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# Atlas of Amphibians and Reptiles in Florida

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Abstract: We compiled a total of 134,404 vouchered records (specimens or photographs) of Florida amphibians and reptiles from 58 museums or other institutions. We supplemented these records with 43,319 unvouchered or unverified records from the scientific and popular literature, reports, and credible survey databases. Whenever possible, questionable vouchers were examined by the authors or by staff of the institutions where the specimens were housed, and corrections were made when needed. Unverified records could not be examined, and we excluded unverified records considered to be of unlikely validity. We georeferenced all records and then used these data to generate distributional maps for the 142 native and 56 non-native species of amphibians and reptiles known to occur in Florida. Maps for each species are accompanied by the species current scientific and common names, a brief discussion of its geographic distribution (including the number of vouchered records and counties in which it has been found, potential counties of occurrence, and/or identification errors), earliest known voucher, and taxonomy (if changed recently). Discussion of the physiography, climate, river drainages, biogeography, habitats, and ecoregions of Florida provides context for understanding patterns of distribution of the Florida herpetofauna.

Key words: amphibians, reptiles, species, geographic distribution, maps, taxonomy, vouchers

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#### INTRODUCTION

The state of Florida currently has at least 142 recognized native and 56 established (reproducing), non-native amphibians and reptiles (herpetofauna). These numbers represent a snapshot in time, because new species continue to be described and/or found in Florida. Relatively few new species are added whose geographic ranges are found to extend into Florida, although the spotted salamander (*Ambystoma maculatum* [Shaw 1802]) may be confirmed in Florida in the future. Most new native species will be added to Florida's list as research, particularly phylogenetics, splits existing recognized species into multiple species or elevates current subspecies to full species status. If current trends continue, more non-native species will be introduced into Florida (Krysko et al. 2011), and some of these will establish breeding populations, possibly to the detriment of native species.

Florida's high herpetofaunal diversity is partly due to the state extending ca. 700 km eastwest and north-south, which enables it to encompass the ranges of species from the north and both the Atlantic and Gulf Coastal Plains, as well as some Caribbean species. In addition to being located in an area of confluence, Florida also has many endemic taxa: southern dwarf siren (Pseudobranchus axanthus), Gulf Hammock dwarf siren (P. striatus lustricolus), Florida bog frog (Lithobates okaloosae), Florida chicken turtle (Deirochelys reticularia chrysea), 3 subspecies of diamondback terrapin (Malaclemys terrapin ssp.), peninsula cooter (Pseudemys floridana peninsularis), 4 subspecies of mole skink (Plestiodon egregius ssp.), sand skink (P. reynoldsi), Florida scrub lizard (Sceloporus woodi), Florida reef gecko (Sphaerodactylus notatus notatus), Florida scarlet snake (Cemophora coccinea coccinea), 2 subspecies of eastern racer (Coluber constrictor ssp.), Key ringneck snake (Diadophis punctatus acricus), South Florida rainbow snake (Farancia erytrogramma seminola), South Florida mole kingsnake (Lampropeltis calligaster occipitolineata), short-tailed snake (L. extenuata), 2 subspecies of common kingsnake (L. getula), 2 subspecies of salt marsh snake (Nerodia clarkii ssp.), South Florida swamp snake (Seminatrix pygaea cyclas), Rim Rock crowned snake (Tantilla oolitica), 2 subspecies of Florida crowned snake (T. relicta ssp.), bluestripe ribbon snake (Thamnophis sauritus nitae), and bluestripe garter snake (*T. sirtalis similis*). Florida has more non-native herpetofaunal species than any other state because of its warm climate, favorable natural and human-altered habitats for establishment of non-native populations, and large number of reptile importers and dealers.

Florida has a long history of herpetological collection by scientists and enthusiasts, and the geographic distributions of many species are well known, although some counties have been under surveyed. However, this distributional information is spread out among many institutional collections, literature (scientific, popular, and gray literature reports), and unpublished databases. Prior to creation of this Atlas of Amphibians and Reptiles of Florida, persons wanting geographic distributional records for Florida herpetofauna had to refer to the Handbooks of Reptiles and Amphibians of Florida by Ashton and Ashton (1985, 1988a, 1988b), which provided only county occurrences, were out of date, and contained errors. This new atlas provides current geographic distributional records for both native and non-native established species, differentiating between vouchers (preserved specimens and photographs curated in systematic collections) and unverified records, and providing more detailed locality information than just a single dot placed in the center of a county.

Georeferencing of specimens in systematic collections is important for recognizing biodiversity around the world and for assisting researchers in conservation biology, ecology, phylogenetics, and biodiversity informatics. Georeferencing of taxa and regions by the herpetological community was initially funded through a National Science Foundation project (NSF No. 0132303) called HerpNet, which ended in April 2008. On 1 July 2008, the authors of this atlas continued the initial project at the Florida Museum of Natural History (FLMNH), University of Florida (UF), by working on a 3-year State Wildlife Grant entitled "Georeferencing Locality Records for Amphibians and Reptiles of Florida" that enabled completion of this project for Florida and produced this publication. Each account for a species contains a brief discussion of its geographic distribution and problematic records, recent changes or problems in taxonomy, at least 1 photograph, and a detailed distribution map.

### **Historical Perspective**

Many herpetologists, research scientists, and hobbyists have spent some or all of their careers in Florida, which has a long history of specimen collection for natural history museums and other research collections. The University of Florida in Gainesville has been a particular hotbed of herpetological activity mainly because of FLMNH's Division of Herpetology research and teaching collection. An attempt has been made below to identify the main persons responsible for increasing our knowledge of the distribution of herpetofaunal species in Florida. Many other people have contributed immensely to our knowledge of species, but they have collected few specimens, published little on the distribution of Florida species, or worked primarily on a single species. We hope that we have not omitted significant contributors and that no one takes offense if his or her name does not appear below. Names are presented in approximate chronological order, and frequent collaborators are discussed together. For major contributors, only their education and careers in Florida are typically mentioned.

Edward Drinker Cope (1840–1897) published ca. 1,400 papers, including "On the snakes of Florida" in 1888. He described 4 anuran, 1 salamander, 5 lizard, and 5 snake taxa that occur in Florida.

Thomas Barbour (1884–1946) was born in Melbourne, Florida, and became director of the Museum of Comparative Zoology at Harvard University. He authored 2 books on Florida, including "That Vanishing Eden" (1944), and numerous distributional notes.

Albert H. Wright (1879–1970) and Anna A. Wright conducted surveys in the Okefenokee Swamp and published several books summarizing known information on amphibians and reptiles, including "Handbook of Frogs and Toads" (1949) and "Handbook of Snakes of the United States and Canada" (1957). Albert Wright also described the river frog (*Lithobates heckscheri*).

William J. Riemer served as the first full-time Curator of Herpetology (1955–1963) at the Florida State Museum (FSM), which was later renamed FLMNH. Many of his contributions to distributions of Florida herpetofauna dealt with collections management, and he added many specimens, particularly from the Florida panhandle.

Archie F. Carr, Jr. (1909–1987) received his Ph.D. from UF working on "The geographic and ecological distribution of reptiles and amphibians of Florida," which became the basis for "A

contribution to the herpetology of Florida" (1940). Carr spent his career as a zoology professor at UF and published numerous articles and books, including "Handbook of Turtles: The Turtles of the United States, Canada, and Baja California" in 1952. He described or co-described the Georgia blind salamander (*Eurycea wallacei*), peninsula cooter, Suwannee cooter (*P. concinna suwanniensis*), Florida redbelly turtle (*Pseudemys nelsoni*), and Barbour's map turtle (*Graptemys barbouri*). He contributed many sea turtle specimens, particularly young turtles. Because of his dedication to sea turtle conservation, The Archie Carr Center for Sea Turtle Research was created in 1986.

Coleman J. Goin (1911–1986) was born in Gainesville, Florida, and received his M.S. and Ph.D. at UF working on the dwarf siren (*Pseudobranchus* spp.) and non-native greenhouse frog (*Eleutherodactylus planirostris*), and he later taught zoology there with his wife, Olive B. Goin. He published numerous papers on Florida herpetofauna, including "Comments upon the origin of the herpetofauna of Florida" in 1958. With Carr, he published the book "A Guide to the Reptiles, Amphibians and Fresh-water Fishes of Florida" in 1955. He described or co-described the reticulated flatwoods salamander (*Ambystoma bishopi*), narrow-striped dwarf siren (*Pseudobranchus a. axanthus*), slender dwarf siren (*P. striatus spheniscus*), and rusty mud salamander (*Pseudotriton montanus floridanus*).

Henry M. Stevenson (1914–1991) was a biology professor at Florida State University (FSU), and although primarily interested in birds, he published 4 distributional notes on Florida herpetofauna and the book "Vertebrates of Florida" in 1976. George R. Zug received his M.S. from UF working on turtle genitalia and began serving as Curator of Herpetology at the Smithsonian National Museum of Natural History (USNM) in 1975. Arnold B. Grobman joined the Department of Biology at UF in 1946 and served as the Director of the FSM from 1952 through 1959. He collected many specimens and named the Florida rough green snake (*Opheodrys aestivus carinatus*). Stevenson, Zug, and Grobman collected many specimens that contributed to distributions of Florida herpetofauna.

Wilfred T. Neill (1922–2001) joined Ross Allen's Reptile Institute in Silver Springs as the Director of Research in 1949 and collaborated with E. Ross Allen on 50+ popular or scientific articles dealing with Florida herpetofauna. They described the southeastern slimy salamander (*Plethodon grobmani*), and Wilfred Neill described the Everglades rat snake (formerly *Elaphe obsoleta rossalleni*), Gulf Hammock dwarf siren, South Florida rainbow snake, and one-toed amphiuma (*Amphiuma pholeter*). Neill also wrote several important publications on geographic distribution, including "Ranges and taxonomic allocations of amphibians and reptiles in the southeastern United States" (1954), "Historical biogeography of present-day Florida" (1957), and "The occurrence of amphibians and reptiles in saltwater areas, and a bibliography" (1958). Ross Allen (1908–1981) helped popularize amphibians and reptiles and published an additional 40 articles. With Neill, they deposited some of the ERA-WTN collection to the FLMNH.

Albert Schwartz (1923–1992) received his M.S. from the University of Miami (UM) and taught biology at Miami-Dade Community College from 1967 to 1988. He was best known for studying West Indian reptiles, but he also collected and published on Florida herpetofauna. Schwartz described the Everglades dwarf siren (*Pseudobranchus axanthus belli*), Florida East Coast diamondback terrapin (*Malaclemys terrapin tequesta*), and Florida chicken turtle. With William E. Duellman, he described the peninsula newt (*Notopthalmus viridescens piaropicola*) and published "Amphibians and reptiles of southern Florida" in 1958.

Richard Highton received his M.S. and Ph.D. at UF working on *Plethodon* before leaving for more productive salamander hunting grounds. He published on systematics of the short-tailed snake and collected many specimens. Charles W. Myers received his M.S. from UF working on the pine woods snake (*Rhadinaea flavilata*) and was Herpetology Research Assistant (former name for Collection Manager) at the FSM in 1958–1960. He collected many specimens and in 1968 joined the Department of Herpetology at the American Museum of Natural History.

George H. Dalrymple (1948–2005), biology professor at Florida International University (FIU) from 1980 through 1998, contributed greatly to collections and our knowledge in the Everglades and surrounding region. Larry David Wilson and Louis Porras published "The Ecological Impact of Man on the South Florida Herpetofauna" in 1983, which provided distributional information on non-native species. Richard M. Blaney collected many specimens and published "An annotated checklist and biogeographic analysis of the insular herpetofauna of the Apalachicola Region, Florida" in 1977. Robert H. Mount received his Ph.D. from UF working on mole skinks, and he described 2 of the subspecies before leaving to teach at Auburn University and write "The Reptiles and Amphibians of Alabama" (1975).

Walter Auffenberg (1928–2004) received his Ph.D. from UF working on fossil snakes of Florida and served as Curator of Herpetology and Emeritus Distinguished Research Curator (1963–1991) at FSM. Many of his Florida publications dealt with fossil amphibians and reptiles, but he described the brownchin (*Coluber constrictor helvigularis*) and Everglades (*C. c. paludicola*) racers, published a paper on "herpetogeography" of Florida in 1982, and collected many specimens.

F. Wayne King received his Ph.D. from UM working on anoles (*Anolis*) and later served as Director (1979–1986) and Curator of Herpetology (1986–2007) at FLMNH. Many of his contributions to distributions of Florida herpetofauna dealt with collections and non-native species, such as "The exotic herpetofauna of Southeast Florida," which he co-authored with Thomas Krakauer in 1966. Krakauer got his M.S. from UM on the ecology of the cane toad (*Rhinella marina*) and his Ph.D. from UF on water loss in snakes.

Sam R. Telford, Jr., received his M.S. from UF working on intestinal protozoan inquilines of squamates, and he described the Florida and Rim Rock crowned snakes. John B. Iverson, who received his M.S. and Ph.D. from UF, primarily published on turtles, including "The distributions of the turtles of Florida" in 1989. Douglas A. Rossman received his Ph.D. from UF working on a revision of ribbon snakes and served as Curator of Herpetology at the Louisiana Museum of Natural History, Louisiana State University (LSUMZ). Telford, Iverson, and Rossman collected many specimens that contributed to distributions of Florida herpetofauna.

Stephen P. Christman and Howard W. "Duke" Campbell (1935–1981) worked for the U.S. Fish and Wildlife Service's (USFWS) National Ecological Research Laboratory in Gainesville, where they conducted herpetofaunal surveys (often using drift fences) in the areas of the proposed Cross Florida Barge Canal, Osceola National Forest, and St. Marks National Wildlife Refuge. Christman received his Ph.D. from UF working on "Patterns of geographic variation in Florida snakes" and conducted surveys of the Lake Wales Ridge, prepared many of the species accounts for the 1992 book "Rare and Endangered Biota of Florida," and published numerous distributional notes. Campbell published several distributional notes, along with survey reports.

Charles R. Smith and Howard I. Kochman collaborated with Christman and Campbell on USFWS surveys and collected many specimens.

D. Bruce Means received his M.S. and Ph.D. from FSU working on dusky salamanders (*Desmognathus* spp.) and later served as Director of Tall Timbers Research Station in Tallahassee (1978–1984), President and Executive Director of Coastal Plains Research Institute (1984–present), and adjunct biology professor at FSU (1989–present). Means conducted drift-fence and dipnet surveys in the Panhandle, collected many specimens, and published prolifically, including many distributional notes and "Aspects of the significance to terrestrial vertebrates of the Apalachicola River drainage basin, Florida" (1977). He helped describe the Apalachicola dusky salamander (*D. apalachicolae*) and prepared many of the species accounts for the 1992 book "Rare and Endangered Biota of Florida."

Paul E. Moler received his M.S. from UF working on the brown water snake (*Nerodia taxispilota*) and worked as a herpetologist for the Florida Game and Fresh Water Fish Commission (later renamed the Florida Fish and Wildlife Conservation Commission [FWC]) from 1977 to 2006. He conducted surveys for the Pine Barrens treefrog, alligator snapping turtle (*Macrochelys temminckii*), Barbour's map turtle, American crocodile (*Crocodylus acutus*), and sirenid salamanders. Moler described the Florida bog frog and collaborated on splitting the dwarf siren (*Pseudobranchus* spp.) into 2 species. He has published many distributional notes and was editor of the 1992 book "Rare and Endangered Biota of Florida. Volume III. Amphibians and Reptiles."

L. Richard Franz worked at the FLMNH, collected many specimens, and conducted several herpetofaunal surveys, including a distributional report with Lora L. Smith on the gopher frog (*Lithobates capito*) and striped newt (*Notophthalmus perstriatus*). J. Steve Godley received his M.A. from the University of South Florida (USF) working on the striped crayfish snake (*Regina alleni*). He collected many specimens, conducted surveys, and published distributional notes.

Llewellyn M. Ehrhart, biology professor at the University of Central Florida (UCF) (1969–2004), and his many students have contributed greatly to our knowledge of the distribution of sea turtles in terms of nesting and use of nearshore and offshore waters. Other notable sea turtle biologists and their current affiliations are Anne B. Meylan (FWC), Blair E. Witherington (FWC), Allen M. Foley (FWC), Karen A. Bjorndal (UF), Alan B. Bolten (UF), Barbara A. Schroeder (National Marine Fisheries Service), and Jeffrey R. Schmid (Conservancy of Southwest Florida).

Ray E. Ashton, Jr. (1945–2010), compiled "County records of reptiles and amphibians in Florida" in 1976, and along with Patricia S. Ashton, wrote the 3-volume set "Handbook of Reptiles and Amphibians of Florida" in 1981–1985. These books had maps showing county records for each species. Until 2011, these books were some of the best sources for information on distribution of species in Florida.

Peter A. Meylan received his M.S. and Ph.D. from UF working on fossil reptiles and soft-shelled turtles (*Apalone* spp.), and served as Herpetology Collection Manager at FLMNH (1974–1985) before teaching biology at Eckerd College (1989–present). Meylan published numerous distributional records and was the editor of the 2006 book "Biology and Conservation of Florida Turtles."

Dale R. Jackson received his Ph.D. from UF working on fossil turtles, and worked for the Florida Natural Areas Inventory (FNAI) (1981–present). Notable biologists who conducted and published herpetofaunal surveys while with FNAI include Dan L. Hipes, David Printiss, John G. Palis, and John B. Jensen. Jackson, Palis, and Jensen have also published distributional notes and collected many specimens.

C. Kenneth Dodd, Jr. worked as a research zoologist at the USFWS's National Ecological Research Lab, which later became the U.S. Geological Survey's (USGS) Southeastern Amphibian and Reptile Monitoring Initiative (SEARMI), where he was Project Leader (1984–2007). Dodd conducted surveys at Ordway-Swisher Biological Station, Egmont Key, and various national wildlife refuges, and has published extensively. William J. Barichivich, Jennifer S. Staiger, and Margaret Gunzburger collaborated on SEARMI surveys.

Henry R. Mushinsky and Earl D. McCoy in the Biology Department at USF conducted surveys, particularly in scrub and sandhill habitats. David L. Auth, who received his M.S. and Ph.D. from UF and served as Herpetology Collection Manager at FLMNH (1985–1999), published a few distributional records. James D. "Skip" Lazell, Jr. wrote "Wildlife of the Florida Keys: A Natural History" in 1989.

Kevin M. Enge received his M.S. from UF conducting a drift-fence survey in Bradford County, and has worked as a herpetologist for FWC (1989–present). Enge has conducted many drift-fence and dipnet surveys and has published a plethora of reports and distributional notes, including ones on non-native species. Enge collaborated with Kristin N. Wood (FWC) on drift-fence surveys of several wildlife management areas. Dirk J. Stevenson, David Crowe, and James C. Godwin worked for FWC (1990–1991) conducting surveys of various watersheds, and they published numerous county records and collected many specimens.

Kenneth L. Krysko received his M.S. from FIU and his Ph.D. from UF working on the ecology and molecular systematics of kingsnakes (*Lampropeltis getula* complex). He served as Herpetology Collection Manager at FLMNH (1999–present) and co-authored the description of the Apalachicola Lowlands kingsnake (*L. g. meansi*). Krysko has published numerous distributional notes, particularly on non-native species. Krysko and Enge recently collaborated on the most comprehensive monograph on non-native species invasions in Florida.

Richard D. Bartlett and Patricia P. Bartlett published popular accounts of Florida species and the books "A Field Guide to Florida Reptiles and Amphibians" (1999) and "Florida's Snakes: A Guide to Their Identification and Habits" (2003). At the time, these books were some of the best sources for information on non-native species in Florida, although exact localities were omitted and vouchers were not deposited in a collection. Walter E. Meshaka, Jr., received his Ph.D. from FIU working on the Cuban treefrog (*Osteopilus septentrionalis*) and served as curator for Everglades National Park (1995–2000). He has published numerous distributional notes, particularly on non-native species, and along with Brian P. Butterfield and J. Brian Hauge, he published the book "Exotic Amphibians and Reptiles of Florida" in 2004.

Steve A. Johnson received his M.S. from UCF and his Ph.D. from UF working on the striped newt. Johnson conducted surveys while working for SEARMI and is currently a wildlife professor at UF. He has published distributional notes on non-native species and collected many

specimens. Todd S. Campbell, a biology professor at the University of Tampa, researched non-native species, particularly the distribution of the brown anole (*Anolis sagrei*).

