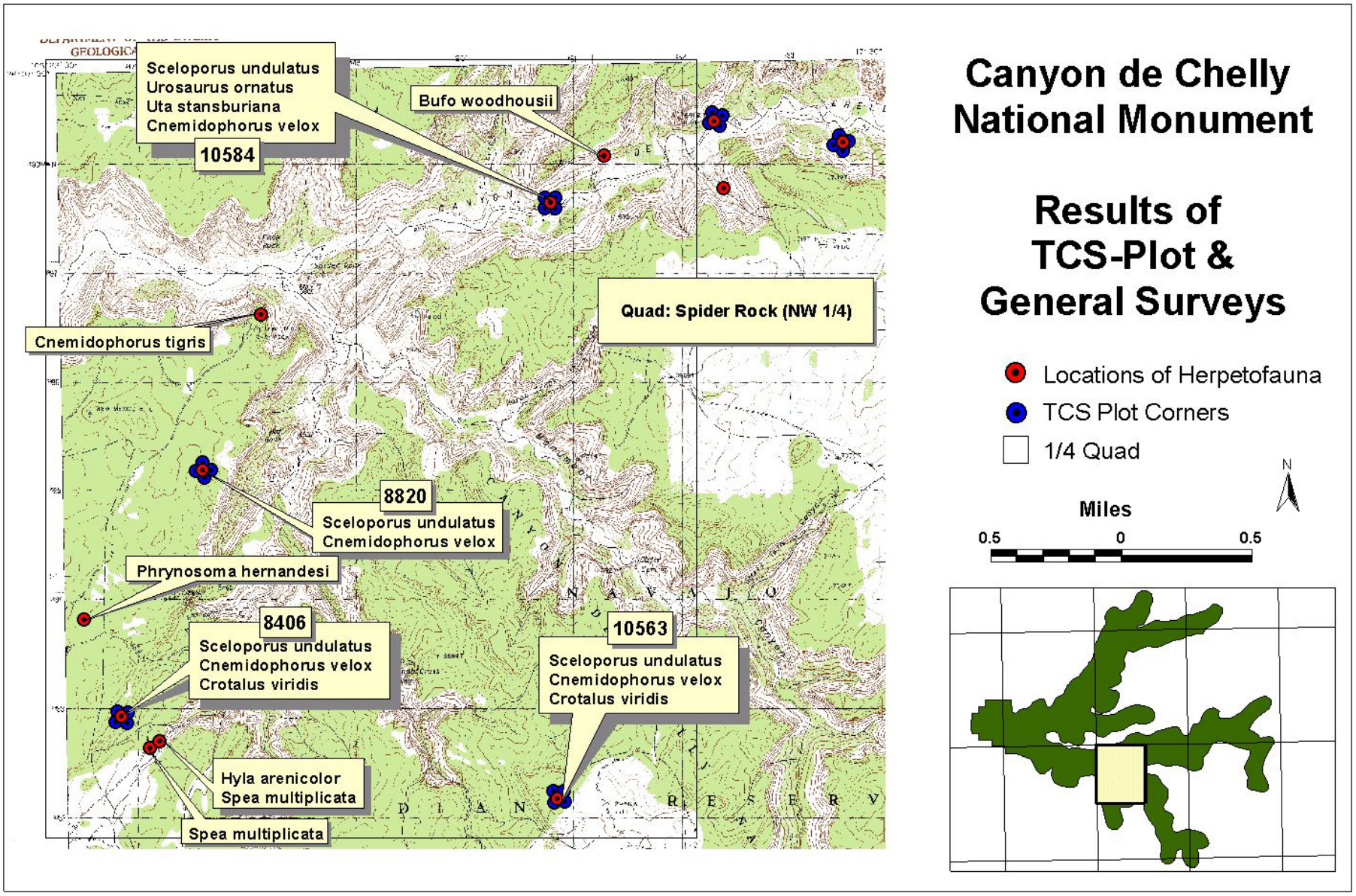


Figure 13. Northeast quarter of Spider Rock quad. with Canyon de Chelly National Monument showing the locations of each TCS plot and the species documented by all survey methods during 2002 and 2003.

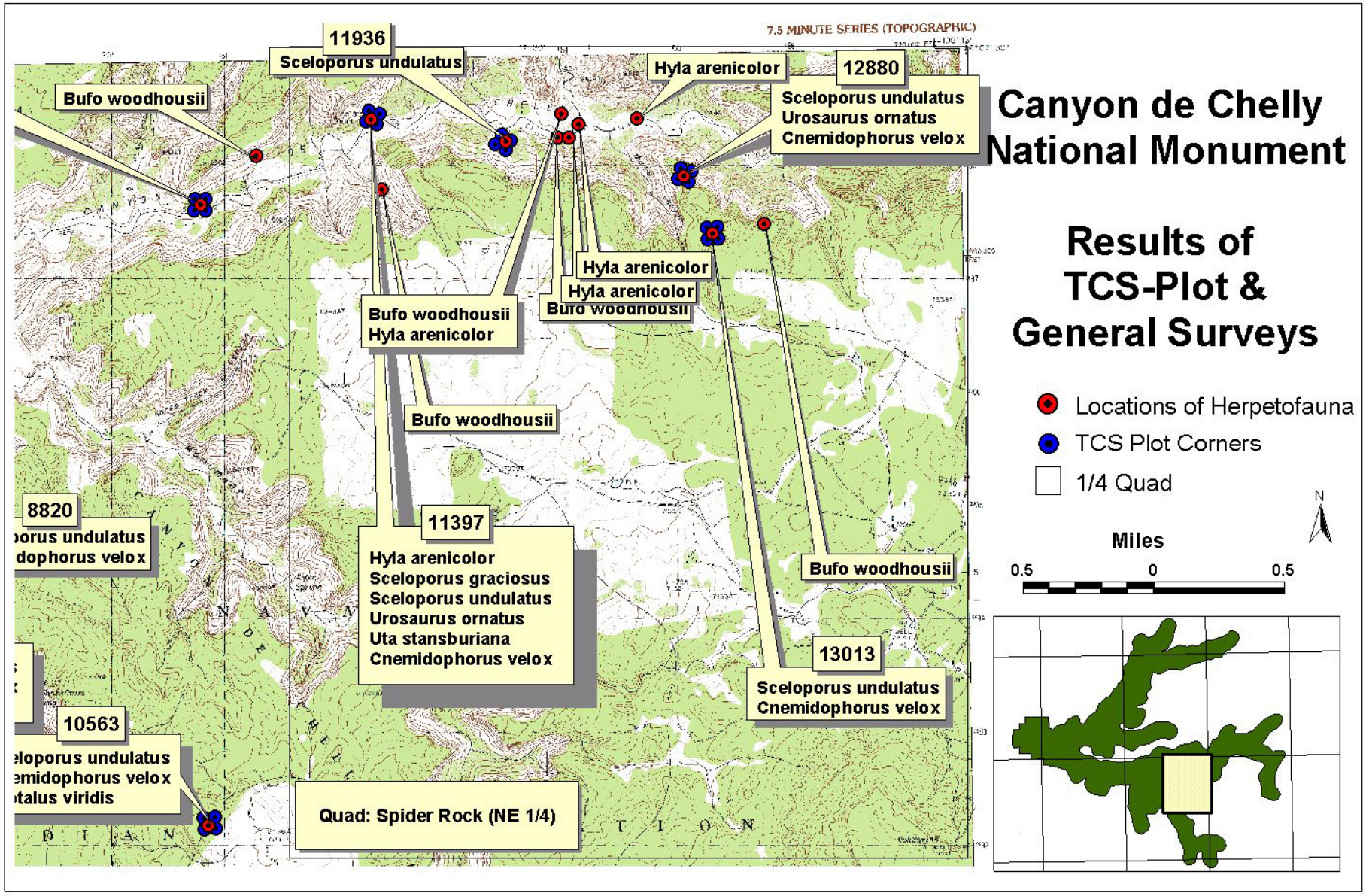


Figure 14. Northeast quarter of White Clay quad. with Canyon de Chelly National Monument showing the locations of each TCS plot and the species documented by all survey methods during 2002 and 2003.

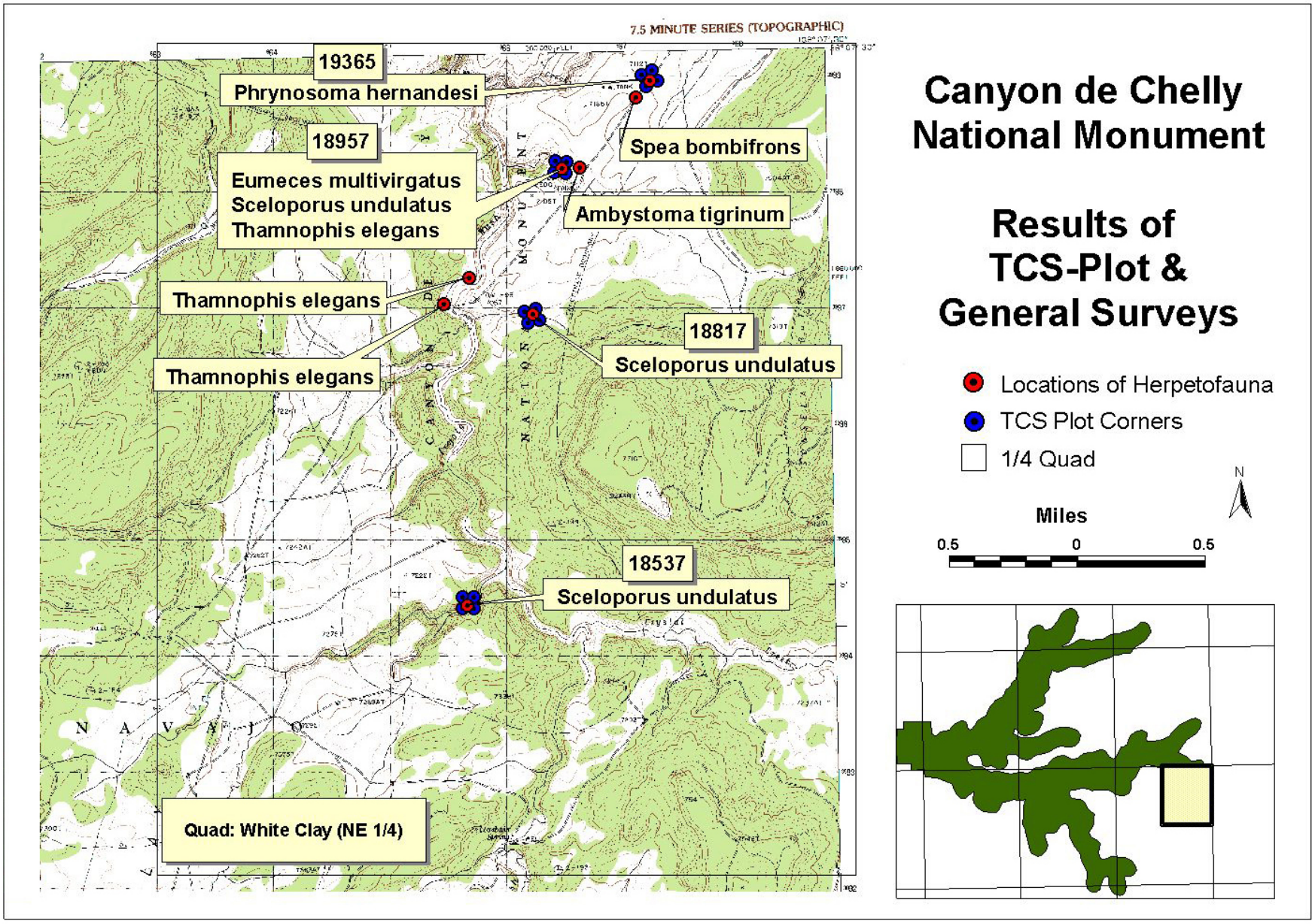


Figure 15. Southeast quarter of Lower Wheatfields quad. with Canyon de Chelly National Monument showing the locations of each TCS plot and the species documented by all survey methods during 2002 and 2003.

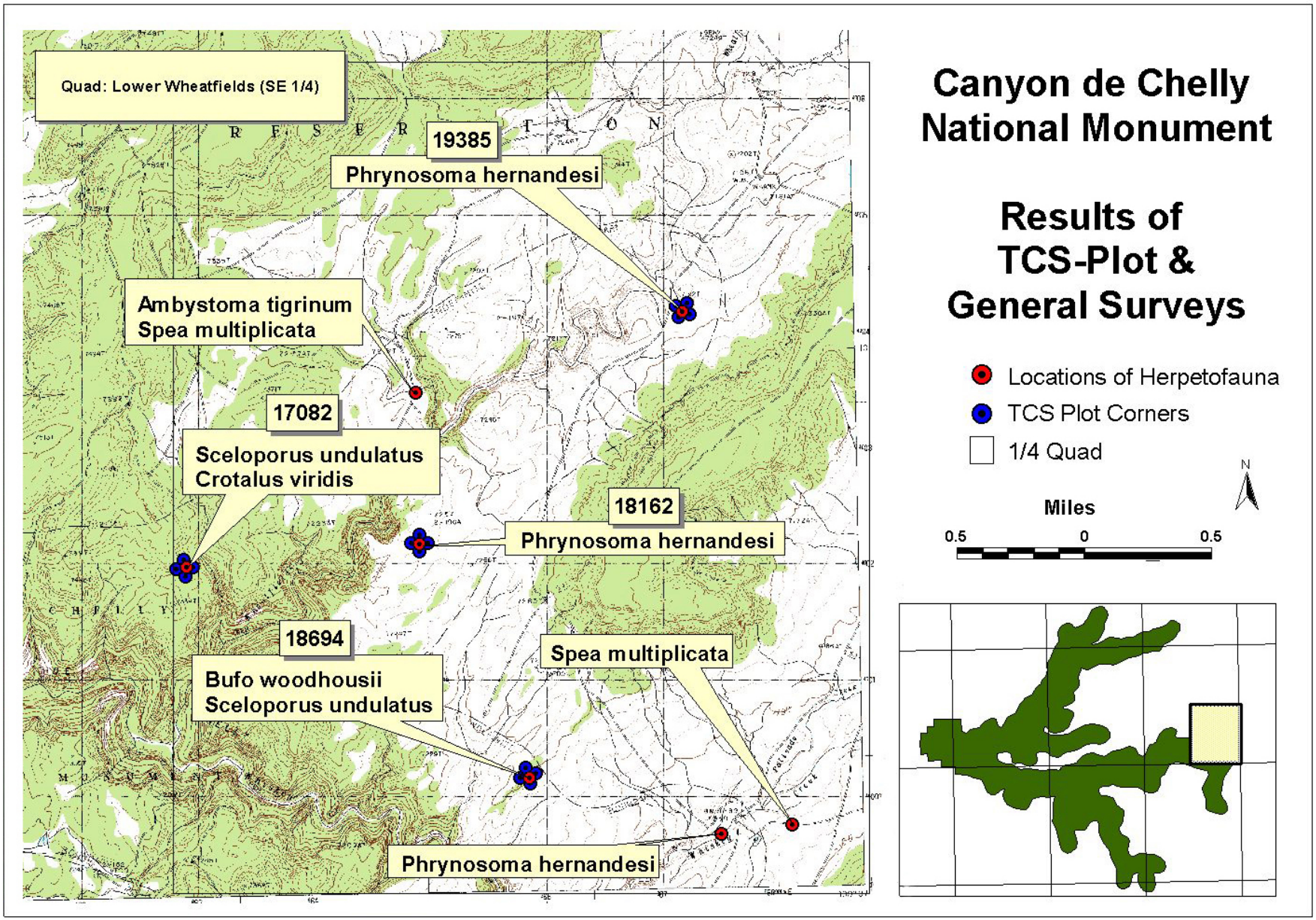


Figure 16. Northeast quarter of White Rock Wash quad. with Canyon de Chelly National Monument showing the locations of each TCS plot and the species documented by all survey methods during 2002 and 2003.