Many other individuals have made significant contributions to our knowledge of the distribution of herpetofauna in Florida. The following individuals have deposited >100 Florida vouchers of multiple species in systematic collections: J. S. Alexander, Matthew J. Aresco, William M. Beck, Jr., James Bell, L. Neil Bell, James F. Berry, Marshall B. Bishop, Sherman C. Bishop, Charles M. Bogert, Maurice K. Brady, Garnett R. Brooks, Edward J. Brown, Jason M. Butler, R. Christensen, W. Clanton, David G. Cook, Byrum W. Cooper, Ronald L. Crombie, W. H. Cross, Joshua C. Dickinson, Ellen M. Donlan, Anthony Flanagan, Phillip G. Frank, Nat P. Fry, A. L. Gilliam, Thomas Hallinan, E. S. Herald, J. Alan Holman, James F. Jackson, George J. Jacobs, John D. Kilby, Gregg S. Klowden, Fred Kraus, Robin Lawson, James N. Layne, William S. Lippincott, Clive J. Longden, Barry W. Mansell, Edgar A. Mearns, A. Meinecke, Gerrit S. Miller, Jr., M. B. Mittleman, Steven Myers, Lewis D. Ober (plus Ron and Jim Ober), Richard D. Owen, Daniel Parker, D. R. Paulson, H. W. Peterson, Ray Porter, Joseph M. Pylka, Anthony J. Reppas, Kenneth L. Richmond (Sims), Charles A. Ross, John R. Rossi, Coleman M. Sheehy III, Ray W. "Skip" Snow, Louis A. Somma, Karl R. Studenroth, Robert W. Taylor, Bert Tschambers, Josiah H. Townsend, Francis M. Uhler, O. C. Van Hyning, R. K. Vermilion, Kent A. Vliet, Joseph P. Ward, David J. White, C. M. Winegarner, William Witfield, Nelson R. Wood, and Glen E. Woolfenden.

#### **Environmental Setting**

Physiography.—Florida is relatively flat, and slight rises in elevation often separate watersheds. The maximum elevation in Florida is ca. 106 m above sea level in Walton County, and the maximum elevation in the peninsula is 95 m at Sugarloaf Mountain, Lake County. Florida's topography consists of step-like terraces that have been dissected by erosion over time, ranging from Recent (<10,000 years ago) in the case of the lowest coastal terraces to possibly as old as the Miocene (5–25 million years ago) in the case of the highest surfaces in the panhandle and central peninsular ridges (Brown et al. 1990). Sea levels have fluctuated over time, dramatically increasing and decreasing the size of peninsular Florida. Presently, only about half of Florida's platform is above water, whereas 19,000 years ago, seas were ca. 90 m lower and the platform was completely exposed out to the edge of the continental shelf (Whitney et al. 2004). Florida's highlands, ridges, and upland plains have been above sea level for at least 6–7 million years and up to 25 million or more years (Whitney et al. 2004). Ten major physiographic subdivisions were identified by Brooks (1982), and descriptions of these by Brown et al. (1990) are provided below.

Three physiographic districts are located along the Atlantic Coast (Fig. 1). The Sea Island District of northeastern Florida is part of the Atlantic Coastal Plain Section of the Coastal Plain Province and consists of upland terraces to plains and ridges with a thick overburden of sand or clayey deposits over limestone. Habitats are mostly pine flatwoods, dunes, and salt marshes. The Eastern Flatwoods District originated as a sequence of barrier islands and lagoons in Pliocene, Pleistocene and Recent times. It now consists of a generally low, flat landscape of pine flatwoods with dome swamps, prairies, ridges, and various coastal features. Surficial materials are primarily sandy with significant areas of peaty deposits. The Gold Coast–Florida Bay District is low lying and mostly consists of marshes (including the Everglades), prairies,

mangrove swamps, coastal ridges, and the Florida Keys. Rocks are Pleistocene and largely limestones overlaid by sand, marl, organic material, and limestone.

The remainder of the peninsula has 3 physiographic districts (Fig. 1). The Southwestern Flatwoods District is mostly low and flat, with pine flatwoods, prairies, dome swamps, mangroves, and dunes. The rocks and sediments are from the Miocene to Pleistocene and are overlaid predominantly by sand, limestone, and organic deposits. The Central Lake District consists primarily of sandhills and sand pine scrub on deep sand deposits on top of uplifted limestones of the Floridan Aquifer. This karst terrain has many solution basins that are now lakes and other wetlands; there are significant organic deposits. The large Ocala Uplift District extends from the Tampa Area to approximately the Ochlockonee River in the panhandle and has diverse elevations, landscapes, and surficial materials. Tertiary limestones are at or near the surface, and the low, rolling karst plains are distinctive, although the landscape is varied and includes stream-sculpted hills, flats and swamps, mixed hardwood forests on high clay soils, and sandhills.

Four physiographic districts are confined to the panhandle (Fig. 1). The Tifton Upland District, which is often referred to as the Tallahassee Red Hills, has mostly pine and mixed hardwood forests. Thick deposits of lower Miocene clays and loams, sometimes capped by sand, have been sculpted by surface drainage. Farther west in the northern panhandle is the Dougherty Karst District, which is lower than the districts on either side. Tertiary limestones near the surface have influenced landscape development, with karst dominating. Pine and mixed hardwood forests predominate on loamy or clayey soils, although a cap of sand >2 m deep may occur in the southern and eastern parts of the district. The westernmost district is the Southern Pine Hills District, which is part of the Gulf Coastal Plain Section of the Coastal Plain Province. Thick deposits of alluvial loam or clay in the northern portion overlay sand, gravel, silt, and clay. Intermediate elevations include ridges of coastal sediments, and the coastal strip has relict lagoon and barrier island features. The terrain of the Apalachicola Delta District was built with Apalachicola River sediments and includes relictual deltas, ridges, and lagoons to river terraces, delta plains, and barrier islands with sandy to clayey surficial materials.

Climate.—The amount of insolation, minimum, mean and maximum temperatures, growing season lengths, and annual and seasonal precipitation all may affect the distribution of amphibian and reptile species. Temperature extremes, rather than mean annual temperatures, are likely more important to amphibians and reptiles because they can result in death or reproductive incapacitance (Auffenberg 1982) and affect plant communities (e.g., frost killing mangrove trees). Florida's humid, subtropical climate is characterized by a cool, dry season and a warm, rainy season that may include tropical storms and hurricanes. Rain-bearing cold fronts during the dry season, tropical storms, and hurricanes are important in recharging the aquifer, filling ephemeral wetlands, and stimulating breeding of some amphibian species. Because Florida is a long peninsula with a north-south orientation, there is a southward decline in annual temperature range and an increase in seasonal rainfall variation (Chen and Gerber 1990).

The more temperate conditions of the northern peninsular and panhandle, with its cooler weather and relatively high winter precipitation, have important implications for the distribution of many amphibian species. Nineteen of Florida's 26 currently recognized salamander species are restricted to the northern peninsula and/or panhandle. In contrast, non-native species originating from subtropical areas around the world are often limited to the southern peninsula

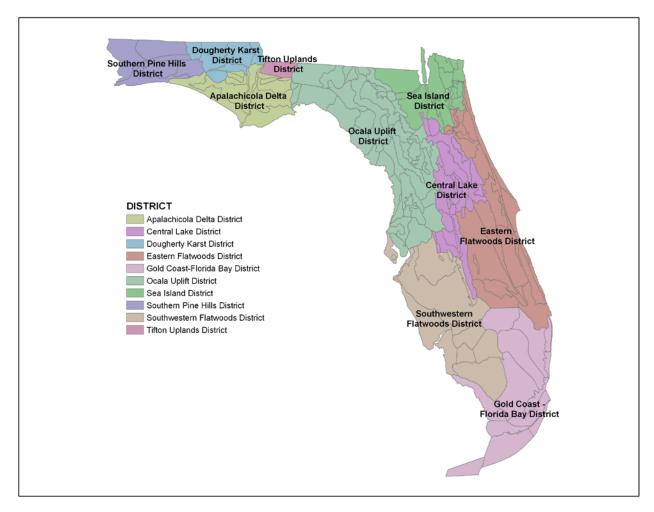


Fig. 1. Map showing physiographic districts of Florida (St. Johns River Water Management District 2000).

by periodic freezes, although some species can survive farther north because of behavioral adaptations or occupation of urban heat islands. The high winds, flooding, and storm surges associated with tropical storms and hurricanes apparently have had little effect on abundance and distributions of herpetofaunal species, even those that inhabit coastal or other low-lying areas, such as the Florida Keys.

River Drainages.—Florida has >1,700 rivers and streams, mostly in the panhandle and along the peninsular Gulf Coast (Fig. 2). Twenty-one of the 23 major rivers discharge into the Gulf of Mexico (Nordlie 1990). There are >300 artesian springs in Florida. Twenty-seven springs are classified as first magnitude (average discharge >2.83m³/sec), which represent ca. 1/3 of such springs in the United States (Rosenau et al. 1977).

The longest river completely within Florida is the 512-km-long St. Johns River, which flows northward from the St. Johns Marsh west of Malabar to the Atlantic Ocean 34 km northeast of Jacksonville (Fig. 2). The Apalachicola River has the largest drainage basin and greatest mean discharge, but most of the basin lies north of Florida. The Suwannee River, which originates in the Okefenokee Swamp in Georgia, ranks second in these categories, and it has the second

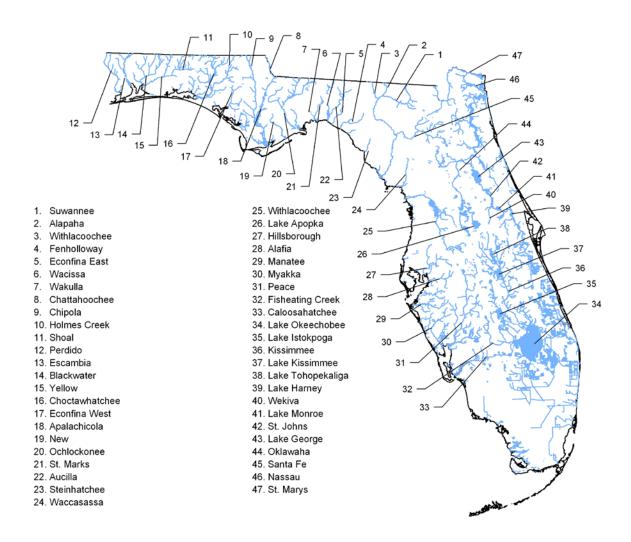


Fig. 2. Map showing major rivers and lakes in Florida (Florida Streams Dataset [FWC 2008] and Lake Areas [Florida Department of Environmental Protection 2002]).

longest stretch of river within Florida. Of the 23 major rivers that discharge directly into the sea, only the St. Johns and St. Mary rivers drain into the Atlantic Ocean. Florida contains 54 major river basins (Fig. 3).

Rivers are particularly important in determining the distribution of some aquatic species of turtles and salamanders, some of which are restricted to certain drainages. The Apalachicola, Ochlockonee, Aucilla, Suwannee, or St. Johns river basins appear to be historic biogeographic distributional breaks for many species.

*Biogeography.*—All of Florida occurs within the Coastal Plain, and no part is more than 115 km from the Atlantic Ocean or Gulf of Mexico. The peninsula extends ca. 700 km, and it is about the same distance from the Perdido River east to the Atlantic Ocean. Florida has 1,900 km

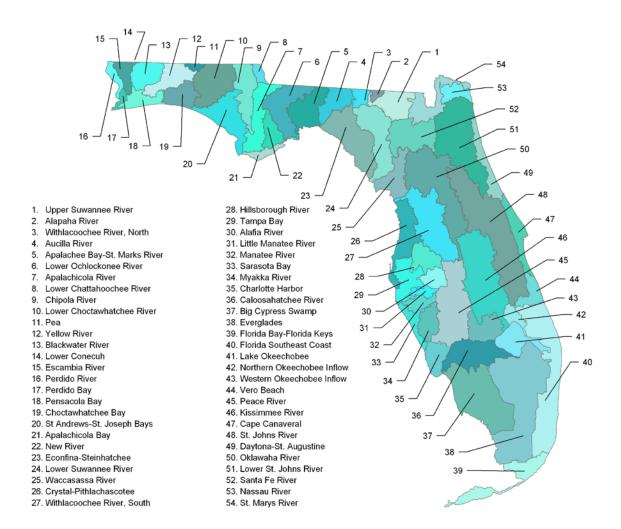


Fig. 3. Map showing 54 river basins in Florida (Watershed Boundaries Dataset [U.S. Geological Survey 2010]).

of coastline (excluding the Keys), the longest in the coterminous United States (Johnson and Barbour 1990). Sandy coastlines, primarily offshore barrier islands, constitute 1,200 km of shore line (Johnson and Barbour 1990). Florida has ca. 170,000 ha of salt marsh, half of which occurs from Tampa Bay to Pensacola (Montague and Wiegert 1990). Mangrove swamps total ca. 190,000 ha in Florida, 90% of which are in Lee, Collier, Monroe, and Miami-Dade counties. Florida has ca. 7,800 lakes >0.4 ha in surface area, occupying ca. 6% of the landscape (Brenner et al. 1990). More than 50% of the lakes occur in 14 peninsular counties along the central sand ridge (Brenner et al. 1990), providing important sources of water for xeric upland wildlife and aquatic species.

The greatest species richness of freshwater turtles (13 species) in Florida occurs in the Escambia River basin in the western panhandle; other basins in the panhandle and northern central Florida contain 12 species (Iverson and Etchberger 1989). Northern Florida has the third

richest turtle fauna in the world, which can be attributed partly to the warm, temperate, maritime climate with abundant rainfall (Iverson and Etchberger 1989). The greatest herpetofaunal species richness in North America north of Mexico occurs in the upper Apalachicola River basin, which has the greatest topographic relief (and a correspondingly high diversity of habitats) in the state (Means 1977). The high species richness of anurans, turtles, and snakes in this river basin may be a function of Florida's warm climate, high humidity, and abundant precipitation, but the latter 2 climatic variables may also account for the low species richness for lizards (Means 1977). The major center of salamander distribution and greatest species density are found in the Appalachian Mountains (Kiester 1971), but an unexpectedly large number of salamanders occurs in the Apalachicola River basin, which may reflect the system of ravines with cooler microclimates and a diverse assemblage of swamp-dwelling and aquatic species (Means 1977). The panhandle is situated such that it supports species from 5 geographic areas of endemism: north, Atlantic Coastal Plain, Gulf Coastal Plain, peninsular Florida, and western United States (Neill 1957, Goin 1958, Means 1977, Auffenberg 1982).

The number of native amphibian and reptile species declines as one progresses southward through Florida's peninsula, which has been called the "peninsula effect" (Duellman and Schwartz 1958, Kiester 1971, Means and Simberloff 1987, Auth 1989). The highest density of native herpetofaunal species, excluding sea turtles and species that are still being described, occurs in the panhandle counties of Calhoun, Escambia, Holmes, and Liberty counties (109–111 species), and the lowest species density is in the southern peninsula in Collier, DeSoto, Hardee, Hendry, Lee, and Monroe counties (63–67 species). Maximal amphibian species density occurs in the panhandle (Auth 1989). Salamander species density declines much more precipitously than anuran species density in the peninsula (Auth 1989). The patterns of turtle and snake maximum species densities match better than that for lizards; the region of maximum species density for lizards extends much farther southward through the peninsula along the well-drained soils of the Lake Wales Ridge (Auth 1989). Although long-term climatological and geological factors (e.g., erosion, land subsidence, sea level changes) control the general distribution of species and habitats, ecological events of the last 40,000 years likely determined many current herpetofaunal distributions (Auffenberg 1982).

The decreasing herpetofaunal species richness through Florida's peninsula could also be attributed to a reduction in topographic and habitat variation (Means and Simberloff 1987) instead of to a peninsula effect. The low, flat, extensive wetlands comprising the Everglades-Big Cypress region have the lowest herpetofaunal species diversity of any equally sized area on Florida's peninsula, perhaps because of the paucity of upland species (Means and Simberloff 1987). The diversity of trees, which are used by many terrestrial herpetofaunal species, decreases in southern Florida, and most tropical hardwoods occur in patchily distributed stands. The lack of acidic wetlands and large streams in southern Florida also helps explain why some amphibian and reptile species do not occur there (Means and Simberloff 1987). Fourteen amphibian species that depend upon winter rains to provide suitable breeding and larval habitat, and 6 species that require 9–20 months in the aquatic larval stage, are absent from southern Florida (Means and Simberloff 1987).

The Florida Keys is a 210-km island arc extending southwest from Soldier Key to Key West. The largest outcrop of limestone, the Miami Rock Ridge, extends from Miami through Homestead and then to Long Pine Key in Everglades National Park. Miami receives >600 mm

more mean annual rainfall than the Lower Keys, which are mostly only 1–2 m above sea level and are prone to temporary inundation by seawater during tropical storms and hurricanes (Snvder et al. 1990). The occurrence of amphibians in the Keys depends upon the availability and proximity of freshwater breeding sites. Mean ground-water level is slightly higher than mean sea level, and the ground water is brackish on the smaller islands, with only the largest islands of the Lower Keys having nearly fresh ground water (Ross et al. 1992). The diversity of native herpetofauna in rockland habitats is reduced in the Keys because some mainland species have failed to colonize this exposed island chain of limestone islands or have been extirpated in the past (Lazell 1989). The Upper Keys are less species-rich than the Lower Keys (Auffenberg1982, Auth 1989), perhaps because of mainland species historically moving overland to the Lower Keys (which are composed of Miami Limestone, the same foundation as the southern mainland and islands of Florida Bay) prior to land subsidence. The Upper Keys were not yet present because they are based on a coral reef, the Key Largo formation, that apparently grew in the Pamlico Sea (Neill 1957). The Keys have fewer than one-third as many amphibian and reptile species as the mainland, which may reflect the reduction in surface freshwater and habitat types, and the higher extinction rates characteristic of islands (Auth 1989). The occurrence of amphibians in the Keys is probably affected by the lower precipitation compared to the remainder of Florida, and the absence of a pronounced wet season (Chen and Gerber 1990).

Many xeric-adapted species arrived in Florida along a Gulf coastal corridor that linked the savannas of Florida with semiarid western North America during low sea levels in the late Pliocene and early Pleistocene (Neill 1957, Auffenberg and Milstead 1965, Meylan 1982). Xeric uplands appeared nearly 20 million years ago, and in the last 10,000 years, rising water tables have created habitat islands of scrub and sandhill by replacing formerly xeric habitat with wetlands (Webb 1990). During the last glacial maximum about 20,000 years ago, Florida was twice its present size, and scrub was probably the most abundant habitat type (Christman 1988). During the past 10,000 years, both climatic factors and anthropogenic practices, such as intentionally setting fires, may have favored the expansion of sandhill vegetation at the expense of scrub (Myers 1985). The oldest scrubs, which occur along the central ridge of the peninsula, are the most biologically diverse and contain many Florida endemic taxa, including the sand skink and bluetail mole skink (*Plestiodon egregius lividus*).

Upland hardwood and upland mixed forests have been present in Florida for ≥25 million years, making them the oldest and most persistent terrestrial habitats in the state (Webb 1990). A corridor from the north facilitated mesic taxa moving southward down Florida's central axis, especially during periods of low sea level when summers were relatively cool. Some of these "northern elements"—Fowler's toad (*Anaxyrus fowleri*), upland chorus frog (*Pseudacris feriarum*), southern copperhead (*Agkistrodon contortrix*), midland brown snake (*Storeria dekayi wrightorum*)—are primarily restricted to the Panhandle (Neill 1957:181), often in the Apalachicola Bluffs and Ravines biotic region (Means 1977). Upland hardwood and upland mixed forests are often considered equilibrium climax communities where they occur, but in Florida their composition and structure are continually changing over time and space in response to variable local environmental conditions and subtle differences in topography (Platt and Schwartz 1990), and apparently no vertebrates are restricted to these climax communities.

The ranges of many herpetofaunal species in Florida terminate or have an apparent distributional gap, such as the frosted flatwoods salamander (*Ambystoma cingulatum*), in the area

between the Aucilla and Suwannee rivers. This area has often been referred to as the "Suwannee Strait," and various authors have proposed different times when a barrier of sea water might have been present separating peninsular Florida ("Ocala Island") from the mainland (Webb 1990:84). There is disagreement regarding the location of this hypothetical Suwannee Strait or Gulf Trough (Tedford and Hunter 1984), with some geologists, biogeographers, or zoologists putting it as far west as the Aucilla River (Puri and Vernon 1964) and as far east as Palatka, where a narrow gap occurs in the Wicomico shoreline or Cody Scarp (Gilbert 1987). Frailey (1980) mapped it north and west of the present Suwannee River. Most geologists place the time of the Suwannee Strait in the Eocene and earlier (Chen 1965, Tedford and Hunter 1984) before there was much evidence of a persistent landmass in the area of the present peninsula; such a strait would not affect distributions of present-day species. However, Neill (1957) postulated the presence of a strait as recently as the highest interglacial sea levels of the early Pleistocene, which could then possibly explain biogeographic patterns observed in the southern dwarf siren, striped newt, and eastern indigo snake (Drymarchon couperi) (Liu et al. 2004, Krysko et al. 2010b, May et al. 2011). These species and other plant and animal taxa (Soltis et al. 2006) might share the same evolutionary history because their distributions apparently correspond to historical biogeography and sea level changes in peninsular Florida. Some of the apparent gaps in the distribution of species in this area of Florida may be due to limited sampling in these mostly rural counties, which have low human population densities.

In the northern and central peninsula, the Gulf and Atlantic lowlands are separated by a central ridge that extends from Georgia to the southern end of the Lake Wales Ridge. Much of the drainage here is subsurficial, affording little or no habitat for some wetland-dependent species. This ridge is breached in the north by the westerly flowing Suwannee and Santa Fe rivers. However, as these rivers pass through the ridge, they are characterized by well-defined banks with high, dry adjoining uplands. The lack of marsh or flatwoods habitat there has apparently prevented some amphibians of the Atlantic lowlands, such as the carpenter frog (*Lithobates virgatipes*) and many-lined salamander (*Stereochilus marginatus*), from colonizing the Gulf lowlands. The northern dwarf siren (*Pseudobranchus striatus*) occurs on both sides of this ridge, but genetic studies have shown that there is little or no genetic exchange between Gulf and Atlantic lowland populations (Liu et al. 2004, 2006).

Habitats.—Probably the most comprehensive classification scheme for natural communities was developed by FNAI (2010b), and FWC developed a land cover classification system that also includes altered and manmade habitats (Kawula 2009). An improved statewide land cover map with 44 land cover classes (Fig. 4) was developed by FNAI and FWC using existing sources and expert review of aerial photography. Short descriptions of many of the land cover classes on the Cooperative Land Cover Map are provided below; more detailed descriptions of natural and altered habitats can be found in reports by FNAI (2010a) and Kawula (2009). The occurrence and relative abundance of native amphibian and reptile species in 31 natural habitats (excluding riverine, palustrine, and marine environments) in Florida have been provided by Enge (1997) using an earlier FNAI (1990) habitat classification scheme.



Fig. 4. Cooperative Land Cover Map displayed with collapsed version of the Florida Land Cover Classification (FNAI 2010a).

Hardwood Forested Uplands – mesic or xeric forest dominated mainly by hardwood trees that rarely or never burns; this includes slope forest, upland hardwood forest, mesic hammock, and xeric hammock.

Rockland Hammock – mesic flatland forest with a closed canopy of evergreen mixed tropical hardwoods in the southern peninsula and Keys on limestone substrate.

Upland Pine – mesic–xeric upland savanna of widely spaced longleaf (*Pinus palustris*), loblolly (*P. taeda*), or shortleaf (*P. echinata*) pines over a primarily herbaceous understory in the Panhandle to extreme northern central peninsula on sand or clay substrate; burns every 1–3 years.

- Other High Pine and Scrub hills with mesic or xeric woodlands or shrublands; the canopy, if present, is open and consists of pine or a mixture of pine and deciduous hardwoods; includes upland mixed woodland and upland coniferous forest.
- Scrub xeric upland of open or dense shrubs, primarily scrub oaks or Florida rosemary (*Ceratiola ericoides*), with or without a canopy of sand pines (*Pinus clausa*) occurs nearly statewide, except for the extreme southern peninsula and Keys (mainly coastal in the Panhandle) on deep sand substrate; burns every 5–80 years.
- Sandhill xeric upland savanna of widely spaced longleaf pine and/or turkey oak (*Quercus laevis*) with a wiregrass understory in the Panhandle to central peninsula on deep sand substrate; burns every 1–3 years.
- Mesic Flatwoods mesic flatland with an open canopy of longleaf or slash pines over a layer of low shrubs and herbs; occurs statewide except for the extreme southern peninsula and Keys on sand substrate; burns every 2–4 years.
- Scrubby Flatwoods xeric-mesic flatland with a widely scattered canopy of pines over saw palmetto (*Serenoa repens*) and scrub oaks that occurs statewide except for the extreme southern peninsula and Keys on a sand substrate; burns every 5–15 years.
- Pine Rockland mesic–xeric flatland with an open canopy of South Florida slash pine (*P. elliottii* var. *densa*) with mixed tropical and temperate shrubs, palms, and herbs in the understory that occurs in the southern peninsula and Keys on exposed limestone substrate; burns every 3–7 years.
- Dry Prairie mesic–xeric flatland that is treeless with a low cover of shrubs and herbs, such as wiregrass, dwarf live oak (*Quercus minima*), and stunted saw palmetto in the central peninsula on sand soils over an organic or clay hardpan; burns every 1–2 years.
- Mixed Hardwood Coniferous -- mesic-xeric upland forest of hardwoods and pines with an open to partially closed canopy over an open understory of mixed herbs and scattered shrubs (wiregrass infrequent) in the central Panhandle to extreme northern central peninsula on loamy soils; burns every 2–20 years.
- Shrub and Brushland contains saw palmetto, gallberry (*Ilex glabra*), wax myrtle (*Myrica cerifera*), and other shrubs and brush as well as various types of short herbs and grasses.
- Coastal Uplands mesic or xeric communities that have woody or herbaceous vegetation and are restricted to barrier islands and near shore; includes beach dune, coastal berm, coastal grassland, coastal strand, maritime hammock, and shell mound.
- Barren and Outcrop Communities small extent communities in karst features or on exposed limestone that include upland glade, sinkhole, and Keys cactus barren.
- Freshwater Non-Forested Wetlands herbaceous or shrubby palustrine communities in floodplains or depressions whose canopy trees, if present, are very sparse and often stunted; includes slough.
- Prairies and Bogs short hydroperiod wetlands dominated by grasses, sedges, and/or titi (*Cyrilla racemiflora*); includes seepage slope, wet prairie, marl prairie, and shrub bog.
- Freshwater Marshes—long hydroperiod and dominated by grasses, sedges, broadleaf emergents, floating aquatics, or shrubs; includes depression marsh, basin marsh, coastal interdunal swale, floodplain marsh, slough marsh, and Glades marsh.
- Freshwater Forested Wetlands -- floodplains or depressions that are dominated by hydrophytic trees.

- Cypress/Tupelo long hydroperiod and cypress (*Taxodium* spp.) or tupelo (*Nyssa* spp.) dominate or are important in the canopy; includes dome swamp, basin swamp, strand swamp, and floodplain swamp.
- Other Coniferous Wetlands coniferous forested wetlands that are not dominated by cypress, tupelo, or a mix of cypress/tupelo; includes wet flatwoods, which has an open canopy of scattered pine trees or cabbage palms (*Sabal palmetto*) and burns every 3–10 years.
- Other Hardwood Wetlands short hydroperiod and dominated by a mix of hydrophytic hardwood trees with cypress or tupelo occasional or infrequent in the canopy; includes baygall, and hydric hammock.
- Other Wetland Forested Mixed -- mixed wetlands forest communities in which neither hardwoods nor conifers achieve a 66% dominance of the crown canopy composition.
- Non-vegetated Wetland hydric surfaces where vegetation cannot become established because of rapid erosion by wind or water, fluctuation of the water surface level, or extreme acidity; includes intermittent ponds and riverine sandbars.
- Estuarine Intertidal -- intertidal or supratidal zone dominated by herbaceous or woody halophytic vascular plants and with a salinity >0.5 ppt; includes tidal flats and oyster bars.
- Keys Tidal Rock Barren flatland with exposed limestone in supratidal zone with open, mainly herbaceous vegetation of upper saltmarsh species and stunted shrubs and trees; restricted to the Keys and never burns.
- Saltwater Marsh estuarine wetland on muck, sand, or limestone substrate that is inundated with saltwater by daily tides and has a treeless, dense herb layer with few shrubs; occurs in coastal areas statewide and occasionally or rarely burns.
- Mangrove Swamp estuarine wetland on muck, sand, or limestone substrate that is inundated with saltwater by daily tides and is dominated by mangrove and mangrove-associated species in the central peninsula and Keys; never burns.
- Exotic Plants communities dominated by Australian pine (*Casuarina equisetifolia*), melaleuca (*Melaleuca quinquenervia*), Brazilian pepper (*Schinus terebinthifolius*), or other exotic species.
- Open Water rivers, streams, canals, ditches, natural and artificial lakes and ponds, and ocean zone.

Ecoregions.—Florida has 3 Level III ecoregions: Southeastern Plains, Southern Coastal Plain, and Southern Florida Coastal Plain (Fig. 5). The Southeastern Plains extends primarily across the northern panhandle. The natural vegetation of these irregular plains was predominantly longleaf pine on Cretaceous or Tertiary-age sands, silts, and clay. Elevations and relief are greater than in the Southern Coastal Plain, and most streams have relatively low gradients and sand bottoms. Level IV ecoregions within the Southeastern Plains in Florida are Southern Pine Plains and Hills, Dougherty Plain, Tifton Upland, Tallahassee Hills/Valdosta Limesink, and Southeastern Floodplains and Low Terraces (Fig. 5).

The Southern Coastal Plain stretches across the southern panhandle and encompasses most of the peninsula (Fig. 5). It consists of mostly flat plains, but it is a heterogeneous region containing barrier islands, coastal lagoons, marshes, and swampy lowlands along the Gulf and Atlantic coasts, along with an area of discontinuous highlands containing numerous lakes in central Florida. Level IV ecoregions within the Southern Coastal Plain in Florida are Gulf Coast Flatwoods, Southwestern Florida Flatwoods, Central Florida Ridges and Uplands, Eastern

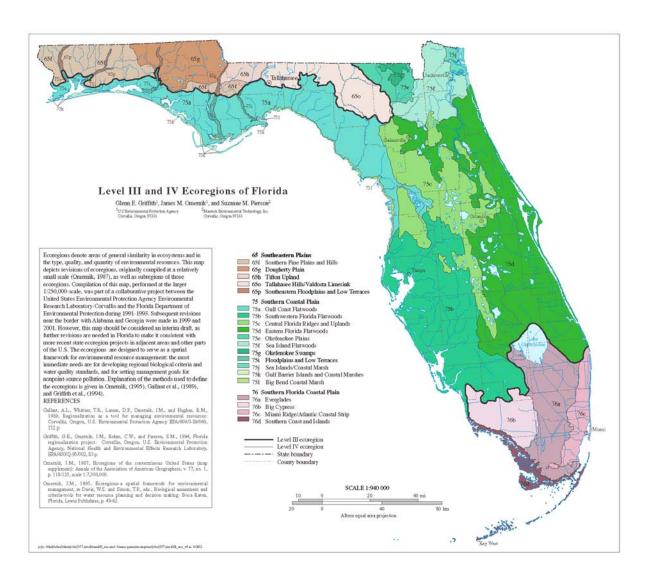


Fig. 5. Map of the Level III and IV ecoregions in Florida (Environmental Protection Agency; available at <a href="mailto:ttp://ftp.epa.gov/wed/ecoregions/fl/fl\_eco\_pg.pdf">ttp://ftp.epa.gov/wed/ecoregions/fl/fl\_eco\_pg.pdf</a>).

Florida Flatwoods, Okefenokee Plains, Sea Island Flatwoods, Okefenokee Swamps, Floodplains and Low Terraces, Sea Islands/Coastal Marsh, Gulf Barrier Islands and Coastal Marshes, and Big Bend Coastal Marsh (Fig.5).

The Southern Florida Coastal Plain in the extreme southern peninsula is mostly frost free. This region is characterized by flat plains with wet soils, marsh, and swamp land covered with Everglades and palmetto prairie vegetation types that are affected by slight differences in elevation and landform. Level IV ecoregions within the Southern Florida Coastal Plain are Big Cypress, Miami Ridge/Atlantic Coastal Strip, and Southern Coast and Islands (Fig. 5).

## **Status of Species**

Parts of Florida have experienced massive human alteration and degradation of natural habitats, particularly in large urban areas such as along the southeastern Atlantic Coast. The area south of Lake Okeechobee has been converted primarily to sugarcane, and much of southern Florida now consists of a network of canals. The Lake Wales Ridge, an area of high endemism, and other upland areas that once contained scrub or sandhill habitat, have been cleared for citrus groves or subdivisions. Agriculture and silviculture have altered many natural habitats; some species do well in these altered habitats, but populations of other species disappear. The distributions of many native species have contracted, and additional contractions are expected in the future due to increasing human population, climate change, and sea-level rise.

Some published information and additional anecdotal information indicate that populations of some species are declining, sometimes for unknown reasons. For example, many populations of the southern dusky salamander (*Desmognathus auriculatus*) have declined or disappeared in areas where habitats are apparently unchanged (Dodd 1997, Means and Travis 2007). Population declines also appear to have occurred in disparate species like the striped newt, ornate chorus frog (*Pseudacris ornata*), eastern indigo snake, eastern (*Heterodon platirhinos*) and southern (*H. simus*) hognose snakes, and common kingsnake. Examination of the number of specimens collected by decade for herpetological collections may reflect these declines (Dodd and Franz 1993, Krysko and Smith 2005), but such data should be interpreted cautiously because extensive collection of specimens is less common now than it once was. Also, legal protection of species or popularity in the pet trade decreases the number of specimens deposited in scientific collections.

Florida has a long history of commercial collection of amphiuma and reptiles for roadside attractions, zoos, and the live animal trade. Ross Allen's Reptile Institute had a network of collectors that provided a growing demand for reptiles for exhibits or pets, and this facility and other businesses harvested rattlesnakes (Snyder 1949, Allen 1961). Continued collection of amphibians and reptiles for pets, skins, and food continued in the 1990s (Enge 2005a, 2005b), although the demand for some snake species has declined recently because of supply from captive propagation. Recent FWC regulations have restricted the collection of turtles, and future regulations may affect the take of additional species. Current FWC regulations can be found at http://www.myfwc.com/media/1456328/2011-2012-Hunting-Regulations.pdf.

The legal status of state-listed species is in a period of flux. New FWC threatened species rules went into effect on 8 November 2010. All federally listed species that occur in Florida are now included on Florida's list as federally designated endangered or threatened species. Species will no longer appear on both the federal and state list (Table 1). In addition, the state has a listing process to identify species that are not federally listed but at risk of extinction. Biological status reviews were conducted for all species currently listed by the state as threatened or Species of Special Concern (<a href="http://www.myfwc.com/wildlifehabitats/imperiled/biological-status/">http://www.myfwc.com/wildlifehabitats/imperiled/biological-status/</a>). In the future, all these state-listed species will either be listed as threatened or delisted once management plans are approved. State-listed species that will be delisted in the future are the Pines Barren treefrog, gopher frog (Lithobates capito), alligator snapping turtle, Suwannee cooter, and Lower Keys populations of the red rat snake (Pantherophis guttatus) and peninsula ribbon snake (Thamnophis sauritus sackenii). The future listing status of species is given in

Table 1. Amphibian and reptile species in Florida and their future (2012) federal or state listing status and designation as Species of Greatest Conservation Need (SGCN). If only a particular subspecies or population is listed, the subspecific epithet or location of the population is given in parentheses. E = Endangered, T = Threatened, Y = Yes.

Scientific name	Common name	Common name Federal status S		SGCN	
ORDER CAUDATA	SALAMANDERS				
Pseudobranchus striatus	Northern Dwarf Siren			Y (lustricolus & striatus)	
Notophthalmus perstriatus	Striped Newt	T (candidate)		Y	
Ambystoma bishopi	Reticulated Flatwoods Salamander	E		Y	
Ambystoma cingulatum	Frosted Flatwoods Salamander	T		Y	
Ambystoma tigrinum	Eastern Tiger Salamander			Y	
Desmognathus apalachicolae	Apalachicola Dusky Salamander			Y	
Desmognathus auriculatus	Southern Dusky Salamander			Y	
Desmognathus sp. cf. conanti	Spotted Dusky Salamander			Y	
Desmognathus monticola	Seal Salamander			Y	
Eurycea quadridigitata complex	Dwarf Salamander			Y (chamber- laini &"bog" species)	
Eurycea wallacei	Georgia Blind Salamander		T	Y	
Hemidactylium scutatum	Four-toed Salamander			Y	
Stereochilus marginatus	Many Lined-Salamander			Y	
Amphiuma pholeter	One-Toed Amphiuma			Y	
ORDER ANURA	FROGS AND TOADS				
Lithobates capito	Gopher Frog			Y	
Lithobates okaloosae	Florida Bog Frog		T	Y	
Lithobates virgatipes	Carpenter Frog			Y	
Hyla andersonii	Pine Barrens Treefrog			Y	
Pseudacris ornata	Ornate Chorus Frog			Y	
ORDER TESTUDINES	TURTLES				
Caretta caretta	Loggerhead Sea Turtle	T		Y	
Chelonia mydas	Green Sea Turtle	E		Y	
Eretmochelys i. imbricata	Atlantic Hawksbill Sea Turtle	E		Y	
Lepidochelys kempii	Kemp's Ridley Sea Turtle	E		Y	
Lepidochelys olivacea	Olive Ridley Sea Turtle	T			
Dermochelys coriacea	Leatherback Sea Turtle	E		Y	
Macrochelys temminckii complex	Alligator Snapping Turtle			Y	
Kinosternon baurii	Striped Mud Turtle			Y (Lower Keys)	
Clemmys guttata	Spotted Turtle			Ϋ́	

Table 1. Continued.

Scientific name	Common name	Federal status	State status	SGCN
Deirochelys reticularia	Chicken Turtle			Y
Graptemys barbouri	Barbour's Map Turtle		T	Y
Graptemys ernsti	Escambia Map Turtle			Y
Malaclemys terrapin	Diamondback Terrapin			Y
Pseudemys concinna suwanniensis	Suwannee Cooter			Y
Pseudemys nelsoni	Florida Redbelly Turtle			Y (Panhandle)
Terrapene carolina	Eastern Box Turtle			Y
Gopherus polyphemus	Gopher Tortoise		T	Y
Apalone mutica calvata	Gulf Coast Smooth Softshell			Y
Apalone spinifera aspera	Gulf Coast Spiny Softshell			Y
ORDER CROCODYLIA	CROCODILIANS			
Alligator mississippiensis	American Alligator	T (similarity of appearance)		Y
Crocodylus acutus	American Crocodile	T		Y
ORDER SQUAMATA SUBORDER AMPHISBAENIA	AMPHISBAENIANS			
Rhineura floridana	Florida Worm Lizard			Y
SUBORDER SAURIA	LIZARDS			
Sceloporus woodi	Florida Scrub Lizard			Y
Anolis carolinensis seminolus	Southern Green Anole			Y
Sphaerodactylus notatus	Florida Reef Gecko			Y
Plestiodon anthracinus pluvialis	Southern Coal Skink			Y
Plestiodon egregius	Mole Skink	T (lividus)	T (egregius)	Y (except similis)
Plestiodon reynoldsi	Sand Skink	T		Y
SUBORDER SERPENTES	SNAKES			
Cemophora c. coccinea	Florida Scarlet Snake			Y
Diadophis punctatus acricus	Key Ringneck Snake		T	Y
Drymarchon couperi	Eastern Indigo Snake	T		Y
Farancia erytrogramma	Rainbow Snake			Y
Heterodon platirhinos	Eastern Hognose Snake			Y
Heterodon simus	Southern Hognose Snake			Y
Lampropeltis calligaster	Prairie Kingsnake			Y
Lampropeltis extenuata	Short-tailed Snake		T	Y
Lampropeltis getula complex	Common Kingsnake			Y
Nerodia clarki	Salt Marsh Water Snake	T (taeniata)		Y

Table 1. Continued.