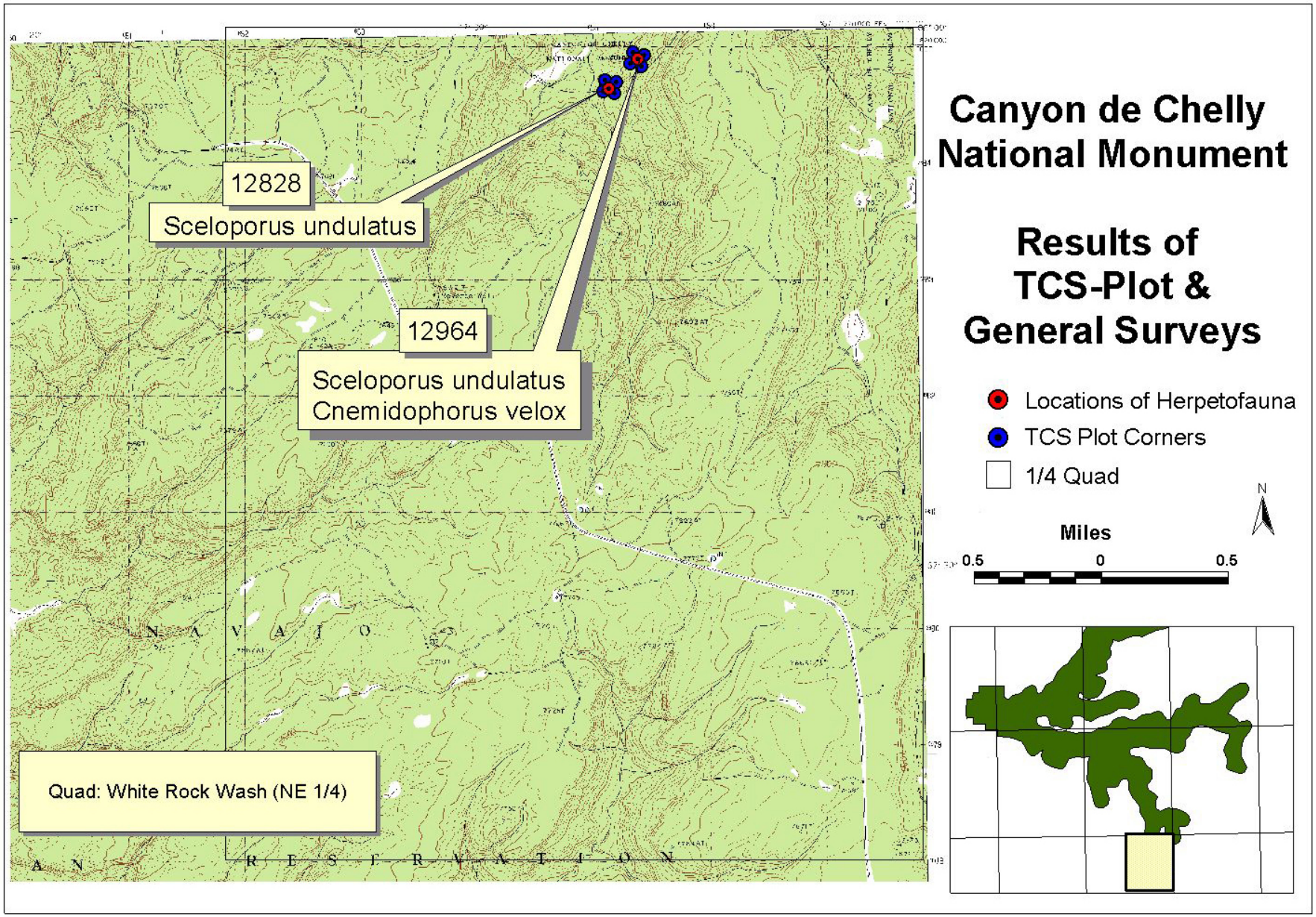


Figure 17. Eastern Tiger Salamander (*Ambystoma tigrinum*) -- larva



Photo: AmbTigCACH7-28-03

Figure18. Eastern Tiger Salamander (*Ambystoma tigrinum*) – adult



Photo: AmbTigCACH8-5-02d

Figure 19. Red-spotted Toad (*Bufo punctatus*) -- juvenile



Photo: BufPunCACH8-13-03a

Figure 20. Red-spotted Toad (*Bufo punctatus*) – adult



Photo: BufPunCACH8-21-03c

Figure 21. Woodhouse's Toad (*Bufo Woodhousii*) -- larva

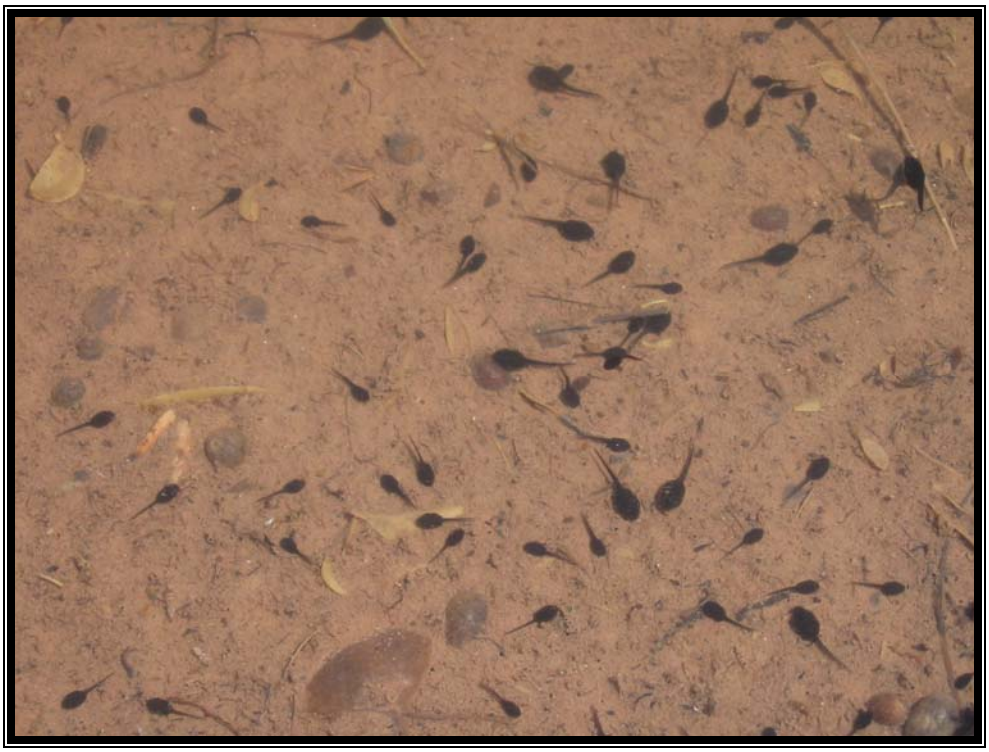


Photo: BufWooCACH5-30-03b

Figure 22. Woodhouse's Toad (*Bufo Woodhousii*) – adult



Photo: BufWooCACH7-10-03a

Figure 23. Canyon Treefrog (*Hyla arenicolor*) – transforming larvae



Photo: HylAreCACH7-21-03b

Figure 24. Canyon Treefrog (*Hyla arenicolor*) – adult



Photo: HylAreCACH8-12-03d

Figure 25. New Mexico Spadefoot (*Spea multiplicata*) – transforming larvae



Photo: SpeMulCACH8-26-03b

Figure 26. New Mexico Spadefoot (*Spea multiplicata*) – adult



Photo: SpeMulCACH7-26-03c

Figure 27. Plains Spadefoot (*Spea bombifrons*) – adult



Photo: SpeBomCACH8-5-02e

Figure 28. Western Whiptail (*Cnemidophorus tigris*) – adult



Photo: CneTig2097CACH7-18-03a

Figure 29. Plateau Striped Whiptail (*Cnemidophorus velox*) – adult



Photo: CneVel10584CACH7-11-02c

Figure 30. Common Collared Lizard (*Crotaphytus collaris*) – juvenile



Photo: CroCol5179CACH8-13-02c

Figure 31. Many-lined Skink (*Eumeces multivirgatus*) -- adult



Photo: EumMul11047CACH8-26-03

Figure 32. Mountain Short-horned Lizard (*Phrynosoma hernandesi*)



Photo: PhrHer19385CACH8-5-02b

Figure 33. Sagebrush Lizard (*Sceloporus graciosus*) – adult



Photo: SceGra1955CACH8-21-03c

Figure 34. Eastern Fence Lizard (*Sceloporus undulatus*) – adult



Photo: SceUnd2097CACH5-30-03b

Figure 35. Tree Lizard (*Urosaurus ornatus*) – adult



Photo: UroOrn4123CACH7-23-03b

Figure 36. Side-blotched Lizard (*Uta stansburiana*) - adult



Photo: UtaSta881CACH8-21-03

Figure 37. Prairie Rattlesnake (*Crotalus viridis*) – adult



Photo: CroVir17082CACH8-12-02b

Figure 38. Striped Whipsnake (*Masticophus taeniatus*) – adult



Photo: MasTaeCACH7-17-03e

Figure 39. Gopher Snake (*Pituophis catenifer*) – adult



Photo: PitCatCACH7-22-03c

Figure 40. Western Terrestrial Garter Snake (*Thamnophis elegans*)



Photo: ThaEleCACH8-12-02h

Figure 41. Sandstone Bedrock Habitat at Plot 881



Photo: CACH881hab2

Figure 42. Sandstone Bedrock / Pinyon-Juniper Habitat at Plot 3443



Photo: CACH3443hab2

Figure 43. Grassland Habitat at Plot 1010



Photo: CACH1010hab1

Figure 44. Grassland Habitat at Plot 8051



Photo: CACH8051hab1

Figure 45. Desert-scrub Habitat at Plot 18162



Photo: CACH18162hab1

Figure 46. Desert-scrub / Pinyon-Juniper Habitat at Plot 18694



Photo: CACH18694hab2

Figure 47. Pinyon-Juniper Habitat at Plot 7897



Photo: CACH7897hab1

Figure 48. Gambel Oak / Pinyon-Juniper Habitat at Plot 11936



Photo: CACH11936hab1

Figure 49. Pinyon-Juniper / Grassland Habitat at Plot 5340



Photo: CACH5340hab1

Figure 50. Riparian Habitat at Plot 11182



Photo: CACH11182hab1

Figure 51. Pinyon-Juniper / Ponderosa Pine Habitat at Plot 17082



Photo: CACH17082hab1

Figure 52. Ponderosa Pine Habitat at Plot 12828



Photo: CACH12828hab1

Appendix A. Locations (UTM Zone 12) and year of survey for 46 plots for Time-Constrained Surveys of amphibians and reptiles at Canyon de Chelly National Monument, and the associated corner points (A-D), including predicted and actual habitat type for each plot.

ID	Plot Number	Easting	Northing	Year	Predicted Habitat	Actual Habitat
1	1010	632975	4000409	2003	Grassland	Grassland
2	1010 A	632943	4000469			
3	1010 B	633033	4000426			
4	1010 C	632990	4000336			
5	1010 D	632900	4000379			
6	10102	649792	4012206	2003	Riparian	Riparian
7	10102 A	649774	4012257			
8	10102 B	649865	4012215			
9	10102 C	649820	4012125			
10	10102 D	649730	4012168			
11	10563	650860	3992174	2002	Pinyon-Juniper	Pinyon-Juniper
12	10563 A	650928	3992148			
13	10563 B	650828	3992139			
14	10563 C	650820	3992239			
15	10563 D	650919	3992246			
16	10584	650796	3997648	2002	Riparian	Riparian
17	10584 A	650841	3997596			
18	10584 B	650741	3997597			
19	10584 C	650742	3997697			
20	10584 D	650841	3997695			
21	11006	651487	4002116	2003	Pinyon-Juniper	Desert-shrub / Pinyon-Juniper
22	11006 A	651456	4002197			
23	11006 B	651548	4002154			
24	11006 C	651503	4002064			
25	11006 D	651413	4002106			
26	11047	651549	4012206	2003	Riparian	Riparian
27	11047 A	651502	4012273			
28	11047 B	651600	4012264			
29	11047 C	651591	4012164			
30	11047 D	651491	4012173			
31	11182	651800	4012206	2003	Riparian	Riparian

32	11182 A	651741	4012344			
33	11182 B	651804	4012268			
34	11182 C	651728	4012203			
35	11182 D	651664	4012280			
36	11397	652302	3998401	2002	Agriculture	Riparian
37	11397 A	652352	3998355			
38	11397 B	652255	3998382			
39	11397 C	652283	3998479			
40	11397 D	652379	3998452			
41	1149	633170	4001185	2003	Grassland	Desert-shrub
42	1149 A	633184	4001256			
43	1149 B	633234	4001169			
44	1149 C	633145	4001121			
45	1149 D	633096	4001207			
46	1151	633226	4001915	2003	Desert Scrub	Riparian
47	1151 A	633245	4001985			
48	1151 B	633286	4001894			
49	1151 C	633203	4001838			
50	1151 D	633162	4001929			
51	11936	653489	3998207	2002	Pinyon-Juniper	Gambel Oak / Pinyon-Juniper
52	11936 A	653453	3998263			
53	11936 B	653537	3998213			
54	11936 C	653487	3998127			
55	11936 D	653400	3998178			
56	12828	655127	3984644	2002	Pinyon-Juniper	Ponderosa Pine
57	12828 A	655176	3984599			
58	12828 B	655079	3984616			
59	12828 C	655094	3984716			
60	12828 D	655192	3984697			
61	12880	655063	3997899	2002	Pinyon-Juniper	Pinyon-Juniper
62	12880 A	655131	3997943			
63	12880 B	655106	3997847			
64	12880 C	655009	3997874			
65	12880 D	655034	3997970			
66	12964	655378	3984895	2002	Pinyon-Juniper	Pinyon-Juniper / Ponderosa Pine
67	12964 A	655408	3984831			
68	12964 B	655310	3984857			