Scientific name	Common name	Mississippi Green Water		SGCN	
Nerodia cyclopion	Mississippi Green Water Snake			Y	
Pantherophis guttatus	Corn or Red Rat Snake			Y (Lower Keys)	
Pituophis melanoleucus mugitus	Florida Pine Snake		T	Ý	
Seminatrix pygaea cyclas	South Florida Swamp Snake			Y	
Storeria dekayi limnetes	Marsh Brown snake			Y	
Storeria victa	Florida Brown Snake		T (Lower Keys)	Y (Lower Keys)	
Tantilla oolitica	Rim Rock Crowned Snake		Ť	Ϋ́	
Tantilla relicta	Florida Crowned Snake			Y	
Thamnophis sauritus sackenii	Peninsula Ribbon Snake			Y (Lower Keys)	
Virginia v. valeriae	Eastern Smooth Earth Snake			Y (Highlands County pop.)	
Agkistrodon contortrix	Southern Copperhead			Y	
Crotalus adamanteus	Eastern Diamondback Rattlesnake			Y	
Crotalus horridus	Timber Rattlesnake			Y	

Table 1, and the current status of state and federally listed species can be found at http://myfwc.com/media/214168/Threatened Endangered Species.pdf.

Species of Greatest Conservation Need (SGCN) were originally identified as part of Florida's Comprehensive Wildlife Conservation Strategy (FWC 2005), currently referred to as Florida's State Wildlife Action Plan (FWC 2011). The criteria and list were re-evaluated starting in 2010, and a revised list was completed in late 2011 (Table 1; FWC 2011). All native freshwater, marine, and terrestrial wildlife species that regularly occur in Florida or state waters were considered in the selection of the SGCN list. The criteria incorporated existing information from established species assessment systems, as well as local natural history information and expert input. The SGCN list includes all federal or state-listed species as well as all Florida taxa that were ranked as Near Threatened, Lower Risk/Conservation Dependent, or Lower Risk/Near Threatened (plus more vulnerable categories) using criteria developed by the International Union for the Conservation of Nature and Natural Resources (IUCN) Red List of Threatened Species (IUCN Standards and Petitions Subcommittee 2010). Taxa were also included as SGCN if they had a minimum state rank of S3 or global rank of G3 according to FNAI, which uses the international NatureServe scoring system. Taxa were also included as SGCN if they were considered vulnerable to extinction by FWC's species ranking system (Millsap et al. 1990, Enge et al. 2003), whose scores are re-examined annually. Using this system, rare taxa with a population size score >4 (10,000 or fewer individuals) and biologically vulnerable taxa with a biological score >19 were included. Taxa were also added if they were determined to be keystone species (play a critical role in maintaining the structure of an ecological community) or

taxa of concern with at least a moderate risk of extinction in the future using scientific evidence or expert consensus.

### **METHODS**

A global network of 62 institutions (including UF) is currently collaborating in the National Science Foundation's funded HerpNet, with more than 5.5 million cataloged specimens. There are 34 HerpNet institutions as well as 23 non-HerpNet institutions that contain Florida specimens, which we georeferenced and used for this study (Table 2).

Table 2. Acronyms and names of collections from which voucher records from Florida were georeferenced and used for the Atlas of Amphibians and Reptiles of Florida.

Acronym	Collection	Vouchers
ABS	Archbold Biological Station	2,009
ALA	University of Alabama Museum of Natural History	389
AMNH	American Museum of Natural History	6,392
ANGSU	Angelo State University	1
ANSP	Academy of Natural Sciences	669
APSU	Austin Peay State University, Biology Department	18
AUM	Auburn University Museum	2,309
BYU	Monte L. Bean Museum, Brigham Young University	45
CAS	California Academy of Sciences	2,310
CM	Carnegie Museum	3,003
CMNH	Cleveland Museum of Natural History	65
CU	Cornell University Museum of Vertebrates	686
EVER	Everglades National Park (included in UF)	
FMNH	Field Museum of Natural History	2,179
FWM	Fort Worth Museum of Science and History, Science Department	130
GMNH	Georgia Museum of Natural History, University of Georgia	882
GMU	George Mason University	126
INHS	Illinois Natural History Survey	274
ISU	Indiana State University, Biological Sciences Department	171
KU	University of Kansas Natural History Museum and Biodiversity Research Center	1,211
LACM	Natural History Museum of Los Angeles County	1,683
LSUMZ	Louisiana Museum of Natural History, Louisiana State University	3,401
MCZ	Museum of Comparative Zoology, Harvard University	4,658
MHP	Museum of the High Plains, Fort Hays State University, Sternberg Museum of Natural Histo	ry 193
MPM	Milwaukee Public Museum	643
MSB	Museum of Southwestern Biology, University of New Mexico	346
MSU	Division of Vertebrate Natural History, Michigan State University Museum	560
MVZ	Museum of Vertebrate Zoology, University of California Berkeley	965
NCSM	North Carolina State Museum of Natural Sciences	432
NLU	University of Louisiana at Monroe	324
OMNH	Sam Noble Oklahoma Museum, University of Oklahoma	169
OUVC	Ohio University Vertebrate Collection	118
ROM	Royal Ontario Museum	106
SDNHM	San Diego Natural History Museum	60
SIUC	Southern Illinois University Collection	291
SREL	Savannah River Ecology Laboratory, University of Georgia	8
SSM	Savannah Science Museum	39

Table 2. Continued.

Acronym	Collection	Vouchers
TAIC	Texas A&M University–Kingsville, Department of Biology (now at AMNH)	75
TCWC	Texas Cooperative Wildlife Collection, Texas A&M University	683
TNHC	Texas Natural History Center, University of Texas Austin	537
TU	Tulane University, Museum of Natural History	397
UAZ	Amphibian and Reptile Collection, University of Arizona	65
UCF	University of Central Florida	1,423
UCM	University of Colorado Museum of Natural History	76
UF	Florida Museum of Natural History, University of Florida	65,842
UIMNH	University of Illinois, Museum of Natural History	1,606
UL	University of Louisville	58
UM	University of Miami	891
<b>UMMZ</b>	University of Michigan, Museum of Zoology	4,980
UNR	University of Nevada	12
UNSM	University of Nebraska State Museum	125
UOMZ	University of Oklahoma, Stovall Museum of Zoology	21
USNM	Smithsonian National Museum of Natural History	17,140
USF	University of South Florida	818
UTA	Amphibian and Reptile Diversity Research Center, University of Texas at Arlington	503
UWF	University of West Florida	15
UTEP	The Centennial Museum, University of Texas at El Paso	155
YPM	Yale Peabody Museum of Natural History	2,117
Total		134,404

In addition to vouchers (cataloged specimens, specimen lots, and photographs), locality data for each species were obtained for unverified records from the scientific and popular literature, published and unpublished reports (i.e., gray literature), and credible survey databases (see below). Unverified records do not mean unreliable records, but the records are not supported by vouchers and their identification cannot be confirmed. Over 1,000 literature citations from FWC's online Herp Bibliography of Florida were examined for pertinent information. If locality information were not provided in publications or reports, we tried to obtain the information from the author(s). Additional unverified records were obtained from FWC databases that summarized the results of drift-fence surveys and dipnet surveys for larval amphibians. We did not include survey data collected by persons with questionable species identification skills. Unverified or unvouchered records were also obtained from FNAI's Element Occurrence Records database, FWC's Wildlife Observation (Wildobs) database, FWC's Exotic Species database, FWC's Sea Turtle Nesting database, and FWC's Sea Turtle Salvage and Stranding Network database.

Locality data were georeferenced using a variety of sources (i.e., Google Earth, DeLorme Topo USA, Land Boundary Information System [Labins], BioGeomancer, etc.) and plotted for each species using ArcGIS (ver. 9.3). Locations were georeferenced as accurately as possible, but some records, particularly old ones, provided only the name of a city or town. In these cases, the accuracy of the location is lower, but regardless, all records were georeferenced with an associated error.

Florida has 67 counties (Fig. 6). On the maps, solid symbols (dots and squares) represent cataloged voucher specimens and photographs (Fig. 7). Squares are used when only the county is known, and no other locality data are available. County-only records were removed if other records with more detailed locality data from that county were available for a given species. Some records represent multiple specimens (i.e., specimen lots) collected from the same site. Records were deleted if we suspected that they represented specimens purchased from an animal dealer based at that location but may have been collected elsewhere (this information usually appeared in individual collection databases, such as purchased from dealer).



Fig. 6. Map of Florida counties.

Outlined symbols (circles and squares) represent unverified records (Fig. 7). Like vouchered records above, squares are used when only the county is known, and no other locality data are available. Blue-colored symbols represent records prior to 1980 or unknown date; red-colored symbols represent records from 1980 to 2011 (Fig. 7). Unverified records from survey databases may actually represent hundreds of thousands of specimens; however, only one record of each species from a location was mapped, and nearby survey locations were often combined because they would appear as the same location when mapped.

- Cataloged vouchers 1980-present
- Cataloged vouchers pre-1980 or unknown
- Cataloged vouchers, county only 1980-present
- Cataloged vouchers, county only pre-1980 or unknown
- Unverified records 1980-present
- Ounverified records pre-1980 or unknown
- □ Unverified records, county only 1980-present
- □ Unverified records, county only pre-1980 or unknown

Fig. 7. Priority (highest from top to bottom) of GIS layers and definitions of symbols used for distribution maps of species.

Sea turtles are seldom deposited in systematic collections because of their large size and protected status. We included records from FWC's 2 sea turtle databases, and these records are unvouchered, not unverified, because most of them are supported by photographs or other confirmation. The unvouchered records from FWC's Statewide Nesting Beach Survey database are mapped at the midpoint of a stretch of nesting beach (A. Meylan, FWC, personal communication). The unvouchered records from FWC's Sea Turtle Salvage and Stranding Network database represent locations of dead, sick, or injured sea turtles (typically referred to as stranded sea turtles because most are found washed ashore). Because sea turtle carcasses or debilitated sea turtles can drift for great distances, these locations may be far from where the living, healthy animals occurred and may misrepresent distributions (A. M. Foley, FWC, personal communication). Also, these discovery locations can be biased based on shoreline type and proximity to developed areas. For example, the paucity of records of stranded sea turtles along the west coast of Florida between Pasco and Franklin counties and in the area of the Everglades is related to the remote, often marshy coastlines in these areas and not to a lack of sea turtles living nearby (A. M. Foley, personal communication). Conversely, the large number of records along sandy beaches is related to the year-round presence of many people in these areas and to the ease of which stranded sea turtles are spotted in these areas and not necessarily to a relatively high concentration of sea turtles living nearby (A. M. Foley, personal communication). Sea turtle records are not considered in a county if they are located offshore, because most of these records represent carcasses that could wash ashore elsewhere.

Because vouchered records have higher credibility than unverified records, they represent the highest priority layers when mapped (Fig. 7). On maps, lower priority records may be obscured by those with higher priority, but the number of records for each category layer is provided in each species' map legend.

For each species account, we provide current scientific and common names, a brief discussion of its geographic distribution (including the number of vouchered records and counties it has been found in, potential records, and/or identification errors), earliest known voucher, and taxonomy (if changed recently). Taxa are arranged phylogenetically by Order/Family following Maddison and Schulz (2007), Gamble et al. (2008), Frost (2010), and Uetz et al. (2011). We mostly used scientific names following Crother (2008), and common names following Conant and Collins (1991) and Collins and Taggart (2009) because these are

most familiar to people. Deviations from Crother's (2008) common and scientific names are noted in the Taxonomy section of species accounts.

### RESULTS AND DISCUSSION

## **Georeferencing Records**

We georeferenced and mapped a total of 134,299 vouchered specimens and photographs from 58 institutions (Table 2; Fig. 8). The Florida Museum of Natural History (UF), which now houses the Everglades National Park (EVER) collection, contained 49.0% of all specimens, with the Smithsonian Museum of Natural History (USNM) having the second highest number of specimens (12.8%). We also georeferenced 43,319 unverified or unvouchered records from Florida.



Fig. 8. Amphibian and reptile vouchers (cataloged specimens and photographs; n = 134,404) georeferenced from Florida.

Species accounts are listed elow for each of the 142 native and 56 established non-native amphibians and reptiles in Florida. We also provide vouchered or unverified/unvouchered species for each county in tabular form to facilitate determination of county occurrences (Appendix A). The number of native herpetofaunal species decreases southward along the peninsula, so the number of records is not a good indicator of whether a county has been under surveyed. However, the number of potential or predicted species can be determined for each county based upon the known ranges and habitat requirements of individual species, along with knowledge of geographical barriers (Table 3).

Alachua and Leon counties have few or no potential native species without vouchered records because of the presence of large universities and extensive collecting by concomitant herpetologists (Table 3). Some counties have relatively few records because they have been under sampled due to their small size, rural nature, and/or lack of collectors. For example, <60% of the potential native species have been collected (vouchered and unverified records combined) in DeSoto and Flagler counties. In rural Suwannee and Lafayette counties, only 63.9% and 69.2%, respectively, of potential native species have been collected. St. Lucie County is moderately sized with a relatively dense human population, but it has been under surveyed, with only 51.9% of potential native species collected (Table 3). Drift-fence surveys of Bradford, Franklin, Gadsden, Hamilton, and Walton counties have yielded a relatively large number of unverified records (Table 3).

#### **Potential Species**

A spotted salamander specimen was purportedly collected in 1974 from Hathaway Mill Creek, Holmes County (AUM 36667), but the specimen has been lost and its identification could not be verified. However, the species has been found near Geneva, Alabama, ca. 6.4 km north of Holmes County (Neill 1954), and it possibly occurs in the northern panhandle. Neill (1954) believed that a purported spotted salamander from Candler, Marion County (Bishop 1943) was actually a young tiger salamander (*Ambystoma tigrinum*) (Neill 1954). A putative young spotted salamander from Hughes Island in Ocala National Forest, Marion County (Funderburg et al. 1970) was probably also a tiger salamander.

There is a record of the midwestern worm snake (*Carphophis amoenus helenae* [Kennicott 1859]) from Escambia County, Alabama, (Mount 1975) just north of Santa Rosa County, Florida. Two specimens of *C. amoenus* have been reported or found in Pinellas and Volusia counties (*see* Species Accounts), but no specimens have been found in more than 60 years. It is more likely that a specimen will be found in the future in the Florida panhandle than in the peninsula.

Several non-native reptile species have been reported to be established in Florida, but no known voucher specimens exist, and we could not verify their occurrence. Small colonies of the Indochinese bloodsucker (*Calotes mystaceus* Duméril and Bibron 1837) have been reported near pet dealerships in Glades and Okeechobee counties (Butterfield et al. 1997, Bartlett and Bartlett 1999, Meshaka et al. 2004), but no vouchers exist. Recent site visits have failed to find the species, which might have been extirpated by cold winters (R. D. Bartlett, personal communication). Bartlett and Bartlett (1999) reported an established population of Bibron's sand gecko (*Chondrodactylus bibroni* Smith 1846) at a site in Manatee County, several specimens of the comb anole (*Anolis ferreus* Cope 1864) and Barbados anole (*A. extremus* 

Table 3. Numbers of native amphibians and reptiles in Florida from vouchers in systematic research collections, additional unverified/unvouchered native species, potential native species, and non-native species for each county, along with the size of the county.

County	Number of verified native	Number of unverified native	Number of potential native	Number of mon-native	County size (km²)
Alachua	99	0	99	17	2,264
Baker	71	6	88	3	1,515
Bay	77	6	112	7	1,979
Bradford	69	9	93	5	759
Brevard	74	1	81	15	2,637
Broward	66	0	76	38	3,131
Calhoun	96	2	109	1	1,469
Charlotte	55	7	76	11	1,797
Citrus	86	1	94	7	1,513
Clay	72	1	93	6	1,557
Collier	67	2	72	21	5,247
Columbia	92	0	100	7	2,064
DeSoto	34	1	66	4	1,650
Dixie	83	7	103	2	1,823
Duval	90	2	98	10	2,005
Escambia	95	3	114	3	1,720
Flagler	47	3	86	5	1,256
Franklin	87	12	111	5	1.383
Gadsden	81	12	106	3	1,336
Gilchrist	72	1	94	5	904
Glades	64	1	68	7	2,005
Gulf	88	6	113	1	1,463
Hamilton	60	12	96	1	1,334
Hardee	50	5	67	5	1,650
Hendry	54	1	63	10	2,986
Hernando	77	6	92	9	1,238
Highlands	72	0	72	13	2,663
Hillsborough	78	2	85	12	2,722
Holmes	79	2	109	0	1,248
Indian River	70	1	76	9	1,303
Jackson	97	3	107	0	2,372
Jefferson	86	4	101	0	1,549
Lafayette	61	2	91	0	1,406
Lake	83	0	88	10	2,468
Lee	61	2	70	25	2,082
Leon	104	0	106	8	1,728
Levy	94	2	100	5	2,896
Liberty	102	2	110	0	2,165
Madison	74	1	95	0	1,792
Manatee	57	3	78	8	1,919
Marion	95	2	99	8	4,090
Martin	59	1	73	18	1,440
Miami-Dade	74	1	77	43	5,038
Monroe	67	0	70	26	2,852
Nassau	74	5	95	3	1,689
Okaloosa	109	3	116	4	2,424
Okeechobee	63	0	67	9	2,005
Okeecnobee	63	U	6/	9	2,003

Table 3. Continued.

County	Number of verified native	Number of unverified	Number of potential	Number of mon-native	County size (km²)
0	84	native	native	1.4	2.252
Orange		1	85	14	2,352
Osceola	64	1	75	10	3,424
Palm Beach	72	0	74	22	5,268
Pasco	70	2	86	12	1,930
Pinellas	80	1	84	14	725
Polk	78	1	83	12	4,856
Putnam	86	1	93	7	1,870
St. Johns	74	6	86	8	1,577
St. Lucie	39	2	79	16	1,481
Santa Rosa	102	5	116	2	2,631
Sarasota	65	3	76	12	1,481
Seminole	79	0	83	9	798
Sumter	73	4	84	4	1,414
Suwannee	60	2	97	3	1,782
Taylor	83	7	99	1	2,669
Union	49	3	81	1	622
Volusia	86	5	92	10	2,865
Wakulla	102	0	113	2	1,572
Walton	96	13	118	3	2,740
Washington	78	4	106	2	1,502

Garman 1887) from Ft. Myers, Lee County, and a tenuously established population of the East African black mud turtle (*Pelusios subniger* Lacépède 1789) from Miami-Dade County. We have confirmed that this turtle species was released ca. 1980 (J. A. Wasilewski, Natural Selections, personal communication), but trapping of ponds at the site in 2006 was unsuccessful. The Bibron's sand gecko population is still extant (R. D. Bartlett, personal communication).

For the following non-native species, vouchered records exist from Florida but apparently do not represent established populations (Krysko et al. 2011). Bartlett and Bartlett (1999) reported the Australian green treefrog (*Litoria caerulea* [White 1790]) from Collier, Miami-Dade, and Lee counties and the Haitian curlytail lizard (*Leiocephalus personatus* [Cope 1863]) from Miami-Dade County but considered these species as only tentatively established. These 2 species were not considered established by Meshaka et al. (2004b).

The coquí (*Eleutherodactylus coqui* Thomas 1966) has been collected from several plant nurseries in Homestead, Miami-Dade County (Dalrymple 1994). This species is usually not considered established because populations survive only in greenhouses, where they are periodically extirpated but become reestablished by subsequent bromeliad shipments from Puerto Rico (Loftus and Herndon 1984, Meshaka et al. 2004).

#### **Species Accounts**

#### **ORDER CAUDATA**

#### FAMILY SIRENIDAE

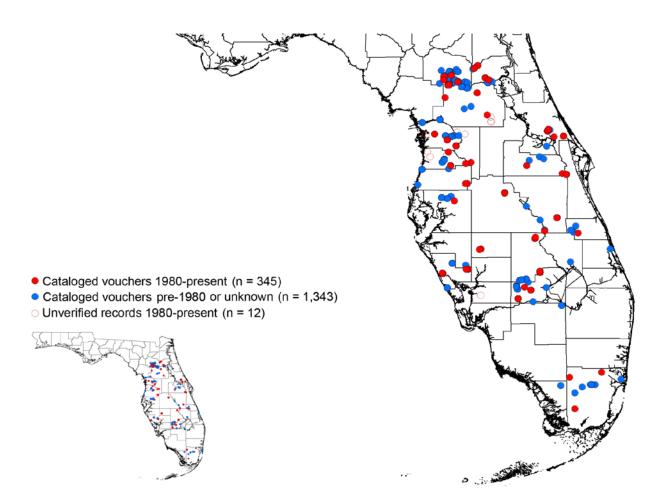
## Pseudobranchus axanthus Netting and Goin 1942

#### **Southern Dwarf Siren**

Geographic Distribution: There are 1,688 vouchered records from 24 counties and an additional unverified record from Fred C. Babcock-Cecil M. Webb Wildlife Management Area (WMA), Charlotte County, during an FWC survey. This species occurs in the peninsula as far north as Levy, Alachua, Clay, Putnam, and possibly Duval counties. Within its apparent range, no records exist from Brevard, Broward, Clay, Collier, DeSoto, Flagler, Lake, Lee, Levy, Martin, Palm Beach, Pinellas, and St. Johns counties. Because all dwarf sirens were once considered to belong to 1 of 5 subspecies of *Pseudobranchus striatus*, it is difficult to determine which species is represented by unverified records or unexamined vouchers not previously identified to subspecies. Whenever possible, problematic specimens were assigned to species based upon body of water, habitat, and current knowledge of distribution.

Earliest Known Voucher: 1900 (ANSP 17458).

**Taxonomy:** Previously considered a subspecies of *Pseudobranchus striatus*, Moler and Kezer (1993) elevated *P. axanthus* to full species status based on it having 64 chromosomes rather than 48 chromosomes in *P. striatus*. Two subspecies are currently recognized: narrow-striped (*axanthus* Netting and Goin 1942) and Everglades (*belli* Schwartz 1952) dwarf sirens.





Photographs by Pierson Hill (top) and Kenneth L. Krysko (bottom).

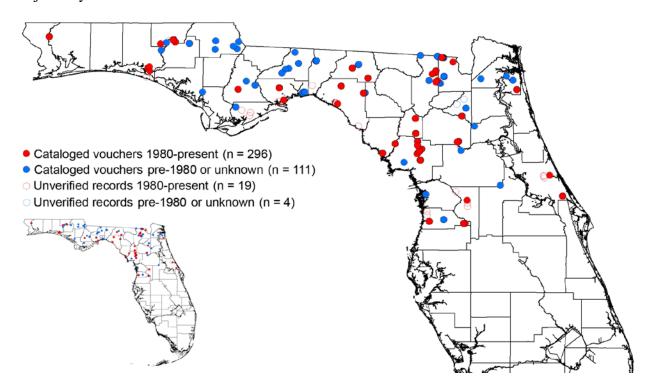
### Pseudobranchus striatus (LeConte 1824)

#### **Northern Dwarf Siren**

Geographic Distribution: There are 407 vouchered records from 27 counties. This species occurs in the panhandle and peninsula as far south as Hernando, Sumter, and Volusia counties. Within its apparent range, no records exist from Calhoun, Clay, Escambia, Flagler, Gadsden, Gulf, Hamilton, Lafayette, Nassau, St. Johns, Suwannee, and Union counties. Two former subspecies are now designated as belonging to a separate species, *P. axanthus* (Moler and Kezer 1993), making identification of unverified records or unexamined vouchers previously not identified to subspecies difficult. Whenever possible, problematic specimens were assigned to species based upon body of water, habitat, and knowledge of distribution.

Earliest Known Voucher: 1933 (KU 17626).

**Taxonomy:** Three subspecies are currently recognized: Gulf Hammock (*lustricolus* Neill 1951), slender (*spheniscus* Goin and Crenshaw 1949), and broad-striped (*striatus* [LeConte 1824]) dwarf sirens. The subspecies *lustricolus* was collected in 1950 and 1951 (Neill 1951), but specimens attributable to this subspecies have not been found since, despite survey efforts. Moler (1988) corrected the type locality of this subspecies. *Pseudobranchus axanthus* (including *P. a. belli*) was previously included within *P. striatus*, but based on divergent chromosome numbers, *P. axanthus* was elevated to full species status (Moler and Kezer 1993). The record from the vicinity of Chumuckla Springs, Santa Rosa County (Means and Means 2002), is disjunct by ca. 125 km from the nearest records in Walton and Holmes counties.





Photographs by Pierson Hill (top) and Dirk J. Stevenson (bottom).

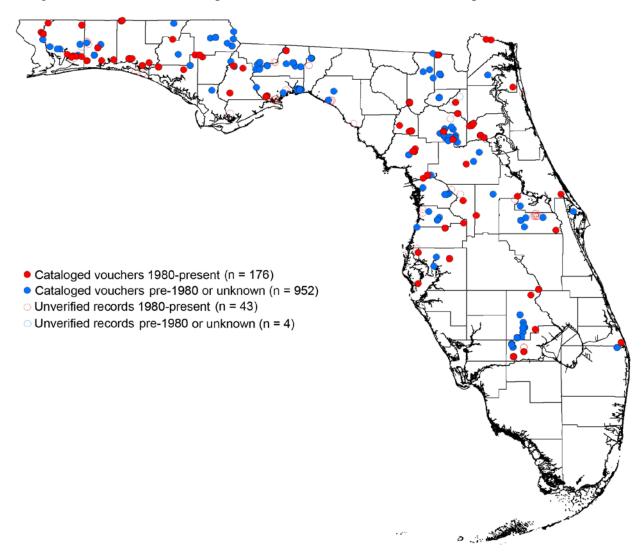
### Siren intermedia complex Barnes 1826

#### **Eastern Lesser Siren**

Geographic Distribution: There are 1,129 vouchered records from 45 counties, and FWC surveys yielded additional unverified records from Franklin (Apalachicola River Wildlife and Environmental Area) and St. Johns (Guana River WMA) counties. This species likely occurs throughout the state north of Lake Okeechobee, although no records exist from Charlotte, Clay, DeSoto, Dixie, Flagler, Hamilton, Hendry, Hardee, Indian River, Lafayette, Madison, Manatee, Okeechobee, Osceola, St. Lucie, and Sarasota counties.

Earliest Known Voucher: 1893 (USNM 19995).

**Taxonomy:** Karyological and genetic data suggest that *Siren intermedia*, as currently recognized, includes at least 3 species in Florida (P. E. Moler, FWC, unpublished data).





Photographs by Todd W. Pierson (top) and Pierson Hill (bottom).

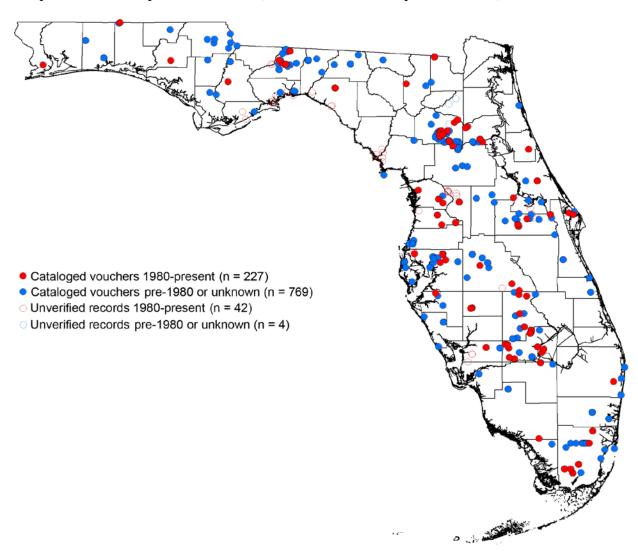
### Siren lacertina complex Linneaus 1766

#### **Greater Siren**

Geographic Distribution: There are 996 vouchered records from 52 counties and additional unverified records from Bradford (Vickers 1980) and Dixie (Gunzburger et al. 2005) counties. This species likely occurs throughout the state, although no records exist from Bay, Clay, DeSoto, Duval, Gilchrist, Lafayette, Martin, Nassau, Osceola, St. Lucie, Santa Rosa, Suwannee, and Union counties.

Earliest Known Voucher: 1896 (ANSP 18397).

**Taxonomy:** Karyological and genetic data suggest that *Siren lacertina*, as currently recognized, comprises at least 2 species in Florida (P. E. Moler, FWC, unpublished data).





Photographs by Daniel Parker (top) and Pierson Hill (bottom).

#### FAMILY PROTEIDAE

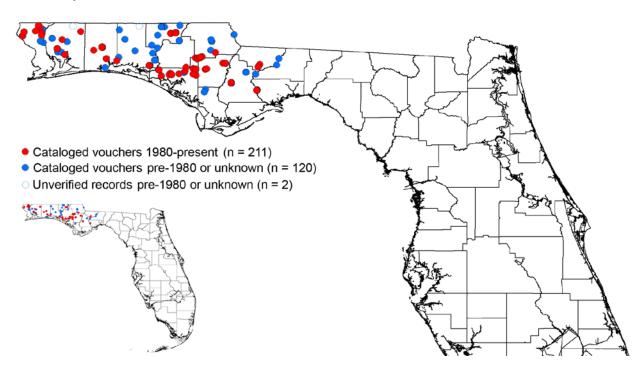
# Necturus sp. cf. beyeri Viosca 1937

# **Loding's Waterdog**

**Geographic Distribution:** There are 331 vouchered records from 14 counties. This species occurs in panhandle streams as far east as the Ochlockonee River drainage, although there is no record from Franklin County.

Earliest Known Voucher: 1933 (CM 18005).

**Taxonomy:** Florida's waterdogs were long treated as Alabama waterdogs (*Necturus alabamensis*). However, Bart et al. (1997) restricted *N. alabamensis* to streams of the Cumberland Plateau in northern Alabama, leaving the taxonomy of widespread waterdogs in the Georgia, Alabama, and Florida Coastal Plain unresolved. Currently referred to as *Necturus* sp. cf. *beyeri*, meaning that they are a similar species to Gulf Coast waterdogs (*N. beyeri*) (Bart et al. 1997, Guyer 2005).





Photographs by Kevin M. Enge (top) and Kenneth L. Krysko (bottom).

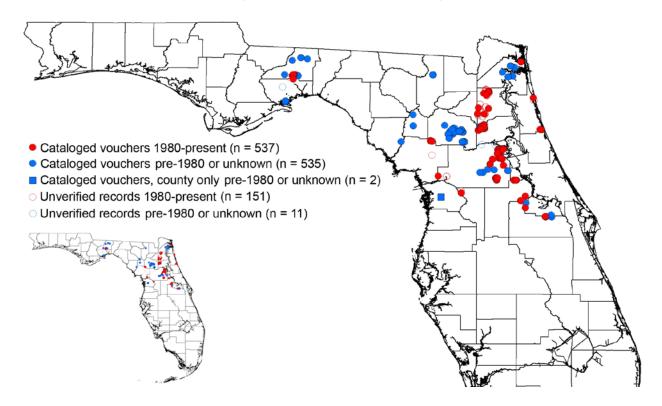
#### FAMILY SALAMANDRIDAE

#### Notophthalmus perstriatus (Bishop 1941)

# **Striped Newt**

Geographic Distribution: There are 1,072 vouchered records from 17 counties. This species is being considered for listing as federally threatened (U.S. Fish and Wildlife Service 2011), and recent surveys have provided additional distributional data (Enge 2011). This species once occurred in Leon and Wakulla counties in the eastern panhandle and in the northern peninsula from Columbia, Gilchrist, and Dixie counties east to Duval and St. Johns counties and south to Citrus, Sumter, Orange, and Seminole counties. Many populations have declined (U.S. Fish and Wildlife Service 2011), and there are no post-1980 records for 5 counties, despite intensive surveys (Enge 2011). Within its apparent range, no records exist from Bradford, Flagler, Nassau, Suwannee, and Union counties.

Earliest Known Voucher: 1922 (UMMZ 74434; AMNH 15255).





Photographs of aquatic adults (top left & right, bottom left) and eft (center left) by Kevin M. Enge and paedomorphs by Kenneth L. Krysko (center right) and Kevin M. Enge (bottom right).

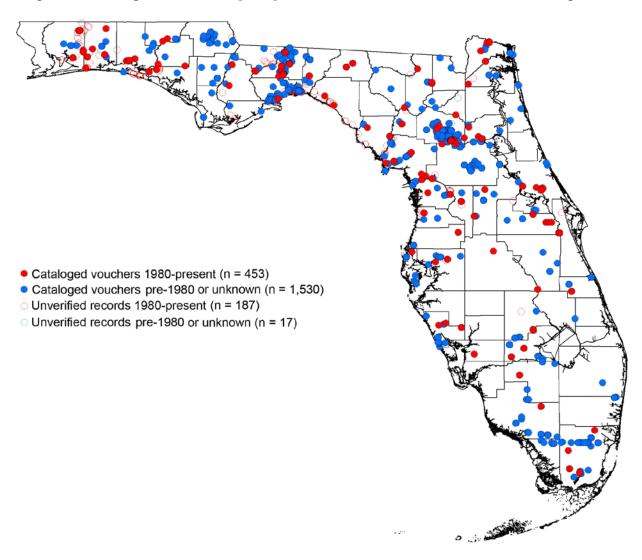
# Notophthalmus viridescens (Rafinesque 1820)

#### **Eastern Newt**

**Geographic Distribution:** There are 1,983 vouchered records from 55 counties and additional unverified records from Brevard and Hamilton counties. This species likely occurs throughout the state, although no records exist from Clay, DeSoto, Escambia, Flagler, Hardee, Lafayette, Lee, Manatee, Martin, and St. Lucie counties.

**Earliest Known Voucher**: 1892 (USNM 21329–21330).

**Taxonomy:** Two subspecies occur in Florida: central newt (*louisianensis* Wolterstorff 1914) in the panhandle and peninsula newt (*piaropicola* [Schwartz and Duellman 1952]) in the peninsula.





Photographs of terrestrial adult *louisianensis* by Pierson Hill (top) and paedomorphic *piaropicola* by Kevin M. Enge (bottom).

#### FAMILY AMBYSTOMATIDAE

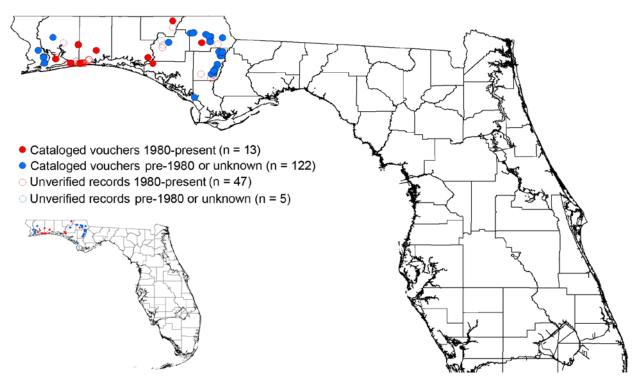
#### Ambystoma bishopi Goin 1951

#### **Reticulated Flatwoods Salamander**

**Geographic Distribution:** There are 135 vouchered records from 9 counties. This federally endangered species occurs west of the Apalachicola River, but there is no record from Bay County. It was listed because of population declines, and many populations have been extirpated (U.S. Fish and Wildlife Service 2008). The largest populations apparently persist on Eglin Air Force Base and adjacent Hurlburt Field in southern Okaloosa County (Jackson and Hipes 2005).

**Earliest Known Voucher**: 1853 (MCZ 204, 99302).

**Taxonomy:** Goin (1950) described the subspecies *Ambystoma cingulatum bishopi* based on morphological and color pattern differences, but Martof and Gerhardt (1965) suggested that taxon was not warranted. Pauly et al. (2007) recognized *A. bishopi* as a separate species based upon molecular and additional morphological analyses.





Photographs by John B. Jensen (top) and Kelly Jones (bottom).

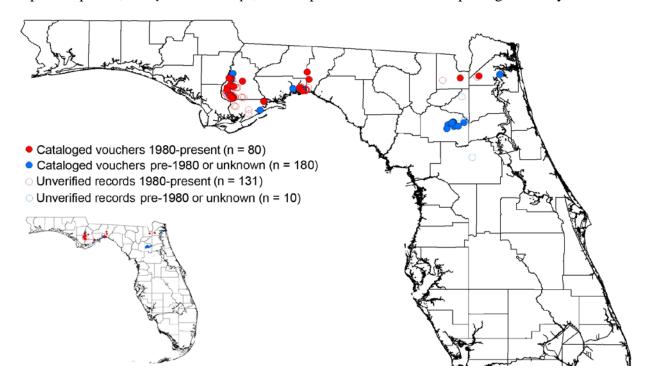
# Ambystoma cingulatum Cope 1867

#### **Frosted Flatwoods Salamander**

Geographic Distribution: There are 260 vouchered records from 7 counties and additional unverified records from Bradford (Vickers 1980) and Marion (Neill 1954) counties. This federally threatened species (U.S. Fish and Wildlife Service 1999) occurs east of the Apalachicola River, but no records exist between the Aucilla River and Alachua County in the northern peninsula. The largest populations occur in Apalachicola National Forest, Liberty County, and St. Marks National Wildlife Refuge, Wakulla County (Ripley and Printiss 2005, Palis and Enge 2005c).

Earliest Known Voucher: 1912 (USNM 49431–49432).

**Taxonomy:** Pauly et al. (2007) recognized populations west of the Apalachicola River as a separate species, *Ambystoma bishopi*, based upon molecular and morphological analyses.





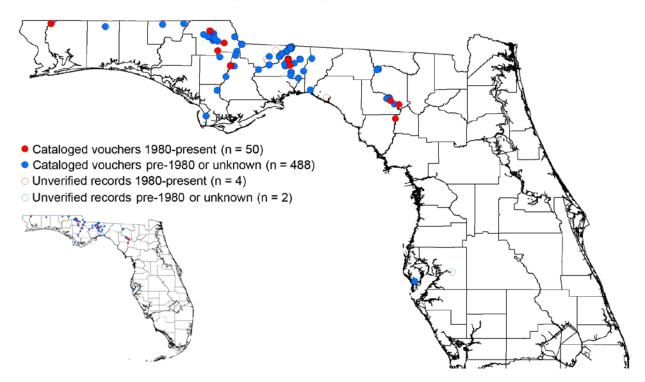
Photographs by Pierson Hill (top) and D. Bruce Means (bottom).

# Ambystoma opacum (Gravenhorst 1807)

#### **Marbled Salamander**

Geographic Distribution: There are 538 vouchered records from 15 counties and additional unverified records from the Hickory Mound Unit of Big Bend WMA, Taylor County (Surdick et al. 2010), and near Lithia Springs, Hillsborough County (Bartlett and Bartlett 1999). This species occurs in the panhandle and east as far as the Suwannee River in the peninsula. The disjunct records from Pinellas and Hillsborough counties are >220 km south of the closest record (UF 86646) in Dixie County. The 2 Pinellas County specimens (MCZ 4826–27) are from Gulfport, and an unvouchered photograph exists of the 2 specimens collected from Hillsborough County in the 1960s. Within its apparent range, excluding the area between Dixie and Pinellas counties, no records exist from Bay, Escambia, Franklin, Gilchrist, Hamilton, Wakulla, Walton, and Washington counties.

Earliest Known Voucher: 1894 (ANSP 28883).





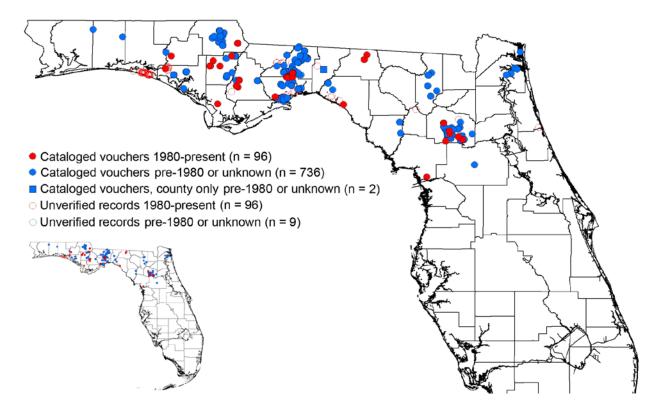
Photographs by Kenneth L. Krysko (top) and Dirk J. Stevenson (bottom).