69	12964 C	655336	3984953			
70	12964 D	655435	3984927			
71	13013	655314	3997397	2002	Pinyon-Juniper	Pinyon-Juniper
72	13013 A	655261	3997443			
73	13013 B	655361	3997451			
74	13013 C	655367	3997353			
75	13013 D	655269	3997344			
76	16188	661087	4014967	2003	Pinyon-Juniper	Desert-shrub
77	16188 A	661060	4015032			
78	16188 B	661157	4015006			
79	16188 C	661129	4014910			
80	16188 D	661034	4014937			
81	17082	662908	4001963	2002	Pinyon-Juniper	Pinyon-Juniper / Ponderosa Pine
82	17082 A	662885	4002030			
83	17082 B	662960	4001965			
84	17082 C	662895	4001889			
85	17082 D	662819	4001953			
86	18162	664913	4002165	2002	Ponderosa Pine	Desert-shrub
87	18162 A	664909	4002245			
88	18162 B	664979	4002174			
89	18162 C	664907	4002104			
90	18162 D	664837	4002175			
91	18537	665669	3994433	2002	Pinyon-Juniper	Pinyon-Juniper
92	18537 A	665730	3994409			
93	18537 B	665628	3994409			
94	18537 C	665628	3994509			
95	18537 D	665729	3994508			
96	18694	665856	4000158	2002	Ponderosa Pine	Desert-shrub / Pinyon-Juniper
97	18694 A	665915	4000193			
98	18694 B	665864	4000107			
99	18694 C	665777	4000158			
100	18694 D	665828	4000244			
101	18817	666232	3996942	2002	Ponderosa Pine	Desert-shrub / Pinyon-Juniper
102	18817 A	666165	3996963			
103	18817 B	666260	3996988			
104	18817 C	666289	3996891			
105	18817 D	666191	3996866			

106	18957	666483	3998197	2002	Ponderosa Pine	Desert-shrub / Pinyon-Juniper
107	18957 A	666525	3998251			
108	18957 B	666516	3998153			
109	18957 C	666416	3998162			
110	18957 D	666425	3998261			
111	19365	667236	3998950	2002	Pinyon-Juniper	Desert-shrub
112	19365 A	667301	3998948			
113	19365 B	667208	3998906			
114	19365 C	667167	3998996			
115	19365 D	667257	3999038			
116	19385	667172	4004173	2002	Ponderosa Pine	Desert-shrub
117	19385 A	667113	4004221			
118	19385 B	667211	4004246			
119	19385 C	667238	4004150			
120	19385 D	667140	4004125			
121	1955	634732	4000409	2003	Desert Scrub	Riparian
122	1955 A	634706	4000486			
123	1955 B	634788	4000429			
124	1955 C	634730	4000347			
125	1955 D	634648	4000405			
126	2097	634983	4002166	2003	Grassland	Bedrock / Pinyon-Juniper
127	2097 A	634927	4002233			
128	2097 B	635023	4002206			
129	2097 C	634996	4002110			
130	2097 D	634902	4002136			
131	3443	637493	4001162	2003	Grassland	Bedrock / Pinyon-Juniper
132	3443 A	637446	4001209			
133	3443 B	637542	4001182			
134	3443 C	637516	4001087			
135	3443 D	637420	4001113			
136	3980	638497	4000409	2003	Grassland	Pinyon-Juniper / Grassland
137	3980 A	638436	4000472			
138	3980 B	638537	4000480			
139	3980 C	638543	4000381			
140	3980 D	638443	4000373			
141	4123	638843	4002551	2003	Grassland	Disturbed Grassland
142	4123 A	638820	4002605			

143	4123 B	638917	4002578			
144	4123 C	638888	4002482			
145	4123 D	638792	4002509			
146	5055	640505	3999154	2003	Desert Scrub	Riparian
147	5055 A	640516	3999222			
148	5055 B	640558	3999131			
149	5055 C	640467	3999090			
150	5055 D	640424	3999181			
151	5179	640820	3996190	2002	Pinyon-Juniper	Pinyon-Juniper / Desert-shrub
152	5179 A	640850	3996254			
153	5179 B	640848	3996154			
154	5179 C	640748	3996155			
155	5179 D	640751	3996255			
156	5340	641007	4002919	2003	Desert Scrub	Pinyon-Juniper / Grassland
157	5340 A	640962	4002997			
158	5340 B	641063	4003005			
159	5340 C	641070	4002905			
160	5340 D	640972	4002898			
161	5343	641007	4003672	2003	Desert Scrub	Pinyon-Juniper
162	5343 A	641036	4003757			
163	5343 B	641091	4003675			
164	5343 C	641009	4003619			
165	5343 D	640952	4003700			
166	5881	642011	4003170	2003	Desert Scrub	Pinyon-Juniper
167	5881 A	642032	4003221			
168	5881 B	642074	4003130			
169	5881 C	641983	4003089			
170	5881 D	641940	4003179			
171	6284	642522	4002767	2003	Pinyon-Juniper	Pinyon-Juniper / Desert-shrub
172	6284 A	642504	4002828			
173	6284 B	642595	4002797			
174	6284 C	642569	4002703			
175	6284 D	642473	4002738			
176	7244	644459	4006633	2003	Pinyon-Juniper	Pinyon-Juniper
177	7244 A	644472	4006725			
178	7244 B	644515	4006634			
179	7244 C	644423	4006593			

180	7244 D	644381	4006685			
181	7503	645023	4003672	2003	Pinyon-Juniper	Pinyon-Juniper / Bedrock
182	7503 A	645002	4003726			
183	7503 B	645098	4003699			
184	7503 C	645069	4003603			
185	7503 D	644976	4003630			
186	7897	645776	4000911	2003	Pinyon-Juniper	Pinyon-Juniper
187	7897 A	645774	4000983			
188	7897 B	645856	4000925			
189	7897 C	645799	4000844			
190	7897 D	645717	4000902			
191	8051	645572	4005602	2003	Grassland	Grassland
192	8051 A	645551	4005670			
193	8051 B	645635	4005612			
194	8051 C	645576	4005529			
195	8051 D	645494	4005587			
196	8406	646844	3992927	2002	Pinyon-Juniper	Pinyon-Juniper
197	8406 A	646798	3992872			
198	8406 B	646897	3992863			
199	8406 C	646907	3992962			
200	8406 D	646808	3992972			
201	8447	646780	4003421	2003	Pinyon-Juniper	Pinyon-Juniper
202	8447 A	646826	4003453			
203	8447 B	646782	4003363			
204	8447 C	646683	4003372			
205	8447 D	646726	4003462			
206	881	632724	4001915	2003	Grassland	Sandstone Bedrock
207	881 A	632666	4001951			
208	881 B	632765	4001958			
209	881 C	632772	4001859			
210	881 D	632673	4001851			
211	8820	647597	3995186	2002	Pinyon-Juniper	Pinyon-Juniper / Bedrock
212	8820 A	647609	3995116			
213	8820 B	647675	3995192			
214	8820 C	647597	3995257			
215	8820 D	647532	3995181			
216	8990	647784	4004174	2003	Pinyon-Juniper	Pinyon-Juniper

217	8990 A	647776	4004229			
218	8990 B	647867	4004185			
219	8990 C	647822	4004096			
220	8990 D	647735	4004138			
221	9154	647907	4011372	2003	Pinyon-Juniper	Pinyon-Juniper
222	9154 A	647833	4011443			
223	9154 B	647929	4011415			
224	9154 C	647901	4011320			
225	9154 D	647804	4011346			
226	9922	649480	4001113	2003	Pinyon-Juniper	Pinyon-Juniper
227	9922 A	649508	4001164			
228	9922 B	649533	4001068			
229	9922 C	649435	4001043			
230	9922 D	649411	4001139			
231	ORIGINAL 1149	633226	4001413	2003		
232	ORIGINAL 4123	638748	4002417	2003		
233	ORIGINAL 6284	642764	4002668	2003		
234	ORIGINAL 8051	646027	4005680	2003		
235	ORIGINAL 9154	648035	4011453	2003		

Appendix B. Summary of documentary digital photographs from Canyon de Chelly National Monument during amphibian and reptile inventory in 2002-3, including photo file name, date taken, and location in UTM zone 12.

ID	Species	Common Name	Photo (File) Name	Photo Date	Easting	Northing	Remarks
1	*Ambystoma tigrinum*	Eastern Tiger Salamander	AmbTigCACH5-28-02a	28 MAY 2002	666700	3997997	Larvae;TL-240.9mm;Whiskey Reserv.;collected
2	*Ambystoma tigrinum*	Eastern Tiger Salamander	AmbTigCACH5-28-02b	28 MAY 2002	666700	3997997	Larvae;TL-240.9mm;Whiskey Reserv.;collected
3	*Ambystoma tigrinum*	Eastern Tiger Salamander	AmbTigCACH7-10-03a	10 JUL 2003	653625	4002978	Larvae; TL-approx.-80mm; at Twin Dams
4	*Ambystoma tigrinum*	Eastern Tiger Salamander	AmbTigCACH7-10-03b	10 JUL 2003	653625	4002978	Larvae; TL-approx.-80mm; at Twin Dams
5	*Ambystoma tigrinum*	Eastern Tiger Salamander	AmbTigCACH7-10-03c	10 JUL 2003	652274	4001972	Larvae; TL-approx.-100mm; near Twin Dams
6	*Ambystoma tigrinum*	Eastern Tiger Salamander	AmbTigCACH7-28-03	28 JUL 2003	664882	4003478	Larvae; TL-approx.-120mm
7	*Ambystoma tigrinum*	Eastern Tiger Salamander	AmbTigCACH8-13-03a	13 AUG 2003	653625	4002978	Adult; TL-approx.-130mm; at Twin Dams
8	*Ambystoma tigrinum*	Eastern Tiger Salamander	AmbTigCACH8-13-03b	13 AUG 2003	653625	4002978	Adult; TL-approx.-130mm; at Twin Dams
9	*Ambystoma tigrinum*	Eastern Tiger Salamander	AmbTigCACH8-13-03c	13 AUG 2003	653625	4002978	Adult; TL-approx.-130mm; at Twin Dams
10	*Ambystoma tigrinum*	Eastern Tiger Salamander	AmbTigCACH8-13-03d	13 AUG 2003	653625	4002978	Adult; TL-approx.-130mm; at Twin Dams
11	*Ambystoma tigrinum*	Eastern Tiger Salamander	AmbTigCACH8-19-03a	19 AUG 2003	635263	3998157	Adult; 2-3 adults, 10-12 larvae found here
12	*Ambystoma tigrinum*	Eastern Tiger Salamander	AmbTigCACH8-19-03b	19 AUG 2003	635263	3998157	Adult; 2-3 adults, 10-12 larvae found here
13	*Ambystoma tigrinum*	Eastern Tiger Salamander	AmbTigCACH8-5-02a	05 AUG 2002	666700	3997997	Adult; at Whiskey Reservoir
14	*Ambystoma tigrinum*	Eastern Tiger Salamander	AmbTigCACH8-5-02b	05 AUG 2002	666700	3997997	Adult; at Whiskey Reservoir
15	*Ambystoma*	Eastern Tiger	AmbTigCACH8-5-02c	05 AUG 2002	666700	3997997	Adult; at Whiskey Reservoir

ID	Species	Common Name	Photo (File) Name	Photo Date	Easting	Northing	Remarks
	tigrinum	Salamander					
16	*Ambystoma tigrinum*	Eastern Tiger Salamander	AmbTigCACH8-5-02d	05 AUG 2002	666700	3997997	Adult; at Whiskey Reservoir
17	*Bufo punctatus*	Red-Spotted Toad	BufPun881CACH8-21-03a	21 AUG 2003	632724	4001915	Toadlet (young-of-year); on Plot 881
18	*Bufo punctatus*	Red-Spotted Toad	BufPun881CACH8-21-03b	21 AUG 2003	632724	4001915	Toadlet (young-of-year); on Plot 881
19	*Bufo punctatus*	Red-Spotted Toad	BufPun881CACH8-21-03c	21 AUG 2003	632724	4001915	Toadlet (young-of-year); on Plot 881
20	*Bufo punctatus*	Red-Spotted Toad	BufPun881CACH8-21-03d	21 AUG 2003	632724	4001915	Toadlet (young-of-year); on Plot 881
21	*Bufo punctatus*	Red-Spotted Toad	BufPunCACH5-24-03a	24 MAY 2003	643511	4007596	Adult; found at isolated breeding pools
22	*Bufo punctatus*	Red-Spotted Toad	BufPunCACH5-24-03b	24 MAY 2003	643511	4007596	Adult; found at isolated breeding pools
23	*Bufo punctatus*	Red-Spotted Toad	BufPunCACH5-24-03c	24 MAY 2003	643511	4007596	Adult; found at isolated breeding pools
24	*Bufo punctatus*	Red-Spotted Toad	BufPunCACH6-4-03a	04 JUN 2003	647812	4011742	Adult; 5 were TL-45.0-53.3mm; all calling
25	*Bufo punctatus*	Red-Spotted Toad	BufPunCACH6-4-03b	04 JUN 2003	647812	4011742	Adult; 5 were TL-45.0-53.3mm; all calling
26	*Bufo punctatus*	Red-Spotted Toad	BufPunCACH6-4-03c	04 JUN 2003	647812	4011742	Adults in amplexus
27	*Bufo punctatus*	Red-Spotted Toad	BufPunCACH6-4-03d	04 JUN 2003	647812	4011742	Adults in amplexus
28	*Bufo punctatus*	Red-Spotted Toad	BufPunCACH6-5-03	05 JUN 2003	649665	4012551	Adult; 4-5 were calling
29	*Bufo punctatus*	Red-Spotted Toad	BufPunCACH8-12-03a	12 AUG 2003	639018	4000980	Juvenile or young-of-year
30	*Bufo punctatus*	Red-Spotted Toad	BufPunCACH8-12-03b	12 AUG 2003	639018	4000980	Juvenile or young-of-year

31	*Bufo punctatus*	Red-Spotted Toad	BufPunCACH8-12-03c	12 AUG 2003	639018	4000980	Juvenile or young-of-year
32	*Bufo punctatus*	Red-Spotted Toad	BufPunCACH8-12-03d	12 AUG 2003	639018	4000980	Juvenile or young-of-year
33	*Bufo punctatus*	Red-Spotted Toad	BufPunCACH8-12-03e	12 AUG 2003	639018	4000980	Adult
34	*Bufo punctatus*	Red-Spotted Toad	BufPunCACH8-12-03f	12 AUG 2003	639018	4000980	Adult
35	*Bufo punctatus*	Red-Spotted Toad	BufPunCACH8-12-03g	12 AUG 2003	639018	4000980	Juvenile or young-of-year
36	*Bufo punctatus*	Red-Spotted Toad	BufPunCACH8-12-03h	12 AUG 2003	639018	4000980	Adult
37	*Bufo punctatus*	Red-Spotted Toad	BufPunCACH8-13-03a	13 AUG 2003	639018	4000980	Toadlet (young-of-year); TL-20-25mm
38	*Bufo punctatus*	Red-Spotted Toad	BufPunCACH8-13-03b	13 AUG 2003	639018	4000980	Toadlet (young-of-year); TL-20-25mm
39	*Bufo punctatus*	Red-Spotted Toad	BufPunCACH8-13-03c	13 AUG 2003	639018	4000980	Adult; TL-72.0mm
40	*Bufo punctatus*	Red-Spotted Toad	BufPunCACH8-13-03d	13 AUG 2003	639018	4000980	Adult; TL-72.0mm
41	*Bufo punctatus*	Red-Spotted Toad	BufPunCACH8-19-03a	19 AUG 2003	635263	3998157	Adult
42	*Bufo punctatus*	Red-Spotted Toad	BufPunCACH8-19-03b	19 AUG 2003	635263	3998157	Adult
43	*Bufo punctatus*	Red-Spotted Toad	BufPunCACH8-19-03c	19 AUG 2003	635263	3998157	Adult
44	*Bufo punctatus*	Red-Spotted Toad	BufPunCACH8-19-03d	19 AUG 2003	635263	3998157	Adult
45	*Bufo punctatus*	Red-Spotted Toad	BufPunCACH8-19-03e	19 AUG 2003	642538	3993709	Adult
46	*Bufo punctatus*	Red-Spotted Toad	BufPunCACH8-19-03f	19 AUG 2003	642538	3993709	Adult
47	*Bufo punctatus*	Red-Spotted Toad	BufPunCACH8-19-03g	19 AUG 2003	642538	3993709	Adult