# Ambystoma talpoideum (Holbrook 1838)

#### **Mole Salamander**

Geographic Distribution: There are 834 vouchered records from 18 counties and unverified records from 4 additional counties. The unverified records are from Gadsden (Joe Budd WMA), Gilchrist (Fort White Mitigation Park Wildlife and Environmental Area), St. Johns (Faver-Dykes State Park), and Walton (Point Washington State Forest) counties during FWC surveys. This species occurs from the panhandle east to the Atlantic Coast in the northeastern peninsula and at least as far south as Levy and Marion counties. Within its apparent range, no records exist from Baker, Clay, Escambia, Franklin, Hamilton, Holmes, Lafayette, Putnam, Santa Rosa, Suwannee, and Union counties. We excluded a 1972 voucher from Plymouth, Orange County (UF 92608), that could not be located for verification.

Earliest Known Voucher: 1883 (ANSP 24050).





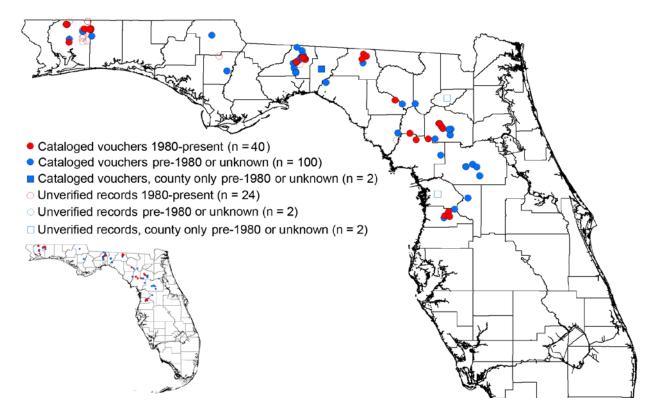
Photographs by Kenneth L. Krysko (top) and D. Bruce Means (bottom).

# Ambystoma tigrinum (Green 1825)

# **Eastern Tiger Salamander**

Geographic Distribution: There are 140 vouchered records from 18 counties and additional unverified records from Citrus and Union counties (Carr 1940). This species occurs in the panhandle and in the peninsula as far east as Alachua and Marion counties and as far south as Sumter and Hernando counties. Within its apparent range, no records exist from Bay, Escambia, Gadsden, Hamilton, Holmes, Liberty, Wakulla, Walton, and Washington counties. A purported spotted salamander (*A. maculatum*) from Hughes Island in Ocala National Forest, Marion County (Funderburg et al. 1970), was likely an *A. tigrinum*.

Earliest Known Voucher: 1880 (USNM 10533).





Photographs by John B. Jensen (top) and Kevin M. Enge (bottom).

#### FAMILY PLETHODONTIDAE

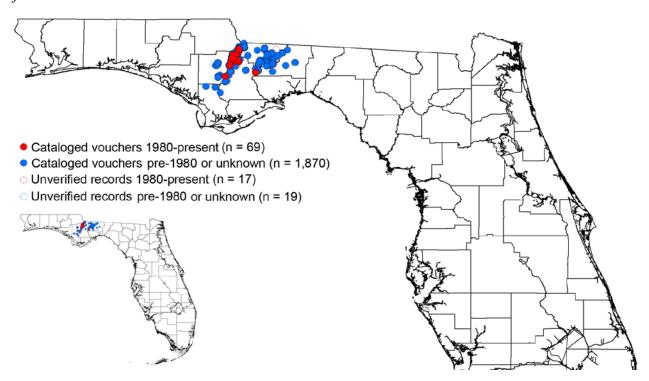
#### Desmognathus apalachicolae Means and Karlin 1989

# **Apalachicola Dusky Salamander**

**Geographic Distribution:** There are 1,939 vouchered records from Calhoun, Gadsden, Gulf, Liberty, and Leon counties. This species occurs in ravines of tributaries of the Apalachicola, Chipola, and Ochlockonee rivers.

Earliest Known Voucher: 1927 (FMNH 90218, 93292).

**Taxonomy:** Means and Karlin (1989) described *Desmognathus apalachicolae* from the Ochlockonee, Apalachicola-Flint-Chattahoochee, and upper Choctawhatchee river basins in Alabama, Georgia, and Florida. These salamanders had previously been included within *D. fuscus*.





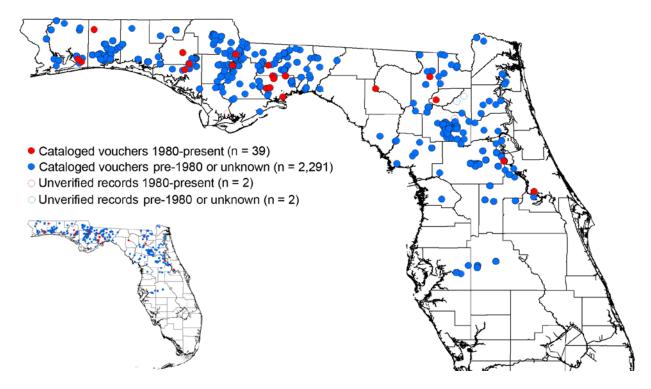
Photographs by D. Bruce Means (top) and Kenneth L. Krysko (bottom).

### Desmognathus auriculatus (Holbrook 1838)

### **Southern Dusky Salamander**

Geographic Distribution: There are 2,330 vouchered records from 37 counties and an additional unverified record from Bradford County (Vickers 1980). This species occurs throughout the panhandle east to the St. Johns River and south to central Hillsborough and Polk counties. Within its apparent range, no records exist from Gilchrist, Hamilton, Hernando, Lafayette, Pasco, and Sumter counties. Many populations have apparently declined or been extirpated (Dodd 1998, Means 2005, Means and Travis 2007), and post-1980 records exist for only 14 counties.

Earliest Known Voucher: 1869 (MCZ 1070).





Photographs by Pierson Hill (top) and D. Bruce Means (bottom).

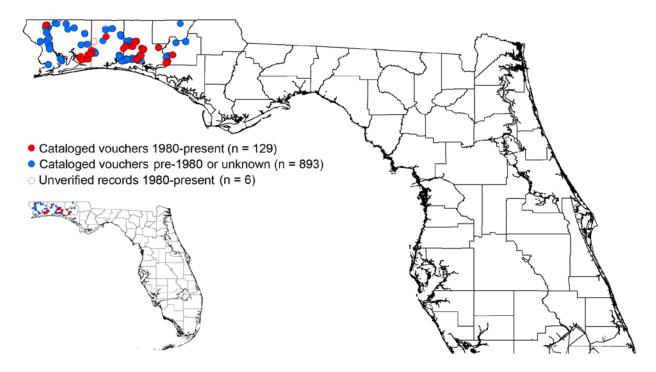
### Desmognathus sp. cf. conanti Rossman 1958

# **Spotted Dusky Salamander**

**Geographic Distribution:** There are 1,022 vouchered records from 6 counties. This species occurs in ravines along tributaries of panhandle rivers from the Choctawhatchee River westward. Within its apparent range, no record exists from Bay County.

Earliest Known Voucher: 1950 (MVZ 52699–52702, 52706; TU 13445; UF 2680).

**Taxonomy:** Although Florida populations have historically been assigned to *Desmognathus conanti*, this species does not occur in Florida (Means and Bonett 2005). A taxonomic revision is being conducted (D. B. Means, Coastal Plains Institute, unpublished data), and this species has been referred to as the Eglin ravine dusky salamander (FWC 2005).





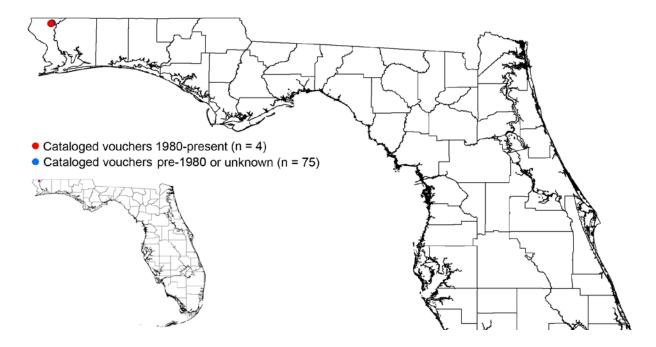
Photographs by D. Bruce Means (top) and Kevin M. Enge (bottom).

# Desmognathus monticola Dunn 1916

### **Seal Salamander**

**Geographic Distribution:** There are 79 vouchered records from Escambia County. This species is known to occur in Florida only in 5 small ravines south of Canoe Creek and west of Bluff Springs (Means and Longden 1970, Means 1992).

**Earliest Known Voucher**: 1969 (UF 28148–28162).





Photographs by John B. Jensen (top) and D. Bruce Means (bottom).

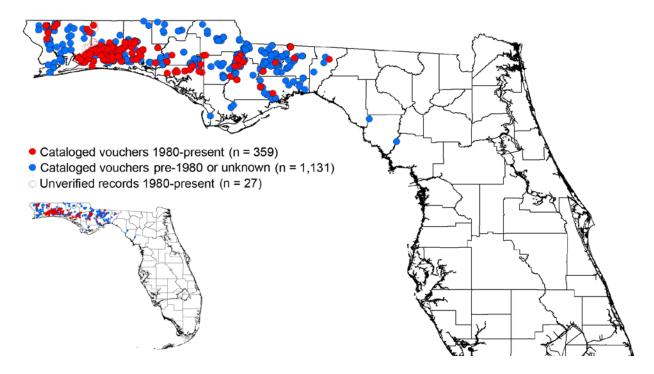
# Eurycea cirrigera (Green 1830)

#### **Southern Two-lined Salamander**

**Geographic Distribution:** There are 1,490 vouchered records from 17 counties. This species primarily occurs in the panhandle west of the Aucilla River, but specimens have been found in Dixie County along the Suwannee (UF 95610) and Steinhatchee (KU 179050) rivers. It may occur elsewhere in the Big Bend region in the gap between the Aucilla and Suwannee rivers (e.g., Lafayette, Madison, and Taylor counties).

Earliest Known Voucher: 1917 (AMNH 20078).

**Taxonomy:** Formerly considered a subspecies of *Eurycea bislineata* and first treated as a separate species by Jacobs (1987).





Photographs by Kenneth L. Krysko.

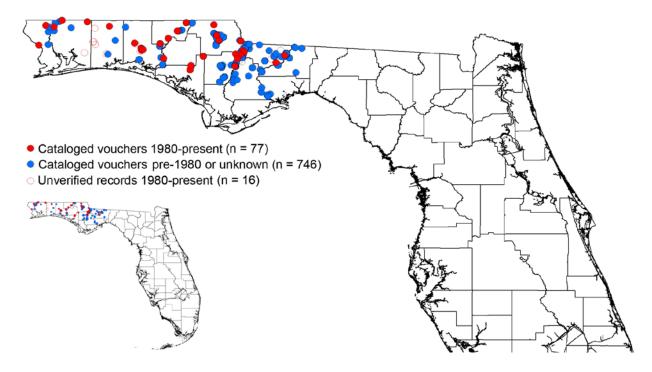
# Eurycea guttolineata (Holbrook 1838)

### **Three-lined Salamander**

**Geographic Distribution:** There are 823 vouchered records from 13 counties. This species occurs in the panhandle from Leon and Wakulla counties westward. Within its apparent range, no records exist from Franklin and Gulf counties.

Earliest Known Voucher: 1923 (UMMZ 58795).

**Taxonomy:** Formerly considered a subspecies of *Eurycea longicauda* but elevated to full species status by Carlin (1997).





Photographs by Kenneth L. Krysko (top) and Kevin M. Enge (bottom).

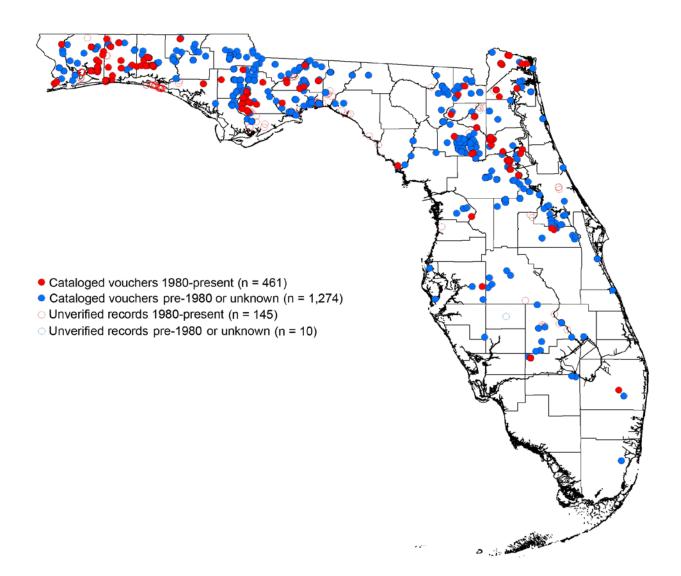
### Eurycea quadridigitata complex (Holbrook 1842)

#### **Dwarf Salamander**

Geographic Distribution: There are 1,735 vouchered records from 50 counties and additional unverified records from Hamilton (FWC survey of Big Shoals State Park), Hardee (Neill 1954), and Hernando (Enge and Wood 1999–2000) counties. This species likely occurs throughout Florida, except the Keys, although the lack of records from the southwestern peninsula may indicate a distributional gap. No records exist from Broward, Charlotte, Collier, DeSoto, Flagler, Lafayette, Lee, Martin, Monroe, Osceola, Pasco, St. Lucie, Sarasota, and Suwannee counties.

**Earliest Known Voucher**: 1892 (USNM 21328). Cope (1871) reported that C. J. Maynard collected a specimen from Jacksonville, Duval County, in 1869 for the Museum of the Peabody Academy of Science.

**Taxonomy:** The taxonomy of *Eurycea quadridigitata* is currently unresolved (Bonett and Chippindale 2005). The recently described Chamberlain's dwarf salamander (*E. chamberlaini* Harrison and Guttman 2003) apparently occurs in Florida (Harrison 2005), and at least 2 other possible species are currently being investigated (D. B. Means, Coastal Plains Institute, personal communication; K. Wray, FSU, personal communication).





Photographs by D. Bruce Means (top) and Pierson Hill (bottom).

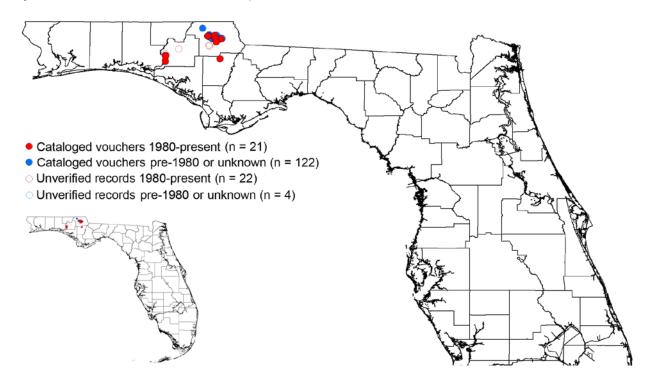
## Eurycea wallacei Carr 1939

## Georgia Blind Salamander

**Geographic Distribution**: There are 143 vouchered records from 3 counties. The first *Eurycea wallacei* from Florida was collected in 1957 from Gerard's Cave in Jackson County (Pylka and Warren 1958). In Florida, this species occurs in subterranean waters associated with the Chipola River system at 22 sites in Jackson County and 1 site in Calhoun County as well as at 5 sites in the Holmes Creek system, Washington County (Morris 2006; FNAI records). Within its apparent range, no records exist from Bay and Washington counties.

Earliest Known Voucher: 1957 (UF 10966).

**Taxonomy:** Formerly comprised the monotypic genus *Haideotriton*, but Frost et al. (2006) synonomized *Haideotriton* with *Eurycea*.





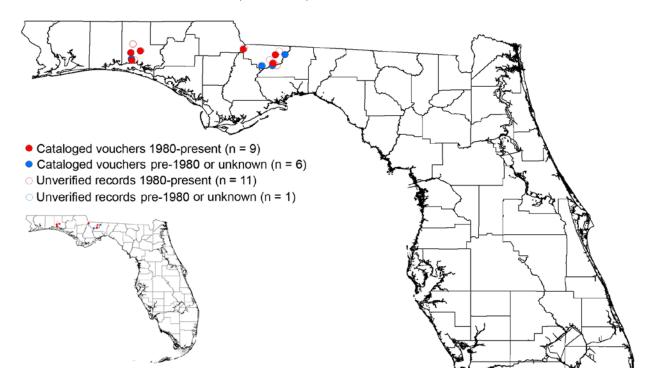
Photographs by Pierson Hill.

### Hemidactylium scutatum (Schlegel 1838)

### **Four-toed Salamander**

Geographic Distribution: There are 15 vouchered records from Gadsden, Leon, and Walton counties. The first specimen from Florida was collected in 1955 from Leon County (Stevenson 1958). Most records are from the Ochlockonee River drainage and from several small Choctawhatchee Bay tributary streams on Eglin Air Force Base. There is 1 specimen from the Apalachicola River drainage, Gadsden County (UF 165523). Within its apparent range, no record exists from Washington County.

Earliest Known Voucher: 1955 (UF 74150).





Photographs by John B. Jensen (top) and Kevin M. Enge (bottom).

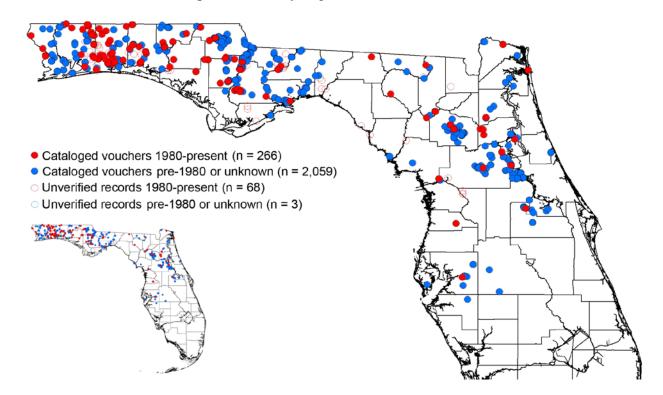
### Plethodon grobmani Allen and Neill 1949

## **Southeastern Slimy Salamander**

Geographic Distribution: There are 2,325 vouchered records from 38 counties and additional unverified records from Baker (Olustee Battlefield Historic State Park during an FWC survey), Sumter (Half Moon WMA during an FWC survey), and Taylor (Surdick et al. 2010) counties. This species occurs throughout the panhandle and as far south as Manatee and Polk counties in the peninsula. Within its apparent range, no records exist from Bradford, Citrus, Gilchrist, Lafayette, Pasco, and Union counties.

**Earliest Known Voucher**: 1915 (UF 171, 175, 224, 1248).

**Taxonomy:** Originally described as a subspecies of *Plethodon glutinosus* (Allen and Neill 1949) and elevated to full species status by Highton et al. (1989).





Photographs by Kenneth L. Krysko.

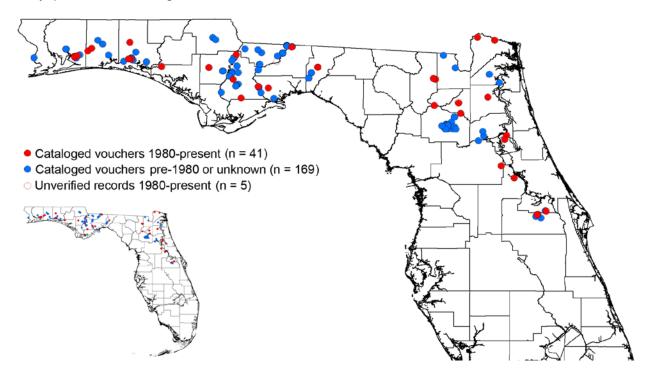
#### Pseudotriton montanus Baird 1849

#### **Mud Salamander**

**Geographic Distribution**: There are 210 vouchered records from 24 counties. This species occurs in the panhandle and in the peninsula from Columbia, Bradford, and Alachua counties east to Nassau and Duval counties and near the St. Johns River as far south as Orange County. It is apparently absent from the Big Bend region and along the Suwannee River. Within its apparent range, no records exist from Franklin, Gulf, Hamilton, Holmes, Madison, Union, and Washington counties.