48	*Bufo punctatus*	Red-Spotted Toad	BufPunCACH8-19-03h	19 AUG 2003	642538	3993709	Adult
49	*Bufo punctatus*	Red-Spotted Toad	BufPunCACH8-19-03i	19 AUG 2003	642538	3993709	Adult
50	*Bufo punctatus*	Red-Spotted Toad	BufPunCACH8-19-03j	19 AUG 2003	642538	3993709	Adult
51	*Bufo punctatus*	Red-Spotted Toad	BufPunCACH8-19-03k	19 AUG 2003	642538	3993709	Adult
52	*Bufo punctatus*	Red-Spotted Toad	BufPunCACH8-21-03a	21 AUG 2003	635263	3998157	Adult
53	*Bufo punctatus*	Red-Spotted Toad	BufPunCACH8-21-03b	21 AUG 2003	635263	3998157	Adult
54	*Bufo punctatus*	Red-Spotted Toad	BufPunCACH8-21-03c	21 AUG 2003	635263	3998157	Adult
55	*Bufo punctatus*	Red-Spotted Toad	BufPunCACH8-21-03d	21 AUG 2003	635263	3998157	Adult
56	*Bufo woodhousii*	Woodhouse's Toad	BufWoo18694CACH8-5-02	05 AUG 2002	665856	4000158	Adult; TL-66.8mm; on Plot 18694
57	*Bufo woodhousii*	Woodhouse's Toad	BufWooCACH5-25-02a	25 MAY 2002	651286	3998079	Adult
58	*Bufo woodhousii*	Woodhouse's Toad	BufWooCACH5-25-02b	25 MAY 2002	651286	3998079	Adult
59	*Bufo woodhousii*	Woodhouse's Toad	BufWooCACH5-25-02c	25 MAY 2002	651286	3998079	Adult
60	*Bufo woodhousii*	Woodhouse's Toad	BufWooCACH5-25-02d	25 MAY 2002	651286	3998079	Adult
61	*Bufo woodhousii*	Woodhouse's Toad	BufWooCACH5-30-03a	30 MAY 2003	636103	4000216	Larva; approx.1000 in 200-m of creek
62	*Bufo woodhousii*	Woodhouse's Toad	BufWooCACH5-30-03b	30 MAY 2003	636103	4000216	Larva; approx.1000 in 200-m of creek
63	*Bufo woodhousii*	Woodhouse's Toad	BufWooCACH6-5-03a	05 JUN 2003	649665	4012551	Adult
64	*Bufo woodhousii*	Woodhouse's Toad	BufWooCACH6-5-03b	05 JUN 2003	649665	4012551	Adult

65	*Bufo woodhousii*	Woodhouse's Toad	BufWooCACH6-7-02	07 JUN 2002	654136	3998353	Adult; TL-58.5mm
66	*Bufo woodhousii*	Woodhouse's Toad	BufWooCACH7-10-02a	10 JUL 2002	653983	3998451	Toadlet; 5 were TL-11.9-15.3mm
67	*Bufo woodhousii*	Woodhouse's Toad	BufWooCACH7-10-02b	10 JUL 2002	653983	3998451	Toadlet; 5 were TL-11.9-15.3mm
68	*Bufo woodhousii*	Woodhouse's Toad	BufWooCACH7-10-02c	10 JUL 2002	653983	3998451	Toadlet; 5 were TL-11.9-15.3mm
69	*Bufo woodhousii*	Woodhouse's Toad	BufWooCACH7-10-03a	10 JUL 2003	652274	4001972	Adult
70	*Bufo woodhousii*	Woodhouse's Toad	BufWooCACH7-10-03b	10 JUL 2003	653625	4002978	Adult; one was TL-78.5mm; at Twin Dams
71	*Bufo woodhousii*	Woodhouse's Toad	BufWooCACH7-10-03c	10 JUL 2003	653625	4002978	Adult; one was TL-78.5mm; at Twin Dams
72	*Bufo woodhousii*	Woodhouse's Toad	BufWooCACH7-10-03d	10 JUL 2003	653625	4002978	Adult; one was TL-78.5mm; at Twin Dams
73	*Bufo woodhousii*	Woodhouse's Toad	BufWooCACH7-10-03e	10 JUL 2003	653625	4002978	Adult; one was TL-78.5mm; at Twin Dams
74	*Bufo woodhousii*	Woodhouse's Toad	BufWooCACH7-21-03	21 JUL 2003	648510	4012950	Toadlet; 5 were TL-19-22mm
75	*Bufo woodhousii*	Woodhouse's Toad	BufWooCACH8-12-02a	12 AUG 2002	665685	3997257	Toadlet (young-of-year)
76	*Bufo woodhousii*	Woodhouse's Toad	BufWooCACH8-12-02b	12 AUG 2002	665685	3997257	Toadlet (young-of-year)
77	*Bufo woodhousii*	Woodhouse's Toad	BufWooCACH8-12-02c	12 AUG 2002	665685	3997257	Toadlet (young-of-year)
78	*Bufo woodhousii*	Woodhouse's Toad	BufWooCACH8-12-02d	12 AUG 2002	665685	3997257	Toadlet (young-of-year)
79	*Bufo woodhousii*	Woodhouse's Toad	BufWooCACH8-12-02e	12 AUG 2002	665945	3998265	Adult; TL-63.5mm
80	*Bufo woodhousii*	Woodhouse's Toad	BufWooCACH8-19-03a	19 AUG 2003	635263	3998157	Adult
81	*Bufo woodhousii*	Woodhouse's Toad	BufWooCACH8-19-03b	19 AUG 2003	635263	3998157	Adult

82	*Bufo woodhousii*	Woodhouse's Toad	BufWooCACH8-20-02	20 AUG 2002	652390	3997779	Toadlet (young-of-year); approx.TL-30mm
83	*Cnemidophorus tigris*	Western Whiptail	CneTig2097CACH7-18-03a	18 JUL 2003	634983	4002166	Adult; on Plot 2097
84	*Cnemidophorus tigris*	Western Whiptail	CneTig2097CACH7-18-03b	18 JUL 2003	634983	4002166	Adult; on Plot 2097
85	*Cnemidophorus tigris*	Western Whiptail	CneTig2097CACH7-18-03c	18 JUL 2003	634983	4002166	Adult; on Plot 2097
86	*Cnemidophorus tigris*	Western Whiptail	CneTig2097CACH8-19-03a	19 AUG 2003	634983	4002166	Hatchling or Juvenile; on Plot 2097
87	*Cnemidophorus velox*	Plateau Striped Whiptail	CneVel10584CACH7-11-02a	11 JUL 2002	650796	3997648	Adult; on Plot 10584
88	*Cnemidophorus velox*	Plateau Striped Whiptail	CneVel10584CACH7-11-02b	11 JUL 2002	650796	3997648	Adult; on Plot 10584
89	*Cnemidophorus velox*	Plateau Striped Whiptail	CneVel10584CACH7-11-02c	11 JUL 2002	650796	3997648	Adult; on Plot 10584
90	*Cnemidophorus velox*	Plateau Striped Whiptail	CneVel10584CACH8-21-02a	21 AUG 2002	650796	3997648	Hatchling; SVL-32.2mm on Plot 10584
91	*Cnemidophorus velox*	Plateau Striped Whiptail	CneVel10584CACH8-21-02b	21 AUG 2002	650796	3997648	Hatchling (young-of-year); on Plot 10584
92	*Cnemidophorus velox*	Plateau Striped Whiptail	CneVel10584CACH8-21-02c	21 AUG 2002	650796	3997648	Hatchling (young-of-year); on Plot 10584
93	*Cnemidophorus velox*	Plateau Striped Whiptail	CneVel10584CACH8-21-02d	21 AUG 2002	650796	3997648	Hatchling (young-of-year); on Plot 10584
94	*Cnemidophorus velox*	Plateau Striped Whiptail	CneVel10584CACH8-21-02e	21 AUG 2002	650796	3997648	Hatchling (young-of-year); on Plot 10584
95	*Cnemidophorus velox*	Plateau Striped Whiptail	CneVel9154CACH6-5-03a	05 JUN 2003	647907	4011372	Adult; on Plot 9154
96	*Cnemidophorus velox*	Plateau Striped Whiptail	CneVel9154CACH6-5-03b	05 JUN 2003	647907	4011372	Adult; on Plot 9154
97	*Cnemidophorus velox*	Plateau Striped Whiptail	CneVel9154CACH6-5-03c	05 JUN 2003	647907	4011372	Adult; on Plot 9154
98	*Cnemidophorus velox*	Plateau Striped Whiptail	CneVelCACH8-12-03b	12 AUG 2003	637400	4001060	Adult; near Plot 3443; UTM approx.

99	*Crotaphytus collaris*	Eastern Collared Lizard	CroCol5179CACH8-13-02a	13 AUG 2002	640820	3996190	Juv.-Adult; SVL-75.4mm; on Plot 5179
100	*Crotaphytus collaris*	Eastern Collared Lizard	CroCol5179CACH8-13-02b	13 AUG 2002	640820	3996190	Juv.-Adult; SVL-75.4mm; on Plot 5179
101	*Crotaphytus collaris*	Eastern Collared Lizard	CroCol5179CACH8-13-02c	13 AUG 2002	640820	3996190	Juv.-Adult; SVL-75.4mm; on Plot 5179
102	*Crotaphytus collaris*	Eastern Collared Lizard	CroCol5179CACH8-13-02d	13 AUG 2002	640820	3996190	Juv.-Adult; SVL-75.4mm; on Plot 5179
103	*Crotaphytus collaris*	Eastern Collared Lizard	CroCol5179CACH8-13-02e	13 AUG 2002	640820	3996190	Juv.-Adult; SVL-75.4mm; on Plot 5179
104	*Crotaphytus collaris*	Eastern Collared Lizard	CroCol5179CACH8-13-02f	13 AUG 2002	640820	3996190	Juv.-Adult; SVL-75.4mm; on Plot 5179
105	*Crotaphytus collaris*	Eastern Collared Lizard	CroCol5179CACH8-13-02g	13 AUG 2002	640820	3996190	Juv.-Adult; SVL-75.4mm; on Plot 5179
106	*Crotaphytus collaris*	Eastern Collared Lizard	CroCol5179CACH8-13-02h	13 AUG 2002	640820	3996190	Juv.-Adult; SVL-75.4mm; on Plot 5179
107	*Crotaphytus collaris*	Eastern Collared Lizard	CroCol5179CACH8-13-02i	13 AUG 2002	640820	3996190	Juv.-Adult; SVL-75.4mm; on Plot 5179
108	*Crotaphytus collaris*	Eastern Collared Lizard	CroColCACH5-24-03	24 MAY 2003	643311	4006972	Adult
109	*Crotaphytus collaris*	Eastern Collared Lizard	CroColCACH5-30-03	30 MAY 2003	635547	4003185	Adult
110	*Crotalus viridis*	Prairie Rattlesnake	CroVir17082CACH8-12-02a	12 AUG 2002	662908	4001963	Adult; on Plot 17082
111	*Crotalus viridis*	Prairie Rattlesnake	CroVir17082CACH8-12-02a	12 AUG 2002	662908	4001963	Adult; on Plot 17082
112	*Crotalus viridis*	Prairie Rattlesnake	CroVir17082CACH8-12-02a	12 AUG 2002	662908	4001963	Adult; on Plot 17082
113	*Crotalus viridis*	Prairie Rattlesnake	CroVir8406CACH6-2-02a	02 JUN 2002	646844	3992927	Juvenile; on Plot 8406
114	*Crotalus viridis*	Prairie Rattlesnake	CroVir8406CACH6-2-02a	02 JUN 2002	646844	3992927	Juvenile; on Plot 8406
115	*Crotalus viridis*	Prairie Rattlesnake	CroVir8406CACH6-2-02a	02 JUN 2002	646844	3992927	Juvenile; on Plot 8406

116	*Eumeces multivirgatus*	Many-lined Skink	EumMul11047CACH8-26-03	26 AUG 2003	651549	4012206	Adult; on Plot 11047
117	*Eumeces multivirgatus*	Many-lined Skink	EumMul18957CACH8-6-02a	06 AUG 2002	666483	3998197	Juvenile; SVL-35.1mm; on Plot 18957
118	*Eumeces multivirgatus*	Many-lined Skink	EumMul18957CACH8-6-02b	06 AUG 2002	666483	3998197	Juvenile; SVL-35.1mm; on Plot 18957
119	*Eumeces multivirgatus*	Many-lined Skink	EumMul18957CACH8-6-02c	06 AUG 2002	666483	3998197	Juvenile; SVL-35.1mm; on Plot 18957
120	*Eumeces multivirgatus*	Many-lined Skink	EumMul18957CACH8-6-02d	06 AUG 2002	666483	3998197	Juvenile; SVL-35.1mm; on Plot 18957
121	*Eumeces multivirgatus*	Many-lined Skink	EumMul18957CACH8-6-02e	06 AUG 2002	666483	3998197	Juvenile; SVL-35.1mm; on Plot 18957
122	*Eumeces multivirgatus*	Many-lined Skink	EumMul18957CACH8-6-02f	06 AUG 2002	666483	3998197	Juvenile; SVL-32.9mm; on Plot 18957
123	*Eumeces multivirgatus*	Many-lined Skink	EumMul18957CACH8-6-02g	06 AUG 2002	666483	3998197	Juvenile; SVL-32.9mm; on Plot 18957
124	*Hyla arenicolor*	Canyon Treefrog	HylAre5881CACH5-27-03a	27 MAY 2003	642011	4003170	Adult; on Plot 5881
125	*Hyla arenicolor*	Canyon Treefrog	HylAre5881CACH5-27-03b	27 MAY 2003	642011	4003170	Adult; on Plot 5881
126	*Hyla arenicolor*	Canyon Treefrog	HylAre5881CACH5-27-03c	27 MAY 2003	642011	4003170	Adult; on Plot 5881
127	*Hyla arenicolor*	Canyon Treefrog	HylAreCACH6-4-03	04 JUN 2003	642011	4003170	Adult; TL-43.1mm
128	*Hyla arenicolor*	Canyon Treefrog	HylAreCACH6-7-02a	07 JUN 2002	654050	3998235	Adult
129	*Hyla arenicolor*	Canyon Treefrog	HylAreCACH6-7-02b	07 JUN 2002	654050	3998235	Adult
130	*Hyla arenicolor*	Canyon Treefrog	HylAreCACH6-7-02c	07 JUN 2002	654050	3998235	Adult
131	*Hyla arenicolor*	Canyon Treefrog	HylAreCACH7-21-03a	21 JUL 2003	647650	4011189	Larvae
132	*Hyla arenicolor*	Canyon Treefrog	HylAreCACH7-21-03b	21 JUL 2003	647650	4011189	Larvae

133	*Hyla arenicolor*	Canyon Treefrog	HylAreCACH7-21-03c	21 JUL 2003	647650	4011189	Larvae
134	*Hyla arenicolor*	Canyon Treefrog	HylAreCACH7-26-03a	26 JUL 2003	647200	3992700	Adult
135	*Hyla arenicolor*	Canyon Treefrog	HylAreCACH7-26-03b	26 JUL 2003	647200	3992700	Adult
136	*Hyla arenicolor*	Canyon Treefrog	HylAreCACH8-12-03a	12 AUG 2003	639018	4000980	Adult
137	*Hyla arenicolor*	Canyon Treefrog	HylAreCACH8-12-03b	21 JUL 2003	639018	4000980	Adult
138	*Hyla arenicolor*	Canyon Treefrog	HylAreCACH8-12-03c	21 JUL 2003	639018	4000980	Adult
139	*Hyla arenicolor*	Canyon Treefrog	HylAreCACH8-12-03d	21 JUL 2003	639018	4000980	Adult
140	*Masticophus taeniatus*	Striped Whipsnake	MasTaeCACH7-17-03a	17 JUL 2003	640430	4002007	Juvenile; approx.TL-60-80cm
141	*Masticophus taeniatus*	Striped Whipsnake	MasTaeCACH7-17-03b	17 JUL 2003	640430	4002007	Juvenile; approx.TL-60-80cm
142	*Masticophus taeniatus*	Striped Whipsnake	MasTaeCACH7-17-03c	17 JUL 2003	640430	4002007	Juvenile; approx.TL-60-80cm
143	*Masticophus taeniatus*	Striped Whipsnake	MasTaeCACH7-17-03d	17 JUL 2003	640430	4002007	Juvenile; approx.TL-60-80cm
144	*Masticophus taeniatus*	Striped Whipsnake	MasTaeCACH7-17-03e	17 JUL 2003	640430	4002007	Juvenile; approx.TL-60-80cm
145	*Phrynosoma hernandesi*	Mountain Short-horned Lizard	PhrHer19365CACH7-8-02a	08 JUL 2002	667236	3998950	Juvenile; on Plot 19365
146	*Phrynosoma hernandesi*	Mountain Short-horned Lizard	PhrHer19365CACH7-8-02b	08 JUL 2002	667236	3998950	Juvenile; on Plot 19365
147	*Phrynosoma hernandesi*	Mountain Short-horned Lizard	PhrHer19385CACH8-5-02a	05 AUG 2002	667172	4004173	Juvenile; SVL-38.8mm; on Plot 19385
148	*Phrynosoma hernandesi*	Mountain Short-horned Lizard	PhrHer19385CACH8-5-02b	05 AUG 2002	667172	4004173	Juvenile; SVL-38.8mm; on Plot 19385
149	*Phrynosoma hernandesi*	Mountain Short-horned Lizard	PhrHerCACH7-12-02a	12 JUL 2002	646502	3993818	Juvenile; SVL-53.1mm

150	*Phrynosoma hernandesi*	Mountain Short-horned Lizard	PhrHerCACH7-12-02b	12 JUL 2002	646502	3993818	Juvenile; SVL-53.1mm
151	*Phrynosoma hernandesi*	Mountain Short-horned Lizard	PhrHerCACH7-12-02c	12 JUL 2002	646502	3993818	Juvenile; SVL-53.1mm
152	*Phrynosoma hernandesi*	Mountain Short-horned Lizard	PhrHerCACH7-8-02a	08 JUL 2002	667509	3999674	Juvenile or Hatchling
153	*Phrynosoma hernandesi*	Mountain Short-horned Lizard	PhrHerCACH7-8-02b	08 JUL 2002	667509	3999674	Juvenile or Hatchling
154	*Phrynosoma hernandesi*	Mountain Short-horned Lizard	PhrHerCACH7-8-02c	08 JUL 2002	667509	3999674	Juvenile or Hatchling
155	*Pituophis catenifer*	Gopher Snake	PitCat3980CACH5-19-03a	19 MAY 2003	638497	4000409	Adult; approx.TL-74cm; on Plot 3980
156	*Pituophis catenifer*	Gopher Snake	PitCat3980CACH5-19-03b	19 MAY 2003	638497	4000409	Adult; approx.TL-74cm; on Plot 3980
157	*Pituophis catenifer*	Gopher Snake	PitCat3980CACH5-19-03c	19 MAY 2003	638497	4000409	Adult; approx.TL-74cm; on Plot 3980
158	*Pituophis catenifer*	Gopher Snake	PitCat3980CACH5-19-03d	19 MAY 2003	638497	4000409	Adult; approx.TL-74cm; on Plot 3980
159	*Pituophis catenifer*	Gopher Snake	PitCatCACH7-22-03a	22 JUL 2003	646708	4008180	Juv-Adult; approx.TL-61cm
160	*Pituophis catenifer*	Gopher Snake	PitCatCACH7-22-03b	22 JUL 2003	646708	4008180	Juv-Adult; approx.TL-61cm
161	*Pituophis catenifer*	Gopher Snake	PitCatCACH7-22-03c	22 JUL 2003	646708	4008180	Juv-Adult; approx.TL-61cm
162	*Sceloporus graciosus*	Sagebrush Lizard	SceGra11047CACH6-4-03a	04 JUN 2003	651549	4012206	Adult; on Plot 11047
163	*Sceloporus graciosus*	Sagebrush Lizard	SceGra11047CACH6-4-03b	04 JUN 2003	651549	4012206	Adult; on Plot 11047
164	*Sceloporus graciosus*	Sagebrush Lizard	SceGra1149CACH5-29-03	29 MAY 2003	633170	4001185	Adult; on Plot 1149
165	*Sceloporus graciosus*	Sagebrush Lizard	SceGra1955CACH8-21-03a	21 AUG 2003	634732	4000409	Hatchling; on Plot 1955
166	*Sceloporus graciosus*	Sagebrush Lizard	SceGra1955CACH8-21-03b	21 AUG 2003	634732	4000409	Adult; on Plot 1955

167	*Sceloporus graciosus*	Sagebrush Lizard	SceGra1955CACH8-21-03c	21 AUG 2003	634732	4000409	Adult; on Plot 1955
168	*Sceloporus graciosus*	Sagebrush Lizard	SceGra8051CACH6-4-03a	04 JUN 2003	645572	4005602	Adult; SVL-56.3mm; on Plot 8051
169	*Sceloporus graciosus*	Sagebrush Lizard	SceGra8051CACH6-4-03b	04 JUN 2003	645572	4005602	Adult; SVL-56.3mm; on Plot 8051
170	*Sceloporus graciosus*	Sagebrush Lizard	SceGra8051CACH6-4-03c	04 JUN 2003	645572	4005602	Adult; SVL-56.3mm; on Plot 8051
171	*Sceloporus graciosus*	Sagebrush Lizard	SceGraCACH5-19-03a	19 MAY 2003	638464	4000624	Adult; near Plot 3980
172	*Sceloporus graciosus*	Sagebrush Lizard	SceGraCACH5-19-03b	19 MAY 2003	638464	4000624	Adult; near Plot 3980
173	*Sceloporus graciosus*	Sagebrush Lizard	SceGraCACH5-19-03c	19 MAY 2003	638464	4000624	Adult; near Plot 3980
174	*Sceloporus graciosus*	Sagebrush Lizard	SceGraCACH5-19-03d	19 MAY 2003	638464	4000624	Adult; near Plot 3980
175	*Sceloporus graciosus*	Sagebrush Lizard	SceGraCACH5-19-03e	19 MAY 2003	638464	4000624	Adult; near Plot 3980
176	*Sceloporus undulatus*	Eastern Fence Lizard	SceUnd11397CACH7-11-02a	11 JUL 2002	652302	3998401	Adult; SVL-69.3mm; on Plot 11397
177	*Sceloporus undulatus*	Eastern Fence Lizard	SceUnd11397CACH7-11-02b	11 JUL 2002	652302	3998401	Adult; SVL-69.3mm; on Plot 11397
178	*Sceloporus undulatus*	Eastern Fence Lizard	SceUnd11397CACH7-11-02c	11 JUL 2002	652302	3998401	Adult; SVL-69.3mm; on Plot 11397
179	*Sceloporus undulatus*	Eastern Fence Lizard	SceUnd11936CACH6-8-02a	08 JUN 2002	653489	3998207	Adult Male; SVL-71.0mm; on Plot 11936
180	*Sceloporus undulatus*	Eastern Fence Lizard	SceUnd11936CACH6-8-02b	08 JUN 2002	653489	3998207	Adult Male; SVL-71.0mm; on Plot 11936
181	*Sceloporus undulatus*	Eastern Fence Lizard	SceUnd12828CACH7-9-02a	09 JUL 2002	655127	3984644	Juv-Adult; SVL-48.4mm; on Plot 12828
182	*Sceloporus undulatus*	Eastern Fence Lizard	SceUnd12828CACH7-9-02b	09 JUL 2002	655127	3984644	Juv-Adult; SVL-48.4mm; on Plot 12828
183	*Sceloporus undulatus*	Eastern Fence Lizard	SceUnd12828CACH7-9-02c	09 JUL 2002	655127	3984644	Juv-Adult; SVL-48.4mm; on Plot 12828

184	*Sceloporus undulatus*	Eastern Fence Lizard	SceUnd12964CACH5-22-02a	22 MAY 2002	655378	3984895	Adult Male; SVL-62.5mm; on Plot 12828
185	*Sceloporus undulatus*	Eastern Fence Lizard	SceUnd12964CACH5-22-02b	22 MAY 2002	655378	3984895	Adult Male; SVL-62.5mm; on Plot 12828
186	*Sceloporus undulatus*	Eastern Fence Lizard	SceUnd18537CACH5-24-02	24 MAY 2002	665669	3994433	Juvenile; on Plot 18537
187	*Sceloporus undulatus*	Eastern Fence Lizard	SceUnd18537CACH8-12-02a	12 AUG 2002	665669	3994433	Hatchling; SVL-25.6mm; on Plot 18537
188	*Sceloporus undulatus*	Eastern Fence Lizard	SceUnd18537CACH8-12-02b	12 AUG 2002	665669	3994433	Hatchling; SVL-25.6mm; on Plot 18537
189	*Sceloporus undulatus*	Eastern Fence Lizard	SceUnd18694CACH7-5-02	05 JUL 2002	665856	4000158	Juvenile; on Plot 18694
190	*Sceloporus undulatus*	Eastern Fence Lizard	SceUnd18694CACH8-5-02	05 AUG 2002	665856	4000158	Hatchling; SVL-25.8mm; on Plot 18694
191	*Sceloporus undulatus*	Eastern Fence Lizard	SceUnd1955CACH8-21-03a	21 AUG 2003	634732	4000409	Hatchling; on Plot 1955
192	*Sceloporus undulatus*	Eastern Fence Lizard	SceUnd1955CACH8-21-03b	21 AUG 2003	634732	4000409	Hatchling; on Plot 1955
193	*Sceloporus undulatus*	Eastern Fence Lizard	SceUnd2097CACH5-30-03a	30 MAY 2003	634983	4002166	Adult; on Plot 2097
194	*Sceloporus undulatus*	Eastern Fence Lizard	SceUnd2097CACH5-30-03b	30 MAY 2003	634983	4002166	Adult; on Plot 2097
195	*Sceloporus undulatus*	Eastern Fence Lizard	SceUnd6284CACH6-4-03	04 JUN 2003	642522	4002767	Adult; on Plot 6284
196	*Sceloporus undulatus*	Eastern Fence Lizard	SceUnd881CACH5-29-03a	29 MAY 2003	632724	4001915	Adult Female (gravid); on Plot 881
197	*Sceloporus undulatus*	Eastern Fence Lizard	SceUnd881CACH5-29-03b	29 MAY 2003	632724	4001915	Adult Female (gravid); on Plot 881
198	*Sceloporus undulatus*	Eastern Fence Lizard	SceUndCACH5-24-02	24 MAY 2002	651195	3997662	Adult; Whiskey Cr. in Cany.deChelly
199	*Sceloporus undulatus*	Eastern Fence Lizard	SceUndCACH7-10-02	10 JUL 2002	655050	3998400	Adult; Whiskey Cr. in Cany.deChelly
200	*Sceloporus undulatus*	Eastern Fence Lizard	SceUndCACH7-17-03a	17 JUL 2003	0	0	Adult; C.Muerto; exact location not recorded

201	*Sceloporus undulatus*	Eastern Fence Lizard	SceUndCACH7-17-03b	17 JUL 2003	0	0	Adult; C.Muerto; exact location not recorded
202	*Sceloporus undulatus*	Eastern Fence Lizard	SceUndCACH7-17-03c	17 JUL 2003	0	0	Juv.; C.Muerto; exact location not recorded
203	*Sceloporus undulatus*	Eastern Fence Lizard	SceUndCACH7-17-03d	17 JUL 2003	0	0	Juv.; C.Muerto; exact location not recorded
204	*Sceloporus undulatus*	Eastern Fence Lizard	SceUndCACH8-14-03	14 AUG 2003	0	0	Hatchling; exact location not recorded
205	*Spea bombifrons*	Plains Spadefoot	SpeBomCACH8-5-02a	05 AUG 2002	667119	3998803	Adult; TL-49.2mm
206	*Spea bombifrons*	Plains Spadefoot	SpeBomCACH8-5-02b	05 AUG 2002	667119	3998803	Adult; TL-49.2mm
207	*Spea bombifrons*	Plains Spadefoot	SpeBomCACH8-5-02c	05 AUG 2002	667119	3998803	Adult; TL-49.2mm
208	*Spea bombifrons*	Plains Spadefoot	SpeBomCACH8-5-02d	05 AUG 2002	667119	3998803	Adult; TL-49.2mm
209	*Spea bombifrons*	Plains Spadefoot	SpeBomCACH8-5-02e	05 AUG 2002	667119	3998803	Adult; TL-49.2mm
210	*Spea bombifrons*	Plains Spadefoot	SpeBomCACH8-5-02f	05 AUG 2002	667119	3998803	Adult; TL-49.2mm
211	*Spea bombifrons*	Plains Spadefoot	SpeBomCACH8-5-02e	05 AUG 2002	667119	3998803	Adult; TL-49.2mm
212	*Spea bombifrons*	Plains Spadefoot	SpeBomCACH8-5-02f	05 AUG 2002	667119	3998803	Adult; TL-49.2mm
213	*Spea multiplicata*	New Mexico Spadefoot	SpeMul eggsCACH7-28-03	28 JUL 2003	664882	4003478	Eggs in pool
214	*Spea multiplicata*	New Mexico Spadefoot	SpeMul larvaCACH8-19-03a	19 AUG 2003	642538	3993709	Larvae
215	*Spea multiplicata*	New Mexico Spadefoot	SpeMul larvaCACH8-19-03a	19 AUG 2003	642538	3993709	Larvae
216	*Spea multiplicata*	New Mexico Spadefoot	SpeMul1CACH7-28-03a	28 JUL 2003	664736	4003898	Adult
217	*Spea multiplicata*	New Mexico Spadefoot	SpeMul1CACH7-28-03b	28 JUL 2003	664736	4003898	Adult