Earliest Known Voucher: 1930 (UMMZ 68855).

**Taxonomy:** Two subspecies occur in Florida: Gulf Coast (*flavissimus* Hallowell 1856) and rusty (*floridanus* Netting and Goin 1942) mud salamanders.





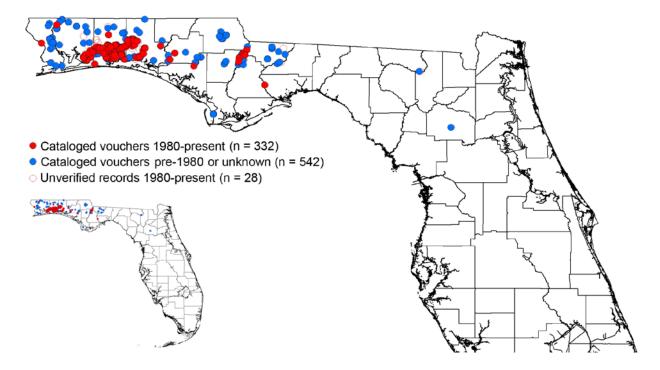
Photographs of *flavissimus* by John B. Jensen (top) and Todd W. Pierson (bottom).

## Pseudotriton ruber vioscai Bishop 1928

#### **Southern Red Salamander**

**Geographic Distribution:** There are 874 vouchered records from 16 counties. This species occurs in the panhandle as far east as the Ochlockonee River. The only site where the species is known to occur in the peninsula is in Big Shoals State Park, Hamilton County, where a voucher was collected in 1976 (UF 39310) and 8 specimens were caught in 1988–90 during an FWC survey. A single specimen putatively from Gainesville, Alachua County (CM 39454), probably does not represent a natural population.

Earliest Known Voucher: 1901 (ANSP 24080).





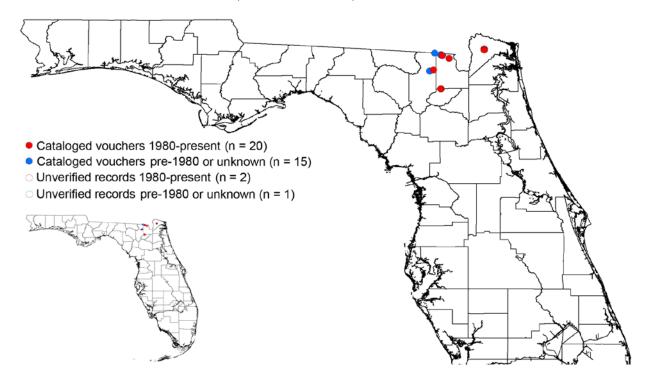
Photographs of juvenile by Pierson Hill (top) and adult by Kevin M. Enge (bottom).

## Stereochilus marginatus (Hallowell 1856)

# **Many-lined Salamander**

**Geographic Distribution:** There are 35 vouchered records from Baker, Columbia, Nassau, and Union counties. This species is apparently confined to the northeastern peninsula, which represents the southern extent of its range (Christman and Kochman 1975). Within its apparent range, no record exists from Duval County.

**Earliest Known Voucher**: 1973 (UF 32561–32564).





Photographs by Kevin Stohlgren (top) and Pierson Hill (bottom).

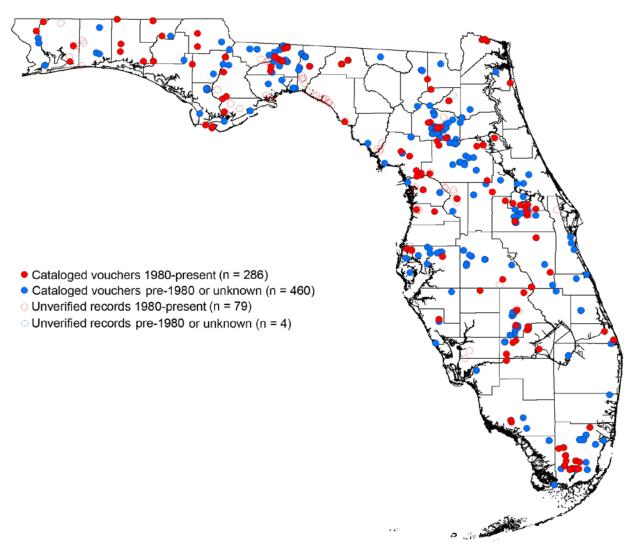
#### **FAMILY AMPHIUMIDAE**

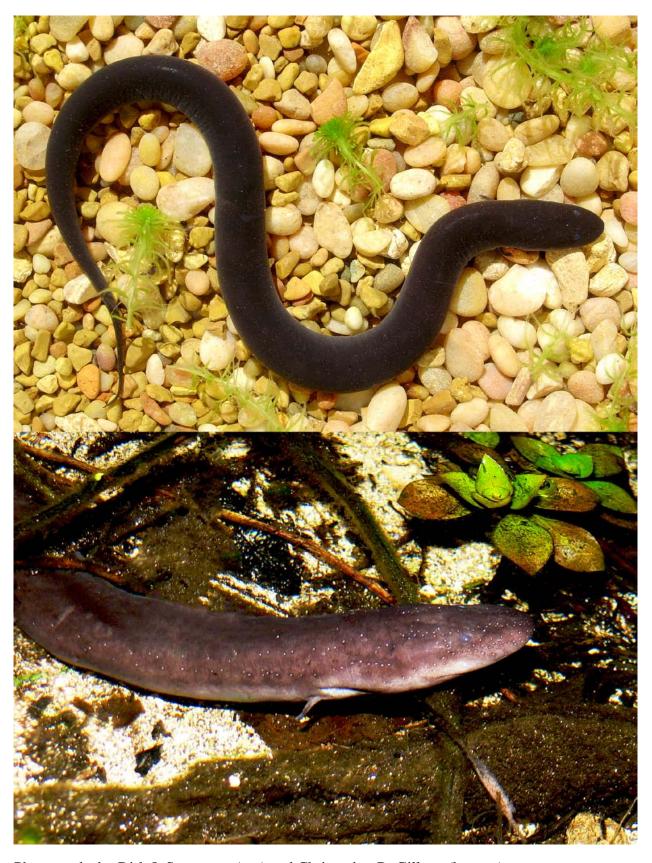
### Amphiuma means Garden 1821

## **Two-toed Amphiuma**

**Geographic Distribution:** There are 746 vouchered records from 60 counties and additional unverified records from Fred C. Babcock-Cecil M. Webb WMA, Charlotte County, during an FWC survey. This species likely occurs throughout the state, although no records exist from DeSoto, Flagler, Gilchrist, Lafayette, Pasco, and Suwannee counties.

Earliest Known Voucher: 1878 (USNM 9707).





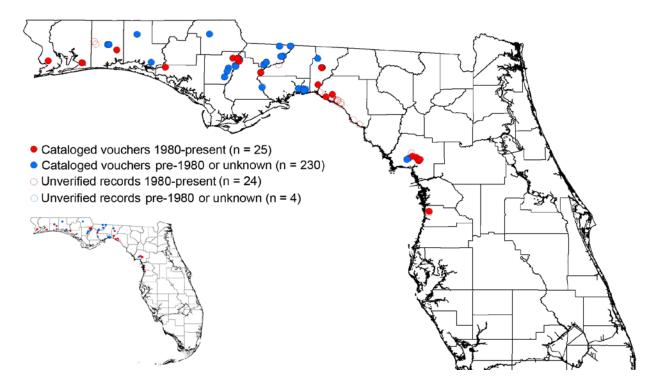
Photographs by Dirk J. Stevenson (top) and Christopher R. Gillette (bottom).

### Amphiuma pholeter Neill 1964

## **One-toed Amphiuma**

**Geographic Distribution**: There are 255 vouchered records from 15 counties. This species occurs in the panhandle and along the Gulf Coast as far south as Chassahowitzka Swamp, Hernando County. Within its apparent range, no records exist from Citrus, Dixie, Franklin, Gulf, Holmes, and Washington counties. Two specimens (UF 38647–48) from the Myakka River, Sarasota County, superficially resemble *A. pholeter* but have 2 weakly differentiated toes on the hind legs. Their taxonomy still needs to be determined.

Earliest Known Voucher: 1950 (AMNH 108503; UF 17655; USNM 160303).





Photographs by Pierson Hill (top) and Kevin Stohlgren (bottom).

#### **ORDER ANURA**

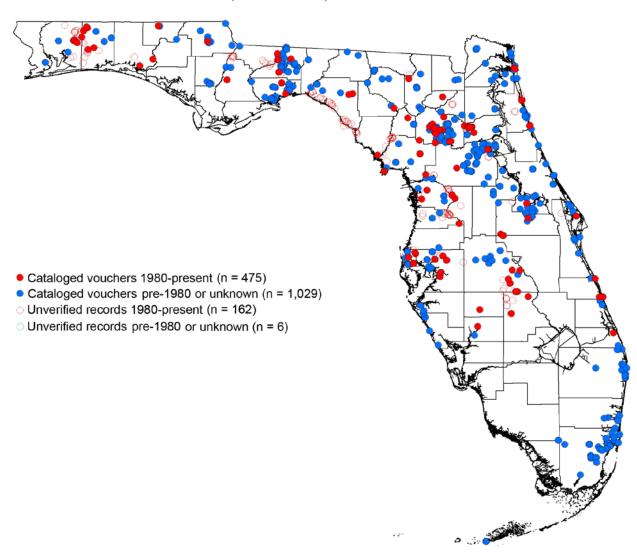
#### FAMILY SCAPHIOPODIDAE

## Scaphiopus holbrookii (Harlan 1835)

## **Eastern Spadefoot**

**Geographic Distribution:** There are 1,504 vouchered records from 57 counties and an additional unverified record from Hamilton County (Big Shoals State Park during an FWC survey). This species likely occurs throughout Florida, although no records exist from Bay, Charlotte, Franklin, Glades, Gulf, Hendry, Lee, Okeechobee, and Osceola counties.

Earliest Known Voucher: 1892 (USNM 57859).





Photographs by Kevin M. Enge (top left & right), Todd W. Pierson (center left), and Kenneth L. Krysko (center right, bottom left & right).

#### FAMILY RANIDAE

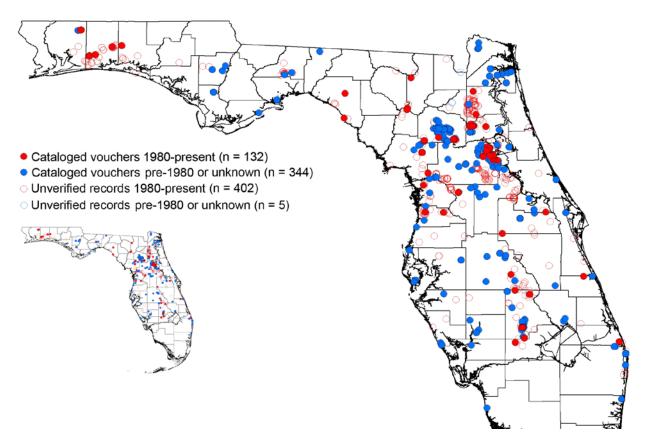
#### Lithobates capito (LeConte 1855)

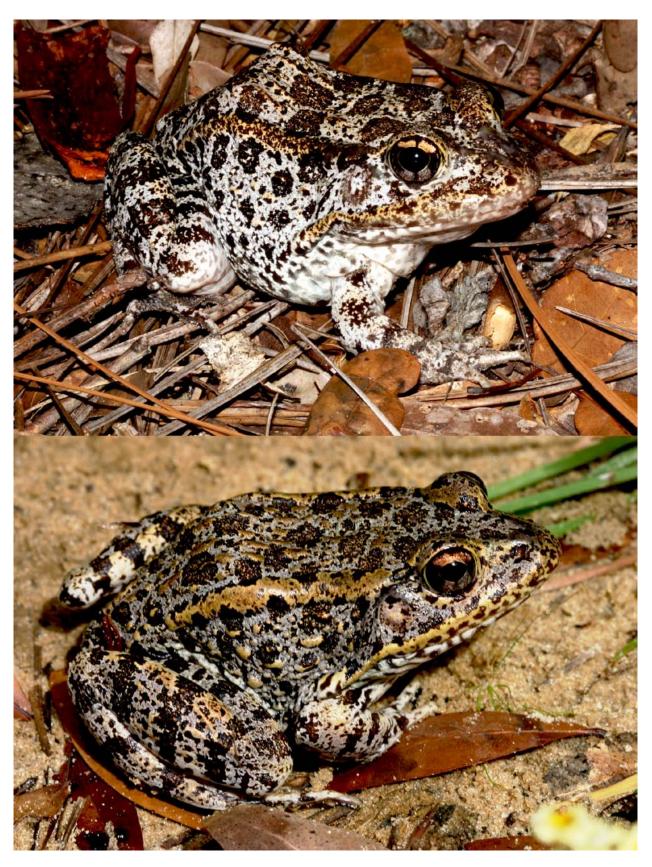
## **Gopher Frog**

Geographic Distribution: There are 476 vouchered records from 43 counties and unverified records from 8 additional counties. There are unverified records from Baker (Wright 1932; FNAI), Bradford (Vickers 1980), Hamilton (FNAI), Hardee (Concoby 2007), St. Johns (Faver-Dykes State Park during FWC surveys), St. Lucie (FNAI), Suwannee (FNAI), and Washington (FNAI) counties. This species likely once occurred throughout mainland Florida except for the Everglades and Miami Rock Ridge. Within its expected range, no records exist from Bay, Dixie, Escambia, Flagler, Gadsden, Holmes, Jackson, Lafayette, Lee, Liberty, Madison, and Union counties.

**Earliest Known Voucher:** 1893 (USNM 20513). Loennberg (1894) published the first account of the species in Florida.

**Taxonomy:** Formerly named *Rana capito*, but Frost et al. (2006) renamed all eastern North American *Rana* as *Lithobates*. It was once considered a subspecies of *Rana areolata*, but Young et al. (2001) recognized it as distinct from *R. areolata* (= *Lithobates areolatus*) and recognized no subspecies within *R. capito*.





Photographs by Kevin M. Enge.

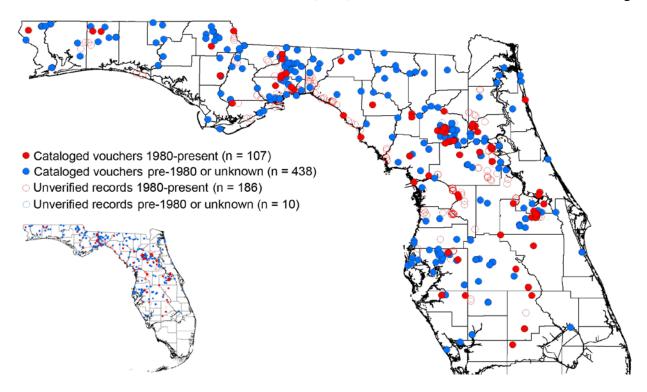
### Lithobates catesbeianus (Shaw 1802)

## **Bullfrog**

**Geographic Distribution:** There are 545 vouchered records from 52 counties and additional unverified records from Point Washington State Forest, Walton County (Hecht and Drayer 2008). This species likely occurs throughout Florida as far south as Charlotte, Highlands, Okeechobee, and Brevard counties, but no records exist from Bay, Flagler, Nassau, and Sarasota counties.

Earliest Known Voucher: 1884 (USNM 13927).

**Taxonomy:** Formerly named *Rana catesbeiana*, but Frost et al. (2006) renamed all eastern North American *Rana* as *Lithobates*. Crother (2008) used the common name American bullfrog.





Photographs by Kenneth L. Krysko.

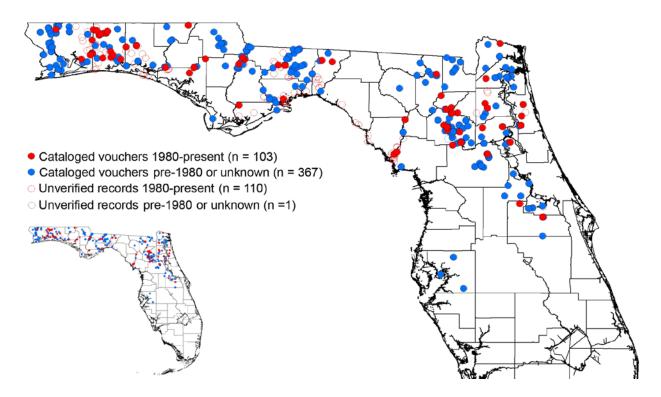
### Lithobates clamitans (Latreille 1801)

#### **Bronze Frog**

Geographic Distribution: There are 470 vouchered records from 36 counties and additional unverified records from Lower Suwannee National Wildlife Refuge (NWR) (Gunzburger et al. 2005), Dixie County, and Big Bend WMA, Taylor County (Enge and Wood 1998, Surdick et al. 2010). It occurs in the panhandle and peninsula as far south as Hillsborough and Orange counties. Within its apparent range, no records exist from Citrus, Flagler, Hernando, Lafayette, Madison, Pasco, and Sumter counties.

Earliest Known Voucher: 1897 (ANSP 27053).

**Taxonomy:** Formerly named *Rana clamitans*, but Frost et al. (2006) renamed all eastern North American *Rana* as *Lithobates*.





Photographs by Todd W. Pierson (top) and Joseph P. Burgess (bottom).

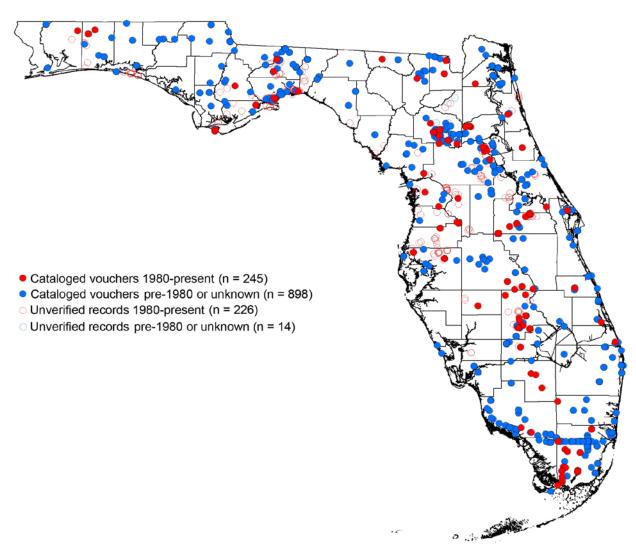
## Lithobates grylio (Stejneger 1901)

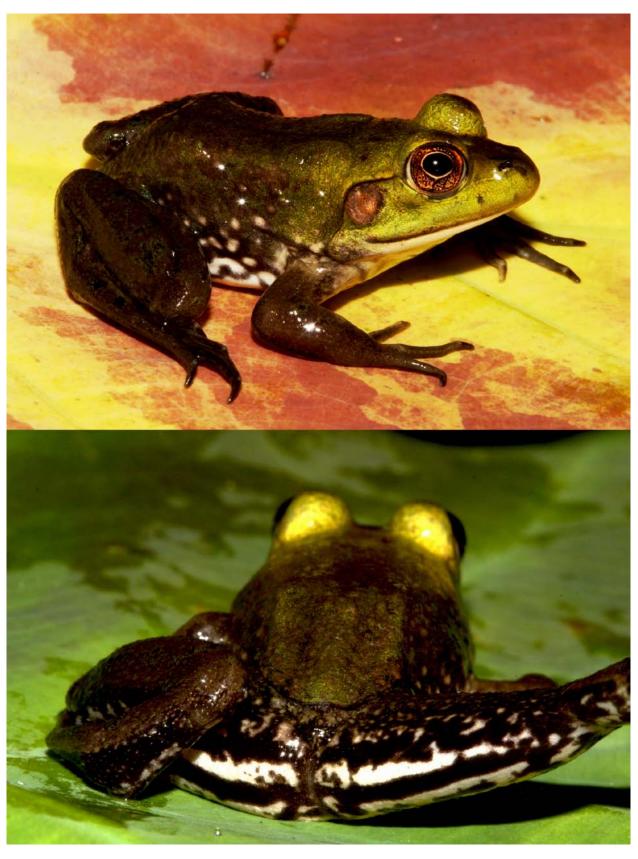
## Pig Frog

**Geographic Distribution:** There are 1,143 vouchered records from 60 counties and additional unverified records from Bradford County (Vickers 1980, Enge and Marion 1986). This species likely occurs throughout the state, although no records exist from DeSoto, Gilchrist, Lafayette, Manatee, Suwannee, and Union counties.