218	*Spea multiplicata*	New Mexico Spadefoot	SpeMul1CACH7-28-03c	28 JUL 2003	664736	4003898	Adult
219	*Spea multiplicata*	New Mexico Spadefoot	SpeMul1CACH7-28-03d	28 JUL 2003	664736	4003898	Adult
220	*Spea multiplicata*	New Mexico Spadefoot	SpeMul1CACH7-28-03e	28 JUL 2003	664736	4003898	Adult
221	*Spea multiplicata*	New Mexico Spadefoot	SpeMul1CACH7-28-03f	28 JUL 2003	664736	4003898	Adult
222	*Spea multiplicata*	New Mexico Spadefoot	SpeMul2CACH7-28-03a	28 JUL 2003	668116	3999752	Adult; at head of Bat Canyon tributary
223	*Spea multiplicata*	New Mexico Spadefoot	SpeMul2CACH7-28-03b	28 JUL 2003	668116	3999752	Adult; at head of Bat Canyon tributary
224	*Spea multiplicata*	New Mexico Spadefoot	SpeMul2CACH7-28-03c	28 JUL 2003	668116	3999752	Adult; at head of Bat Canyon tributary
225	*Spea multiplicata*	New Mexico Spadefoot	SpeMulCACH7-26-03a	26 JUL 2003	647225	3992660	Adult; at head of Bat Canyon tributary
226	*Spea multiplicata*	New Mexico Spadefoot	SpeMulCACH7-26-03b	26 JUL 2003	647225	3992660	Adult; at head of Bat Canyon tributary
227	*Spea multiplicata*	New Mexico Spadefoot	SpeMulCACH7-26-03c	26 JUL 2003	647225	3992660	Adult; at head of Bat Canyon tributary
228	*Spea multiplicata*	New Mexico Spadefoot	SpeMulCACH7-26-03d	26 JUL 2003	647225	3992660	Adult; at head of Bat Canyon tributary
229	*Spea multiplicata*	New Mexico Spadefoot	SpeMulCACH7-26-03e	26 JUL 2003	647225	3992660	Adult; at head of Bat Canyon tributary
230	*Spea multiplicata*	New Mexico Spadefoot	SpeMulCACH7-26-03f	26 JUL 2003	647225	3992660	Adult; at head of Bat Canyon tributary
231	*Spea multiplicata*	New Mexico Spadefoot	SpeMulCACH7-26-03g	26 JUL 2003	647225	3992660	Adult; at head of Bat Canyon tributary
232	*Spea multiplicata*	New Mexico Spadefoot	SpeMulCACH8-14-03a	14 AUG 2003	641891	4000094	Adult
233	*Spea multiplicata*	New Mexico Spadefoot	SpeMulCACH8-14-03b	14 AUG 2003	641891	4000094	Adult
234	*Spea multiplicata*	New Mexico Spadefoot	SpeMulCACH8-14-03c	14 AUG 2003	641891	4000094	Adult

235	*Spea multiplicata*	New Mexico Spadefoot	SpeMulCACH8-19-03a	19 AUG 2003	635263	3998157	Hatchling; approx.TL-30mm
236	*Spea multiplicata*	New Mexico Spadefoot	SpeMulCACH8-19-03b	19 AUG 2003	635263	3998157	Hatchling; approx.TL-30mm
237	*Spea multiplicata*	New Mexico Spadefoot	SpeMulCACH8-19-03c	19 AUG 2003	635263	3998157	Hatchling; approx.TL-30mm
238	*Spea multiplicata*	New Mexico Spadefoot	SpeMulCACH8-26-03a	26 AUG 2003	642538	3993709	Larvae (with legs)
239	*Spea multiplicata*	New Mexico Spadefoot	SpeMulCACH8-26-03b	26 AUG 2003	642538	3993709	Larvae (with legs)
240	*Spea multiplicata*	New Mexico Spadefoot	SpeMulCACH8-26-03c	26 AUG 2003	642538	3993709	Larvae (with legs)
241	*Spea multiplicata*	New Mexico Spadefoot	SpeMulCACH8-26-03d	26 AUG 2003	642538	3993709	Larvae (with legs)
242	*Spea multiplicata*	New Mexico Spadefoot	SpeMulCACH8-26-03e	26 AUG 2003	642538	3993709	Larvae (with legs)
243	*Spea multiplicata*	New Mexico Spadefoot	SpeMulCACH8-26-03f	26 AUG 2003	642538	3993709	Larvae (with legs)
244	*Spea multiplicata*	New Mexico Spadefoot	SpeMulCACH8-26-03g	26 AUG 2003	642538	3993709	Hatchling (with tail remnant)
245	*Spea multiplicata*	New Mexico Spadefoot	SpeMulCACH8-26-03h	26 AUG 2003	642538	3993709	Hatchling (with tail remnant)
246	*Thamnophis elegans*	West.Terrestrial Garter Snake	ThaEle11047CACH6-5-03a	05 JUN 2003	651549	4012206	Juvenile; approx. TL-36cm
247	*Thamnophis elegans*	West.Terrestrial Garter Snake	ThaEle11047CACH6-5-03b	05 JUN 2003	651549	4012206	Juvenile; approx. TL-36cm
248	*Thamnophis elegans*	West.Terrestrial Garter Snake	ThaEle11047CACH6-5-03c	05 JUN 2003	651549	4012206	Juvenile; approx. TL-36cm
249	*Thamnophis elegans*	West.Terrestrial Garter Snake	ThaEle11047CACH6-5-03d	05 JUN 2003	651549	4012206	Adult; approx. TL-71cm
250	*Thamnophis elegans*	West.Terrestrial Garter Snake	ThaEle18957CACH8-6-02a	06 AUG 2002	666483	3998197	Hatchling; approx. TL-23cm
251	*Thamnophis elegans*	West.Terrestrial Garter Snake	ThaEle18957CACH8-6-02b	06 AUG 2002	666483	3998197	Hatchling; approx. TL-23cm

252	*Thamnophis elegans*	West.Terrestrial Garter Snake	ThaEle18957CACH8-6-02c	06 AUG 2002	666483	3998197	Hatchling; approx. TL-23cm
253	*Thamnophis elegans*	West.Terrestrial Garter Snake	ThaEleCACH7-15-03a	15 JUL 2003	660604	4015062	Adult; no measurement taken
254	*Thamnophis elegans*	West.Terrestrial Garter Snake	ThaEleCACH7-15-03b	15 JUL 2003	660604	4015062	Adult; no measurement taken
255	*Thamnophis elegans*	West.Terrestrial Garter Snake	ThaEleCACH7-15-03c	15 JUL 2003	660604	4015062	Adult; no measurement taken
256	*Thamnophis elegans*	West.Terrestrial Garter Snake	ThaEleCACH7-15-03d	15 JUL 2003	660604	4015062	Adult; no measurement taken
257	*Thamnophis elegans*	West.Terrestrial Garter Snake	ThaEleCACH7-15-03e	15 JUL 2003	660604	4015062	Adult; no measurement taken
258	*Thamnophis elegans*	West.Terrestrial Garter Snake	ThaEleCACH7-15-03f	15 JUL 2003	660604	4015062	Adult; no measurement taken
259	*Thamnophis elegans*	West.Terrestrial Garter Snake	ThaEleCACH7-15-03g	15 JUL 2003	660604	4015062	Adult; no measurement taken
260	*Thamnophis elegans*	West.Terrestrial Garter Snake	ThaEleCACH7-15-03h	15 JUL 2003	660604	4015062	Adult; no measurement taken
261	*Thamnophis elegans*	West.Terrestrial Garter Snake	ThaEleCACH7-15-03i	15 JUL 2003	660604	4015062	Adult; no measurement taken
262	*Thamnophis elegans*	West.Terrestrial Garter Snake	ThaEleCACH7-15-03j	15 JUL 2003	660604	4015062	Adult; no measurement taken
263	*Thamnophis elegans*	West.Terrestrial Garter Snake	ThaEleCACH7-18-03a	18 JUL 2003	633112	4001803	Adult; approx. TL-76cm
264	*Thamnophis elegans*	West.Terrestrial Garter Snake	ThaEleCACH7-18-03b	18 JUL 2003	633112	4001803	Adult; approx. TL-76cm
265	*Thamnophis elegans*	West.Terrestrial Garter Snake	ThaEleCACH7-18-03c	18 JUL 2003	633112	4001803	Adult; approx. TL-76cm
266	*Thamnophis elegans*	West.Terrestrial Garter Snake	ThaEleCACH7-18-03d	18 JUL 2003	633112	4001803	Adult; approx. TL-76cm
267	*Thamnophis elegans*	West.Terrestrial Garter Snake	ThaEleCACH7-18-03e	18 JUL 2003	633112	4001803	Adult; approx. TL-76cm
268	*Thamnophis elegans*	West.Terrestrial Garter Snake	ThaEleCACH7-18-03f	18 JUL 2003	633112	4001803	Adult; approx. TL-76cm

269	*Thamnophis elegans*	West.Terrestrial Garter Snake	ThaEleCACH7-22-03a	22 JUL 2003	647720	4011295	Adult; approx. TL-76cm
270	*Thamnophis elegans*	West.Terrestrial Garter Snake	ThaEleCACH7-22-03b	22 JUL 2003	647720	4011295	Adult; approx. TL-76cm
271	*Thamnophis elegans*	West.Terrestrial Garter Snake	ThaEleCACH7-22-03c	22 JUL 2003	647720	4011295	Adult; approx. TL-76cm
272	*Thamnophis elegans*	West.Terrestrial Garter Snake	ThaEleCACH7-22-03d	22 JUL 2003	647720	4011295	Adult; approx. TL-76cm
273	*Thamnophis elegans*	West.Terrestrial Garter Snake	ThaEleCACH7-28-03a	28 JUL 2003	664882	4003478	Juvenile
274	*Thamnophis elegans*	West.Terrestrial Garter Snake	ThaEleCACH7-28-03b	28 JUL 2003	664882	4003478	Juvenile
275	*Thamnophis elegans*	West.Terrestrial Garter Snake	ThaEleCACH7-28-03c	28 JUL 2003	664882	4003478	Juvenile
276	*Thamnophis elegans*	West.Terrestrial Garter Snake	ThaEleCACH8-12-02a	12 AUG 2002	664882	4003478	Adult; approx TL-61cm
277	*Thamnophis elegans*	West.Terrestrial Garter Snake	ThaEleCACH8-12-02b	12 AUG 2002	664882	4003478	Adult; approx TL-61cm
278	*Thamnophis elegans*	West.Terrestrial Garter Snake	ThaEleCACH8-12-02c	12 AUG 2002	664882	4003478	Adult; approx TL-61cm
279	*Thamnophis elegans*	West.Terrestrial Garter Snake	ThaEleCACH8-12-02d	12 AUG 2002	664882	4003478	Adult; approx TL-61cm
280	*Thamnophis elegans*	West.Terrestrial Garter Snake	ThaEleCACH8-12-02e	12 AUG 2002	664882	4003478	Adult; approx TL-61cm
281	*Thamnophis elegans*	West.Terrestrial Garter Snake	ThaEleCACH8-12-02f	12 AUG 2002	664882	4003478	Adult; approx TL-61cm
282	*Thamnophis elegans*	West.Terrestrial Garter Snake	ThaEleCACH8-12-02g	12 AUG 2002	664882	4003478	Adult; approx TL-61cm
283	*Thamnophis elegans*	West.Terrestrial Garter Snake	ThaEleCACH8-12-02h	12 AUG 2002	664882	4003478	Adult; approx TL-61cm
284	*Thamnophis elegans*	West.Terrestrial Garter Snake	ThaEleCACH8-5-02a	05 AUG 2002	665468	3997027	Hatchling?-Juvenile
285	*Thamnophis elegans*	West.Terrestrial Garter Snake	ThaEleCACH8-5-02b	05 AUG 2002	665468	3997027	Hatchling?-Juvenile

286	*Thamnophis elegans*	West.Terrestrial Garter Snake	ThaEleCACH8-5-02c	05 AUG 2002	665468	3997027	Hatchling?-Juvenile
287	*Thamnophis elegans*	West.Terrestrial Garter Snake	ThaEleCACH8-5-02d	05 AUG 2002	665468	3997027	Hatchling?-Juvenile
288	*Thamnophis elegans*	West.Terrestrial Garter Snake	ThaEleCACH8-5-02e	05 AUG 2002	665468	3997027	Hatchling?-Juvenile
289	*Urosaurus ornatus*	Tree Lizard	UroOrn10584CACH8-21-02a	21 AUG 2002	650796	3997648	Adult; on Plot 10584
290	*Urosaurus ornatus*	Tree Lizard	UroOrn10584CACH8-21-02b	21 AUG 2002	650796	3997648	Adult; on Plot 10584
291	*Urosaurus ornatus*	Tree Lizard	UroOrn10584CACH8-21-02c	21 AUG 2002	650796	3997648	Adult; on Plot 10584
292	*Urosaurus ornatus*	Tree Lizard	UroOrn10584CACH8-21-02d	21 AUG 2002	650796	3997648	Adult; on Plot 10584
293	*Urosaurus ornatus*	Tree Lizard	UroOrn10584CACH8-21-02e	21 AUG 2002	650796	3997648	Adult; on Plot 10584
294	*Urosaurus ornatus*	Tree Lizard	UroOrn11397CACH6-8-02a	08 JUN 2002	652302	3998401	Adult; on Plot 11397
295	*Urosaurus ornatus*	Tree Lizard	UroOrn11397CACH6-8-02b	08 JUN 2002	652302	3998401	Adult; on Plot 11397
296	*Urosaurus ornatus*	Tree Lizard	UroOrn12880CACH8-9-02a	09 AUG 2002	655063	3997899	Adult; SVL-55.6mm; on Plot 12880
297	*Urosaurus ornatus*	Tree Lizard	UroOrn12880CACH8-9-02b	09 AUG 2002	655063	3997899	Adult; SVL-55.6mm; on Plot 12880
298	*Urosaurus ornatus*	Tree Lizard	UroOrn12880CACH8-9-02c	09 AUG 2002	655063	3997899	Adult; SVL-55.6mm; on Plot 12880
299	*Urosaurus ornatus*	Tree Lizard	UroOrn12880CACH8-9-02d	09 AUG 2002	655063	3997899	Adult; SVL-55.6mm; on Plot 12880
300	*Urosaurus ornatus*	Tree Lizard	UroOrn12880CACH8-9-02e	09 AUG 2002	655063	3997899	Adult; SVL-55.6mm; on Plot 12880
301	*Urosaurus ornatus*	Tree Lizard	UroOrn4123CACH7-23-03a	23 JUL 2003	638843	4002551	Adult; on Plot 4123
302	*Urosaurus ornatus*	Tree Lizard	UroOrn4123CACH7-23-03b	23 JUL 2003	638843	4002551	Adult; on Plot 4123

303	*Uta stansburiana*	Side-blotched Lizard	UtaSta10584CACh7-11-02a	11 JUL 2002	650796	3997648	Hatchling; SVL-24.4mm; on Plot 10584
304	*Uta stansburiana*	Side-blotched Lizard	UtaSta10584CACh7-11-02b	11 JUL 2002	650796	3997648	Hatchling; SVL-24.4mm; on Plot 10584
305	*Uta stansburiana*	Side-blotched Lizard	UtaSta881CACH5-29-03a	29 MAY 2003	632724	4001915	Adult; on Plot 881
306	*Uta stansburiana*	Side-blotched Lizard	UtaSta881CACH5-29-03b	29 MAY 2003	632724	4001915	Adult; on Plot 881
307	*Uta stansburiana*	Side-blotched Lizard	UtaSta881CACH8-21-03	21 AUG 2003	632724	4001915	Adult; on Plot 881
308	habitat		AmbTigPondCACH5-28-02	28 MAY 2002	666700	3997997	'Whiskey Reservoir' - Ambystoma site
309	habitat		BufPunPoolCACH5-24-03	24 MAY 2003	643511	4007596	trib. of C.d.Muerto with Bufo punctatus
310	habitat		CACH10102hab1	05 JUN 2003	649792	4012206	habitat photo of plot 10102
311	habitat		CACH10102hab2	05 JUN 2003	649792	4012206	habitat photo of plot 10102
312	habitat		CACH1010hab1	29 MAY 2003	632975	4000409	habitat photo of plot 1010
313	habitat		CACH1010hab2	29 MAY 2003	632975	4000409	habitat photo of plot 1010
314	habitat		CACH10563hab1	07 JUN 2002	650860	3992174	habitat photo of plot 10563
315	habitat		CACH10563hab2	07 JUN 2002	650860	3992174	habitat photo of plot 10563
316	habitat		CACH10584hab1	08 JUN 2002	650796	3997648	habitat photo of plot 10584
317	habitat		CACH10584hab2	08 JUN 2002	650796	3997648	habitat photo of plot 10584
318	habitat		CACH10584hab3	08 JUN 2002	650796	3997648	habitat photo of plot 11006
319	habitat		CACH11006hab1	23 MAY 2003	651487	4002116	habitat photo of plot 11006
320	habitat		CACH11006hab2	23 MAY 2003	651487	4002116	habitat photo of plot 11006
321	habitat		CACH11047hab1	05 JUN 2003	651549	4012206	habitat photo of plot 11047
322	habitat		CACH11047hab2	05 JUN 2003	651549	4012206	habitat photo of plot 11047
323	habitat		CACH11182hab1	05 JUN 2003	651800	4012206	habitat photo of plot 11182
324	habitat		CACH11182hab2	05 JUN 2003	651800	4012206	habitat photo of plot 11182
325	habitat		CACH11397hab1	08 JUN 2002	652302	3998401	habitat photo of plot 11397
326	habitat		CACH11397hab2	08 JUN 2002	652302	3998401	habitat photo of plot 11397
327	habitat		CACH11397hab3	08 JUN 2002	652302	3998401	habitat photo of plot 11397
328	habitat		CACH1149hab1	29 MAY 2003	633170	4001185	habitat photo of plot 1149

329	habitat		CACH1149hab2	29 MAY 2003	633170	4001185	habitat photo of plot 1149
330	habitat		CACH1151hab1	30 MAY 2003	633226	4001915	habitat photo of plot 1151
331	habitat		CACH1151hab2	30 MAY 2003	633226	4001915	habitat photo of plot 1151
332	habitat		CACH11936hab1	08 JUN 2002	653489	3998207	habitat photo of plot 11936
333	habitat		CACH11936hab2	08 JUN 2002	653489	3998207	habitat photo of plot 11936
335	habitat		CACH12828hab1	22 MAY 2002	655127	3984644	habitat photo of plot 12828
336	habitat		CACH12828hab2	22 MAY 2002	655127	3984644	habitat photo of plot 12828
337	habitat		CACH12880hab1	02 JUN 2002	655063	3997899	habitat photo of plot 12880
338	habitat		CACH12880hab2	02 JUN 2002	655063	3997899	habitat photo of plot 12880
339	habitat		CACH12964hab1	22 MAY 2002	655378	3984895	habitat photo of plot 12964
340	habitat		CACH12964hab2	22 MAY 2002	655378	3984895	habitat photo of plot 12964
342	habitat		CACH13013hab1	01 JUN 2002	655314	3997397	habitat photo of plot 13013
343	habitat		CACH13013hab2	01 JUN 2002	655314	3997397	habitat photo of plot 13013
344	habitat		CACH16188hab1	24 MAY 2003	661087	4014967	habitat photo of plot 16188
345	habitat		CACH16188hab2	24 MAY 2003	661087	4014967	habitat photo of plot 16188
346	habitat		CACH17082hab1	29 MAY 2002	662908	4001963	habitat photo of plot 17082
347	habitat		CACH17082hab2	29 MAY 2002	662908	4001963	habitat photo of plot 17082
348	habitat		CACH18162hab1	01 JUN 2002	664913	4002165	habitat photo of plot 18162
349	habitat		CACH18162hab2	01 JUN 2002	664913	4002165	habitat photo of plot 18162
350	habitat		CACH18537hab1	24 MAY 2002	665669	3994433	habitat photo of plot 18537
351	habitat		CACH18537hab2	24 MAY 2002	665669	3994433	habitat photo of plot 18537
352	habitat		CACH18694hab1	01 JUN 2002	665856	4000158	habitat photo of plot 18694
353	habitat		CACH18694hab2	01 JUN 2002	665856	4000158	habitat photo of plot 18694
354	habitat		CACH18817hab1	28 MAY 2002	666232	3996942	habitat photo of plot 18817
355	habitat		CACH18817hab2	28 MAY 2002	666232	3996942	habitat photo of plot 18817
356	habitat		CACH18957hab1	28 MAY 2002	666483	3998197	habitat photo of plot 18957
357	habitat		CACH18957hab2	28 MAY 2002	666483	3998197	habitat photo of plot 18957
358	habitat		CACH19365hab1	28 MAY 2002	667236	3998950	habitat photo of plot 19365
359	habitat		CACH19365hab2	28 MAY 2002	667236	3998950	habitat photo of plot 19365
360	habitat		CACH19385hab1	31 MAY 2002	667172	4004173	habitat photo of plot 19385
361	habitat		CACH19385hab2	31 MAY 2002	667172	4004173	habitat photo of plot 19385

362	habitat		CACH1955hab1	30 MAY 2003	634732	4000409	habitat photo of plot 1955
363	habitat		CACH1955hab2	30 MAY 2003	634732	4000409	habitat photo of plot 1955
364	habitat		CACH2097hab1	30 MAY 2003	634983	4002166	habitat photo of plot 2097
365	habitat		CACH2097hab2	30 MAY 2003	634983	4002166	habitat photo of plot 2097
366	habitat		CACH3443hab1	19 MAY 2003	637493	4001162	habitat photo of plot 3443
367	habitat		CACH3443hab2	19 MAY 2003	637493	4001162	habitat photo of plot 3443
368	habitat		CACH3980hab1	19 MAY 2003	638497	4000409	habitat photo of plot 3980
369	habitat		CACH3980hab2	19 MAY 2003	638497	4000409	habitat photo of plot 3980
370	habitat		CACH4123hab1	06 JUN 2003	638843	4002551	habitat photo of plot 4123
371	habitat		CACH4123hab2	06 JUN 2003	638843	4002551	habitat photo of plot 4123
372	habitat		CACH5055hab1	19 MAY 2003	640505	3999154	habitat photo of plot 5055
373	habitat		CACH5055hab2	19 MAY 2003	640505	3999154	habitat photo of plot 5055
374	habitat		CACH5179hab1	07 JUN 2003	640820	3996190	habitat photo of plot 5179
375	habitat		CACH5179hab2	07 JUN 2003	640820	3996190	habitat photo of plot 5179
376	habitat		CACH5340hab1	27 MAY 2003	641007	4002919	habitat photo of plot 5340
377	habitat		CACH5340hab2	27 MAY 2003	641007	4002919	habitat photo of plot 5340
378	habitat		CACH5343hab1	30 MAY 2003	641007	4003672	habitat photo of plot 5343
379	habitat		CACH5343hab2	30 MAY 2003	641007	4003672	habitat photo of plot 5343
380	habitat		CACH5881hab1	27 MAY 2003	642011	4003170	habitat photo of plot 5881
381	habitat		CACH5881hab2	27 MAY 2003	642011	4003170	habitat photo of plot 5881
382	habitat		CACH6284hab1	06 JUN 2003	642522	4002767	habitat photo of plot 6284
383	habitat		CACH6284hab2	06 JUN 2003	642522	4002767	habitat photo of plot 6284
384	habitat		CACH7244hab1	24 MAY 2003	644459	4006633	habitat photo of plot 7244
385	habitat		CACH7244hab2	24 MAY 2003	644459	4006633	habitat photo of plot 7244
386	habitat		CACH7503hab1	21 MAY 2003	645023	4003672	habitat photo of plot 7503
387	habitat		CACH7503hab2	21 MAY 2003	645023	4003672	habitat photo of plot 7503
388	habitat		CACH7897hab1	23 MAY 2003	645776	4000911	habitat photo of plot 7897
389	habitat		CACH7897hab2	23 MAY 2003	645776	4000911	habitat photo of plot 7897
390	habitat		CACH8051hab1	04 JUN 2003	645572	4005602	habitat photo of plot 8051
391	habitat		CACH8051hab2	04 JUN 2003	645572	4005602	habitat photo of plot 8051
392	habitat		CACH8406hab1	02 JUN 2003	646844	3992927	habitat photo of plot 8406

393	habitat		CACH8406hab2	02 JUN 2003	646844	3992927	habitat photo of plot 8406
394	habitat		CACH8447hab1	21 MAY 2003	646780	4003421	habitat photo of plot 8447
395	habitat		CACH8447hab2	21 MAY 2003	646780	4003421	habitat photo of plot 8447
396	habitat		CACH881hab1	29 MAY 2003	632724	4001915	habitat photo of plot 881
397	habitat		CACH881hab2	29 MAY 2003	632724	4001915	habitat photo of plot 881
398	habitat		CACH8820hab1	02 JUN 2002	647597	3995186	habitat photo of plot 8820
399	habitat		CACH8820hab2	02 JUN 2002	647597	3995186	habitat photo of plot 8820
400	habitat		CACH8990hab1	23 MAY 2003	647784	4004174	habitat photo of plot 8990
401	habitat		CACH8990hab2	23 MAY 2003	647784	4004174	habitat photo of plot 8990
402	habitat		CACH9154hab1	05 JUN 2003	647907	4011372	habitat photo of plot 9154
403	habitat		CACH9154hab2	05 JUN 2003	647907	4011372	habitat photo of plot 9154
404	habitat		CACH9922hab1	23 MAY 2003	649480	4001113	habitat photo of plot 9922
405	habitat		CACH9922hab2	23 MAY 2003	649480	4001113	habitat photo of plot 9922
406	habitat		CACHscenery1	18 AUG 2003	0	0	
407	habitat		CACHscenery2	05 JUN 2003	0	0	
408	habitat		CACHscenery3	29 MAY 2003	0	0	
409	habitat		CACHscenery4	29 MAY 2003	0	0	
410	habitat		CACHscenery5		0	0	
411	habitat		CACHscenery6	26 JUL 2003	0	0	
412	habitat		CACHscenery7	21 AUG 2003	0	0	
413	habitat		CACHscenery8		0	0	
414	habitat		CACHscenery9	25 JUL 2003	0	0	

Appendix C. Summary of documented locations of amphibians and reptiles at Canyon de Chelly National Monument in 2002-3, including date discovered and UTM data (Zone 12).

ID	Species	No. of Plots	Other Methods	First Date	Plot No	Easting	Northing
1	*Ambystoma tigrinum*	0 / 46	6	28 MAY 2002	n/a	666636	3998200
2	*Ambystoma tigrinum*	0 / 46	6	10 JUL 2003	n/a	653625	4002978
3	*Ambystoma tigrinum*	0 / 46	6	10 JUL 2003	n/a	652274	4001972
4	*Ambystoma tigrinum*	0 / 46	6	28 JUL 2003	n/a	664882	4003478
5	*Ambystoma tigrinum*	0 / 46	6	19 AUG 2003	n/a	635263	3998157
6	*Ambystoma tigrinum*	0 / 46	6	21 AUG 2003	n/a	635300	3998200
7	*Bufo punctatus*	1 / 46	8	24 MAY 2003	n/a	643511	4007596
8	*Bufo punctatus*	1 / 46	8	04 JUN 2003	n/a	647812	4011742
9	*Bufo punctatus*	1 / 46	8	04 JUN 2003	n/a	647749	4011482
10	*Bufo punctatus*	1 / 46	8	05 JUN 2003	n/a	649665	4012551
11	*Bufo punctatus*	1 / 46	8	12 AUG 2003	n/a	639018	4000980
12	*Bufo punctatus*	1 / 46	8	19 AUG 2003	n/a	635263	3998157
13	*Bufo punctatus*	1 / 46	8	21 AUG 2003	881	632724	4001915
14	*Bufo punctatus*	1 / 46	8	21 AUG 2003	n/a	632580	4001786
15	*Bufo punctatus*	1 / 46	8	21 AUG 2003	n/a	635300	3998200
16	*Bufo woodhousii*	1 / 46	14	25 MAY 2002	n/a	651286	3998079
18	*Bufo woodhousii*	1 / 46	14	07 JUN 2002	n/a	653949	3998240
19	*Bufo woodhousii*	1 / 46	14	10 JUL 2002	n/a	653983	3998451
20	*Bufo woodhousii*	1 / 46	14	05 AUG 2002	18694	665856	4000158
21	*Bufo woodhousii*	1 / 46	14	12 AUG 2002	n/a	655773	3997479
22	*Bufo woodhousii*	1 / 46	14	20 AUG 2002	n/a	652390	3997779
23	*Bufo woodhousii*	1 / 46	14	24 MAY 2003	n/a	661291	4015072
24	*Bufo woodhousii*	1 / 46	14	30 MAY 2003	n/a	636103	4000216
25	*Bufo woodhousii*	1 / 46	14	04 JUN 2003	n/a	647807	4011632
26	*Bufo woodhousii*	1 / 46	14	05 JUN 2003	n/a	649697	4012217
27	*Bufo woodhousii*	1 / 46	14	10 JUL 2003	n/a	653625	4002978
28	*Bufo woodhousii*	1 / 46	14	10 JUL 2003	n/a	652274	4001972
29	*Bufo woodhousii*	1 / 46	14	21 JUL 2003	n/a	647729	4011360
30	*Bufo woodhousii*	1 / 46	14	21 JUL 2003	n/a	648510	4012950
31	*Bufo woodhousii*	1 / 46	14	19 AUG 2003	n/a	635263	3998157
32	*Cnemidophorus tigris*	1 / 46	1	21 MAY 2002	n/a	648129	3996623
33	*Cnemidophorus tigris*	1 / 46	1	18 JUL 2003	2097	634983	4002166
34	*Cnemidophorus velox*	20 / 46	n/a	05 JUN 2002	11047	651549	4012206
35	*Cnemidophorus velox*	20 / 46	n/a	08 JUN 2002	10584	650796	3997648
36	*Cnemidophorus velox*	20 / 46	n/a	08 JUN 2002	11397	652302	3998401
37	*Cnemidophorus velox*	20 / 46	n/a	09 JUL 2002	10563	650860	3992174
38	*Cnemidophorus velox*	20 / 46	n/a	09 JUL 2002	12964	655378	3984895

ID	Species	No. of Plots	Other Methods	First Date	Plot No	Easting	Northing
39	*Cnemidophorus velox*	20 / 46	n/a	12 JUL 2002	8820	647597	3995186
40	*Cnemidophorus velox*	20 / 46	n/a	09 AUG 2002	12880	655063	3997899
41	*Cnemidophorus velox*	20 / 46	n/a	09 AUG 2002	13013	655314	3997397
42	*Cnemidophorus velox*	20 / 46	n/a	30 MAY 2003	1151	633226	4001915
43	*Cnemidophorus velox*	20 / 46	n/a	30 MAY 2003	1955	634732	4000409
44	*Cnemidophorus velox*	20 / 46	n/a	02 JUN 2003	8406	646844	3992927
45	*Cnemidophorus velox*	20 / 46	n/a	05 JUN 2003	9154	647907	4011372
46	*Cnemidophorus velox*	20 / 46	n/a	06 JUN 2003	4123	638843	4002551
47	*Cnemidophorus velox*	20 / 46	n/a	16 JUL 2003	5343	641007	4003672
48	*Cnemidophorus velox*	20 / 46	n/a	22 JUL 2003	11182	651800	4012206
49	*Cnemidophorus velox*	20 / 46	n/a	23 JUL 2003	8051	645572	4005602
50	*Cnemidophorus velox*	20 / 46	n/a	13 AUG 2003	5055	640505	3999154
51	*Cnemidophorus velox*	20 / 46	n/a	13 AUG 2003	5179	640820	3996190
52	*Cnemidophorus velox*	20 / 46	n/a	19 AUG 2003	5340	641007	4002919
53	*Cnemidophorus velox*	20 / 46	n/a	26 AUG 2003	10102	649792	4012206
54	*Crotalus viridis*	3 / 46	0	02 JUN 2002	8406	646844	3992927
55	*Crotalus viridis*	3 / 46	0	07 JUN 2002	10563	650860	3992174
56	*Crotalus viridis*	3 / 46	0	12 AUG 2002	17082	662908	4001963
57	*Crotaphytus collaris*	3 / 46	3	13 AUG 2002	5179	640820	3996190
58	*Crotaphytus collaris*	3 / 46	3	19 MAY 2003	3443	637493	4001162
59	*Crotaphytus collaris*	3 / 46	3	24 MAY 2003	n/a	643311	4006972
60	*Crotaphytus collaris*	3 / 46	3	30 MAY 2003	n/a	635547	4003185
61	*Crotaphytus collaris*	3 / 46	3	17 JUL 2003	1010	632975	4000409
62	*Crotaphytus collaris*	3 / 46	3	19 AUG 2003	n/a	641838	4003351
63	*Eumeces multivirgatus*	2 / 46	1	08 JUL 2002	18957	666483	3998197
64	*Eumeces multivirgatus*	2 / 46	1	05 JUN 2003	11047	651549	4012206
65	*Eumeces multivirgatus*	2 / 46	1	15 JUL 2003	n/a	660604	4015062
66	*Hyla arenicolor*	2 / 46	8	07 JUN 2002	n/a	654050	3998235
67	*Hyla arenicolor*	2 / 46	8	07 JUN 2002	n/a	654651	3998406
68	*Hyla arenicolor*	2 / 46	8	08 JUN 2002	11397	652302	3998401
69	*Hyla arenicolor*	2 / 46	8	05 AUG 2002	n/a	654136	3998353
70	*Hyla arenicolor*	2 / 46	8	10 JUL 2002	n/a	653983	3998451
71	*Hyla arenicolor*	2 / 46	8	27 MAY 2003	5881	642011	4003170
72	*Hyla arenicolor*	2 / 46	8	04 JUN 2003	n/a	647812	4011742
73	*Hyla arenicolor*	2 / 46	8	21 JUL 2003	n/a	647729	4011360
74	*Hyla arenicolor*	2 / 46	8	26 JUL 2003	n/a	647200	3992700
75	*Hyla arenicolor*	2 / 46	8	12 AUG 2003	n/a	639018	4000980
76	*Masticophis taeniatus*	0 / 46	1	17 JUL 2003	n/a	640430	4002007
77	*Phrynosoma hernandesi*	3 / 46	2	05 AUG 2002	18162	664913	4002165
78	*Phrynosoma hernandesi*	3 / 46	2	05 AUG 2002	19385	667172	4004173
79	*Phrynosoma hernandesi*	3 / 46	2	08 JUL 2002	19365	667236	3998950
80	*Phrynosoma hernandesi*	3 / 46	2	08 JUL 2002	n/a	667509	3999674

ID	Species	No. of Plots	Other Methods	First Date	Plot No	Easting	Northing
81	*Phrynosoma hernandesi*	3 / 46	2	12 JUL 2002	n/a	646502	3993818
82	*Pituophis catenifer*	1 / 46	1	19 MAY 2003	3980	638497	4000409
83	*Pituophis catenifer*	1 / 46	1	22 JUL 2003	n/a	646708	4008180
84	*Sceloporus graciosus*	9 / 46	n/a	27 MAY 2003	5340	641007	4002919
85	*Sceloporus graciosus*	9 / 46	n/a	29 MAY 2003	1149	633170	4001185
86	*Sceloporus graciosus*	9 / 46	n/a	30 MAY 2003	5343	641007	4003672
87	*Sceloporus graciosus*	9 / 46	n/a	04 JUN 2003	8051	645572	4005602
88	*Sceloporus graciosus*	9 / 46	n/a	05 JUN 2003	11047	651549	4012206
89	*Sceloporus graciosus*	9 / 46	n/a	05 JUN 2003	11182	651800	4012206
90	*Sceloporus graciosus*	9 / 46	n/a	08 JUN 2003	11397	652302	3998401
91	*Sceloporus graciosus*	9 / 46	n/a	14 AUG 2003	7503	645023	4003672
92	*Sceloporus graciosus*	9 / 46	n/a	21 AUG 2003	1195	634732	4000409
93	*Sceloporus undulatus*	34 / 46	n/a	22 MAY 2002	12964	655378	3984895
94	*Sceloporus undulatus*	34 / 46	n/a	24 MAY 2002	18537	665669	3994433
95	*Sceloporus undulatus*	34 / 46	n/a	28 MAY 2002	18957	666483	3998197
96	*Sceloporus undulatus*	34 / 46	n/a	01 JUN 2002	13013	655314	3997397
97	*Sceloporus undulatus*	34 / 46	n/a	01 JUN 2002	18694	665856	4000158
98	*Sceloporus undulatus*	34 / 46	n/a	02 JUN 2002	8406	646844	3992927
99	*Sceloporus undulatus*	34 / 46	n/a	02 JUN 2002	8820	647597	3995186
100	*Sceloporus undulatus*	34 / 46	n/a	02 JUN 2002	12880	655063	3997899
101	*Sceloporus undulatus*	34 / 46	n/a	07 JUN 2002	5179	640820	3996190
102	*Sceloporus undulatus*	34 / 46	n/a	08 JUN 2002	10584	650796	3997648
103	*Sceloporus undulatus*	34 / 46	n/a	08 JUN 2002	11397	652302	3998401
104	*Sceloporus undulatus*	34 / 46	n/a	08 JUN 2002	11936	653489	3998207
105	*Sceloporus undulatus*	34 / 46	n/a	09 JUL 2002	12828	655127	3984644
106	*Sceloporus undulatus*	34 / 46	n/a	06 AUG 2002	18817	666232	3996942
107	*Sceloporus undulatus*	34 / 46	n/a	07 AUG 2002	10563	650860	3992174
108	*Sceloporus undulatus*	34 / 46	n/a	12 AUG 2002	17082	662908	4001963
109	*Sceloporus undulatus*	34 / 46	n/a	19 MAY 2003	5055	640505	3999154
110	*Sceloporus undulatus*	34 / 46	n/a	21 MAY 2003	7503	645023	4003672
111	*Sceloporus undulatus*	34 / 46	n/a	23 MAY 2003	8990	647784	4004174
112	*Sceloporus undulatus*	34 / 46	n/a	29 MAY 2003	881	632724	4001915
113	*Sceloporus undulatus*	34 / 46	n/a	30 MAY 2003	1955	634732	4000409
114	*Sceloporus undulatus*	34 / 46	n/a	30 MAY 2003	2097	634983	4002166
115	*Sceloporus undulatus*	34 / 46	n/a	05 JUN 2003	9154	647907	4011372
116	*Sceloporus undulatus*	34 / 46	n/a	05 JUN 2003	10102	649792	4012206
117	*Sceloporus undulatus*	34 / 46	n/a	05 JUN 2003	11047	651549	4012206
118	*Sceloporus undulatus*	34 / 46	n/a	05 JUN 2003	11182	651800	4012206
119	*Sceloporus undulatus*	34 / 46	n/a	06 JUN 2003	4123	638843	4002551
120	*Sceloporus undulatus*	34 / 46	n/a	06 JUN 2003	6284	642522	4002767
121	*Sceloporus undulatus*	34 / 46	n/a	10 JUL 2003	3443	637493	4001162
122	*Sceloporus undulatus*	34 / 46	n/a	11 JUL 2003	9922	649480	4001113

ID	Species	No. of Plots	Other Methods	First Date	Plot No	Easting	Northing
123	*Sceloporus undulatus*	34 / 46	n/a	14 JUL 2003	8447	646780	4003421
124	*Sceloporus undulatus*	34 / 46	n/a	18 JUL 2003	1151	633226	4001915
125	*Sceloporus undulatus*	34 / 46	n/a	19 AUG 2003	1010	632975	4000409
126	*Sceloporus undulatus*	34 / 46	n/a	19 AUG 2003	5881	642011	4003170
127	*Spea bombifrons*	0 / 46	1	05 AUG 2002	n/a	667119	3998803
128	*Spea multiplicata*	0 / 46	8	13 AUG 2002	n/a	647109	3992635
129	*Spea multiplicata*	0 / 46	8	26 JUL 2003	n/a	647200	3992700
130	*Spea multiplicata*	0 / 46	8	28 JUL 2003	n/a	664882	4003478
131	*Spea multiplicata*	0 / 46	8	28 JUL 2003	n/a	668116	3999752
132	*Spea multiplicata*	0 / 46	8	12 AUG 2003	n/a	641941	3999607
133	*Spea multiplicata*	0 / 46	8	14 AUG 2003	n/a	641891	4000094
134	*Spea multiplicata*	0 / 46	8	19 AUG 2003	n/a	635263	3998157
135	*Spea multiplicata*	0 / 46	8	21 AUG 2003	n/a	642538	3993709
136	*Thamnophis elegans*	3 / 46	6	05 AUG 2002	n/a	665468	3997027
137	*Thamnophis elegans*	3 / 46	6	06 AUG 2002	18957	666483	3998197
138	*Thamnophis elegans*	3 / 46	6	12 AUG 2002	n/a	665685	3997257
139	*Thamnophis elegans*	3 / 46	6	24 MAY 2003	n/a	661291	4015072
140	*Thamnophis elegans*	3 / 46	6	30 MAY 2003	n/a	633112	4001803
141	*Thamnophis elegans*	3 / 46	6	05 JUN 2003	11047	651549	4012206
142	*Thamnophis elegans*	3 / 46	6	15 JUL 2003	n/a	660604	4015062
143	*Thamnophis elegans*	3 / 46	6	21 JUL 2003	n/a	647807	4011632
144	*Thamnophis elegans*	3 / 46	6	26 AUG 2003	11182	651800	4012206
145	*Urosaurus ornatus*	6 / 46	1	08 JUN 2002	11397	652302	3998401
146	*Urosaurus ornatus*	6 / 46	1	09 AUG 2002	12880	655063	3997899
147	*Urosaurus ornatus*	6 / 46	1	21 AUG 2002	10584	650796	3997648
148	*Urosaurus ornatus*	6 / 46	1	04 JUN 2003	n/a	644108	4001777
149	*Urosaurus ornatus*	6 / 46	1	05 JUN 2003	10102	649792	4012206
150	*Urosaurus ornatus*	6 / 46	1	10 JUL 2003	3443	637493	4001162
151	*Urosaurus ornatus*	6 / 46	1	23 JUL 2003	4123	638843	4002551
152	*Uta stansburiana*	10 / 46	n/a	08 JUN 2002	10584	650796	3997648
153	*Uta stansburiana*	10 / 46	n/a	08 JUN 2002	11397	652302	3998401
154	*Uta stansburiana*	10 / 46	n/a	27 MAY 2003	5881	642011	4003170
155	*Uta stansburiana*	10 / 46	n/a	29 MAY 2003	881	632724	4001915
156	*Uta stansburiana*	10 / 46	n/a	18 JUL 2003	2097	634983	4002166
157	*Uta stansburiana*	10 / 46	n/a	13 AUG 2003	3443	637493	4001162
158	*Uta stansburiana*	10 / 46	n/a	13 AUG 2003	5055	640505	3999154
159	*Uta stansburiana*	10 / 46	n/a	14 AUG 2003	7503	645023	4003672
160	*Uta stansburiana*	10 / 46	n/a	19 AUG 2003	1010	632975	4000409
161	*Uta stansburiana*	10 / 46	n/a	25 AUG 2003	8051	645572	4005602

Appendix D. Specimens collected and corresponding pertinent information during 2002 – 03 at Canyon de Chelly National Monument.

Ambystoma tigrinum (larvae); Apache Co., Canyon de Chelly Nat. Monum., 0.8 mi. southeast of Whiskey Creek and Coyote Wash confluence at "Whiskey Reservoir", elev. 7080 ft.; 28-V-2002, coll./prep.: D.Mikesic; TL 240.9 mm; UTM: 12S 666700 3997997.

Bufo woodhousii (adult); Apache Co., Whiskey Creek of Canyon de Chelly Nat. Monum., 0.2 mi. downstream (west) of confluence Mule Canyon with Whiskey Creek, elev. 6000 ft.; 07-VI-2002, coll./prep.: D.Mikesic. UTM: 12S 654072 3998556.

Bufo woodhousii (4 larva); Apache Co., Whiskey Creek of Canyon de Chelly Nat. Monum., 1.7 mi. upstream (east) of Spider Rock, elev. 5920 ft.; 25-V-2002, coll./prep.: D.Mikesic; UTM: 12S 651286 3998079.

Hyla arenicolor (adult); Apache Co., Whiskey Creek of Canyon de Chelly Nat. Monum., 0.2 mi. upstream (east) of confluence Mule Canyon with Whiskey Creek, elev. 6000 ft.; 07-VI-2002, coll./prep.: D.Mikesic; UTM: 12S 654651 3998406.

Sceloporus undulatus (adult); Apache Co., Whiskey Creek of Canyon de Chelly Nat. Monum., 4.0 mi. upstream (east) of Spider Rock, on overlook just above Mule Canyon elev. 7060 ft.; 02-VI-2002, coll./prep.: D.Mikesic; SVL 67.6 mm; UTM: 12S 655063 3997899.

Spea sp. (2 larva); Apache Co., Whiskey Creek of Canyon de Chelly Nat. Monum., stock pond of west edge of Bat Canyon of CACH, 2.5 mi. SSW of Spider Rock Overlook, elev. 6660 ft.; 13-VIII-2002, coll./prep.: D.Mikesic; UTM: 12S 657109 3992635.

Urosaurus ornatus (adult); Apache Co., Whiskey Creek of Canyon de Chelly Nat. Monum., 2.5 mi. upstream (east) of Spider Rock, elev. 5980 ft.; 08-VI-2002, coll./prep.: D. Mikesic; SVL: 48.7 mm; UTM: 12S 652302 3998401.