Earliest Known Voucher: 1893 (USNM 20030).

**Taxonomy:** Formerly named *Rana grylio*, but Frost et al. (2006) renamed all eastern North American *Rana* as *Lithobates*.





Photographs by Kevin M. Enge.

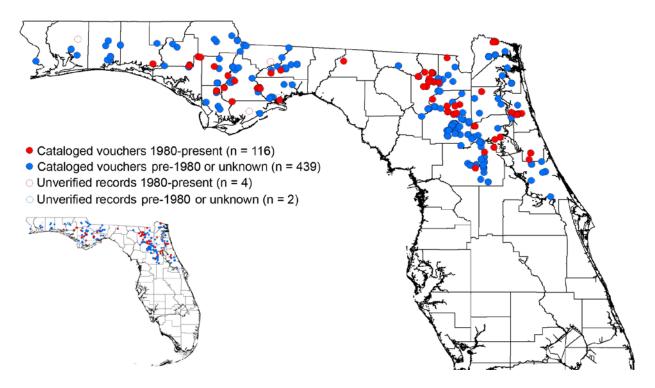
## Lithobates heckscheri (Wright 1924)

# **River Frog**

**Geographic Distribution:** There are 555 vouchered records from 31 counties. This species occurs in the panhandle and peninsula as far south as Marion and Volusia counties. Within its apparent range, no records exist from Dixie, Jefferson, Suwannee, and Taylor counties.

Earliest Known Voucher: 1918 (UF 325).

**Taxonomy:** Formerly named *Rana heckscheri*, but Frost et al. (2006) renamed all eastern North American *Rana* as *Lithobates*.





Photographs by Kevin M. Enge (top) and John B. Jensen (bottom).

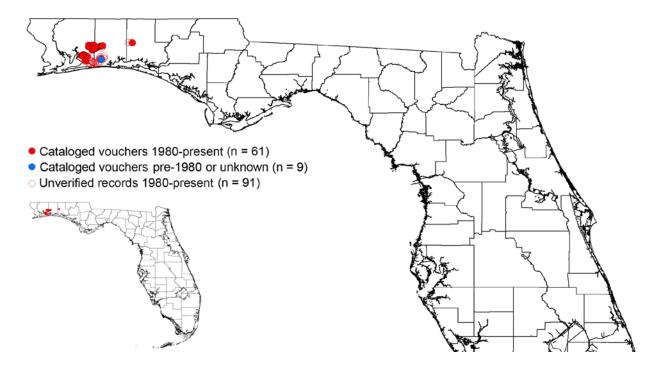
### Lithobates okaloosae (Moler 1985)

## Florida Bog Frog

**Geographic Distribution:** There are 70 vouchered records from Okaloosa, Santa Rosa, and Walton counties. The Walton County population appears to be disjunct from those in Okaloosa County. Repeated attempts to find bog frogs in the intervening drainages have been unsuccessful.

**Earliest Known Voucher:** 1982 (UF 53953–53956).

**Taxonomy:** Moler (1985a) discovered *Lithobates okaloosae* in 1982. Formerly named *Rana okaloosae*, but Frost et al. (2006) renamed all eastern North American *Rana* as *Lithobates*.





Photographs by Dirk J. Stevenson (top) and Kevin M. Enge (bottom).

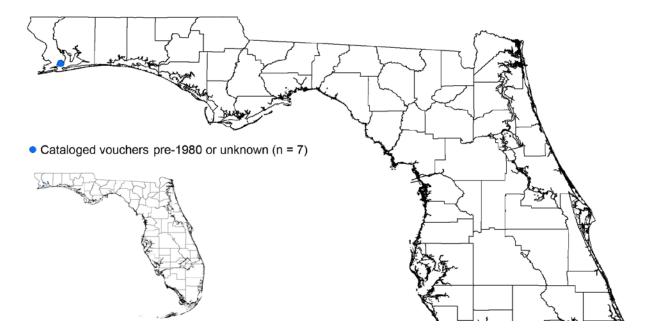
## Lithobates palustris (LeConte 1825)

## **Pickerel Frog**

**Geographic Distribution:** There are 7 vouchered specimens putatively from Pensacola, Escambia County. The nearest record to Florida is from a cave near Brooklyn, Alabama (Mount 1975), which is about 100 km northeast of Pensacola and 30 km north of Okaloosa and Santa Rosa counties, Florida. However, the species may not actually occur in Florida. These records are based on specimens found mixed in a jar with several *Lithobates clamitans*, and it is not clear if all were from the same locality.

Earliest Known Voucher: no date (USNM 292511–292517).

**Taxonomy:** Formerly named *Rana palustris*, but Frost et al. (2006) renamed all eastern North American *Rana* as *Lithobates*.





Photographs by Pierson Hill (top) and Kevin Stohlgren (bottom).

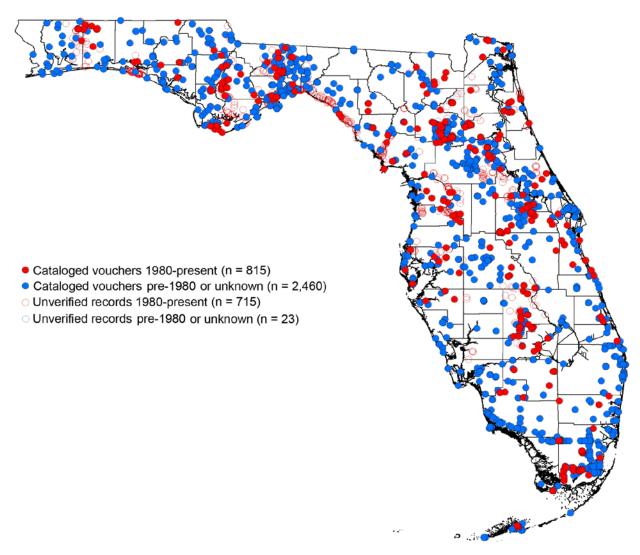
## Lithobates sphenocephalus (Cope 1886)

## **Southern Leopard Frog**

**Geographic Distribution:** There are 3,275 vouchered records from 66 counties. This species likely occurs throughout Florida, although no record exists from Flagler County.

Earliest Known Voucher: 1889 (USNM 46196).

**Taxonomy:** Formerly named *Rana sphenocephala*, but Frost et al. (2006) renamed all eastern North American *Rana* as *Lithobates*. There are 2 subspecies in Florida: Florida (*sphenocephalus* [Cope 1886]) and southern (*utricularius* [Harlan 1825]) leopard frogs.





Photographs by Kevin M. Enge (top) and Kenneth L. Krysko (bottom).

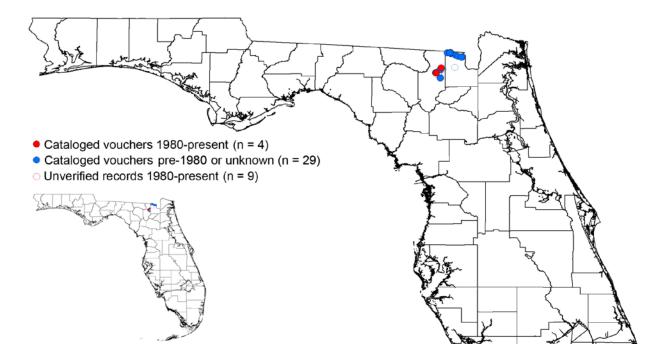
## Lithobates virgatipes (Cope 1891)

# **Carpenter Frog**

**Geographic Distribution:** There are 33 vouchered records from Baker and Columbia counties. Stevenson (1970) published the first account of the species in Florida.

Earliest Known Voucher: 1968 (UF 76216).

**Taxonomy:** Formerly named *Rana virgatipes*, but Frost et al. (2006) renamed all eastern North American *Rana* as *Lithobates*.





Photographs by Michael Graziano (top) and Pierson Hill (bottom).

#### FAMILY MICROHYLIDAE

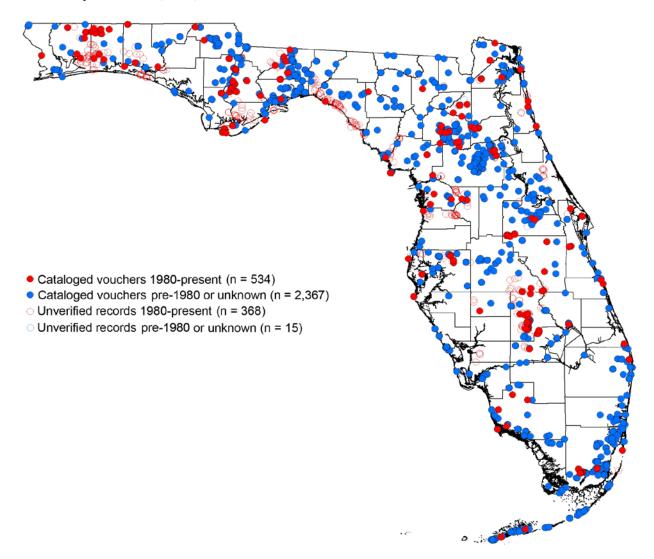
## Gastrophryne carolinensis (Holbrook 1836)

### **Eastern Narrowmouth Toad**

**Geographic Distribution:** There are 2,901 vouchered records from 66 counties. This species occurs throughout the state, although no record exists from DeSoto County.

Earliest Known Voucher: 1875 (USNM 9954, 38781, 38782).

**Taxonomy:** Crother (2008) used the common name eastern narrow-mouthed toad.





Photographs by Kenneth L. Krysko.

#### FAMILY BUFONIDAE

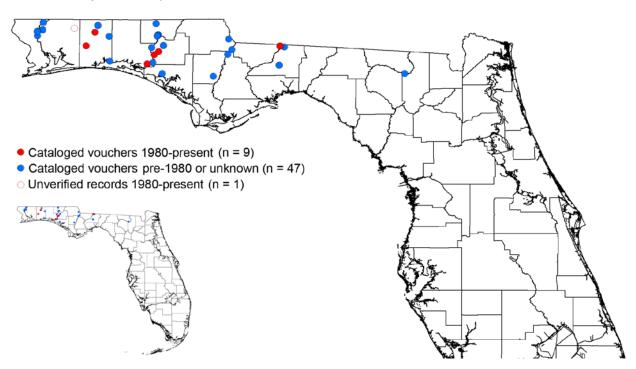
## Anaxyrus fowleri (Hinckley 1882)

### Fowler's Toad

**Geographic Distribution:** There are 56 vouchered records from 13 counties. Netting and Goin (1944) published the first account of the species in Florida. This species occurs along major river drainages in the panhandle from the Ochlockonee River westward. A 1938 voucher (CM 21637) from White Springs, Hamilton County, indicates that the species might also occur along the Suwannee River. In the panhandle, no records exist from Franklin, Gulf, and Wakulla counties.

Earliest Known Voucher: 1934 (UF 724).

**Taxonomy:** Previously a subspecies of *Bufo woodhousii*, but Masta et al. (2002) suggested full species status. Formerly named *Bufo fowleri*, but Frost et al. (2006) renamed most North American *Bufo* as *Anaxyrus*.





Photographs by Kevin M. Enge (top) and John B. Jensen (bottom).

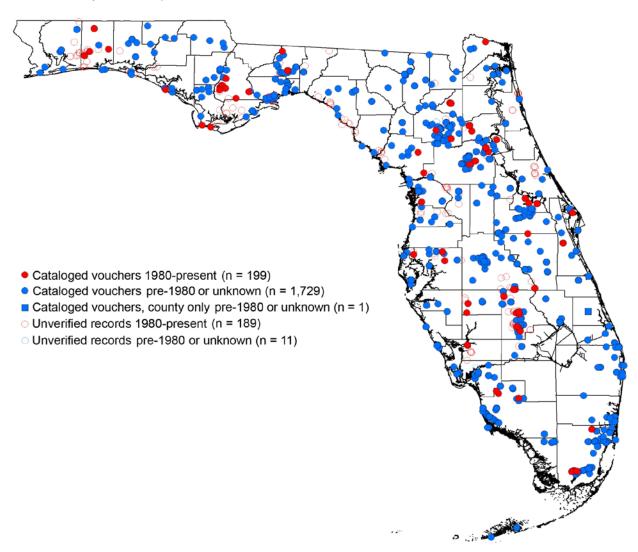
### Anaxyrus quercicus (Holbrook 1840)

### Oak Toad

**Geographic Distribution:** There are 1,928 vouchered records from 62 counties and an additional unverified record from Madison County (Punzo 1995). This species likely occurs throughout the state, although no records exist from DeSoto, Flagler, Gadsden, and Hendry counties.

**Earliest Known Voucher:** 1875 (USNM 9945, 535730, 535731).

**Taxonomy:** Formerly named *Bufo quercicus*, but Frost et al. (2006) renamed most North American *Bufo* as *Anaxyrus*.





Photographs by Pierson Hill (top) and Daniel Parker (bottom).

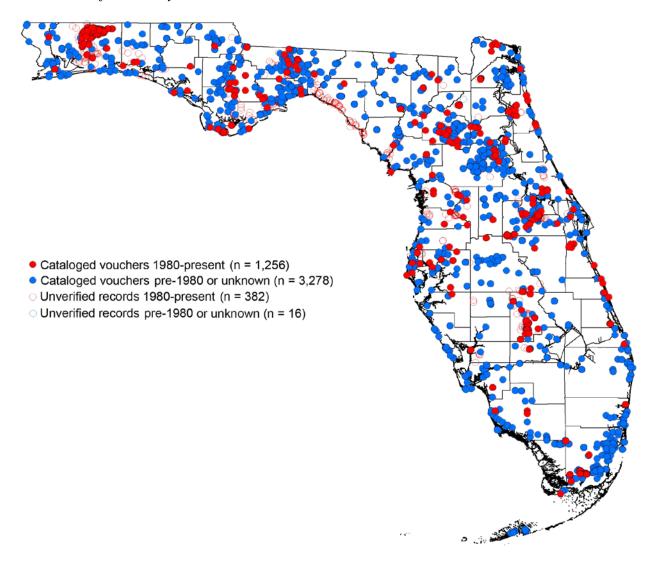
## Anaxyrus terrestris (Bonaterre 1789)

### **Southern Toad**

**Geographic Distribution:** There are 4,534 vouchered records from all 67 counties.

**Earliest Known Voucher:** 1875 (USNM 9952, 536448).

**Taxonomy:** Formerly named *Bufo terrestris*, but Frost et al. (2006) renamed most North American *Bufo* as *Anaxyrus*.





Photographs by Kenneth L. Krysko.

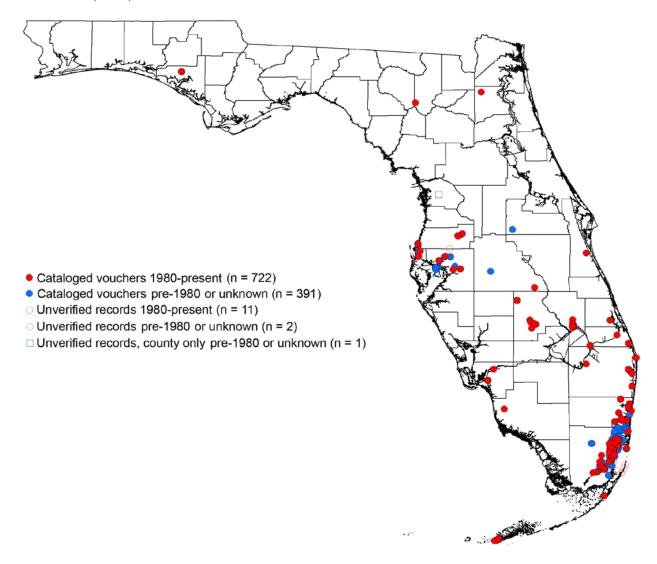
### Rhinella marina (Linnaeus 1758)

#### **Cane Toad (Non-native)**

Geographic Distribution: There are 1,113 vouchered records of this non-native species from 19 counties and additional unverified records from Citrus (Meshaka et al. 2004b), Hendry (Oliver 1949), and Sarasota (Riemer 1959) counties. The population in Panama City, Bay County, was reproducing (Himes 2007) but may have declined or been extirpated by recent severe winters. This species is native to the low and middle elevations of southeastern Texas, south to Peru and Central Brazil on the Atlantic versant, and from Sinaloa, Mexico to southern Ecuador on the Pacific slope, as well as the islands of Trinidad and Tobago.

### Earliest Known Voucher: 1955 (UMMZ 113000).

**Taxonomy:** Formerly named *Bufo marinus*, but the genus *Rhinella*, of predominantly South American toads, was recently delimited by Chaparro et al. (2007) to reflect phylogenetic results of Pramuk (2006).





Photographs by Kenneth L. Krysko (top) and Kevin M. Enge (bottom).

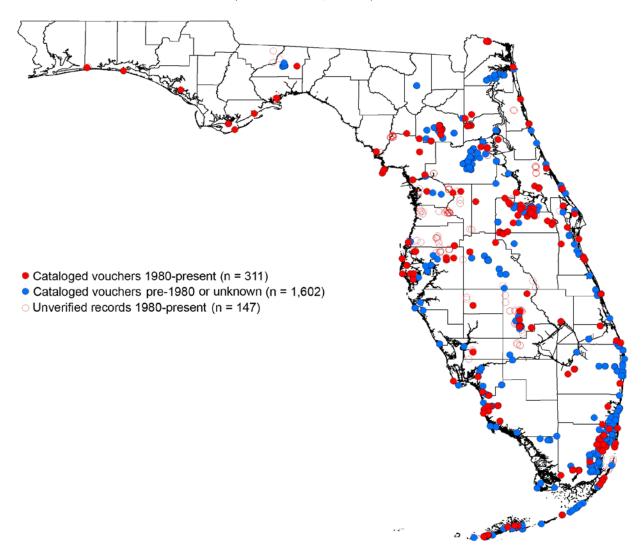
#### FAMILY ELEUTHERODACTYLIDAE

#### Eleutherodactylus planirostris (Cope 1862)

### **Greenhouse Frog (Non-native)**

Geographic Distribution: There are 1,913 vouchered records of this non-native species from 47 counties and additional unverified records from Gadsden and Hernando counties. The Gadsden County records are from Havana (Enge 1998) and Joe Budd WMA during FWC surveys, and the Hernando County records are from Chassahowitzka WMA (Enge and Wood 1999–2000), Chinsegut Nature Center (Enge and Wood 2001), and Croom WMA during FWC surveys. Cope (1863) first reported its presence in southern Florida. This species is likely more widespread in the peninsula than indicated on the map, which has no records between the Suwannee and Aucilla rivers, except for coastal Dixie County. All panhandle records are from coastal areas, except for Leon and Gadsden counties. This species is native to Cuba, the Cayman Islands, the Bahamas, San Salvador, and many other Caribbean islands.

**Earliest Known Voucher:** 1894 (ANSP 15307, 15308).





Photographs by Kenneth L. Krysko (top) and Kevin M. Enge (bottom).

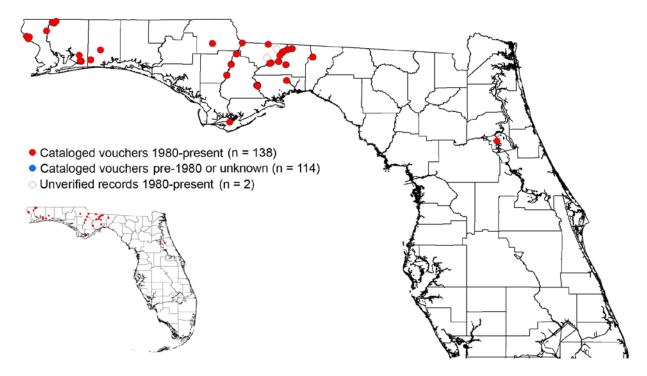
### FAMILY HYLIDAE

## Acris crepitans Baird 1854

## **Eastern Cricket Frog**

**Geographic Distribution**: There are 252 vouchered records from 10 counties. This species occurs in the panhandle west of the Aucilla River. Within its apparent range, no records exist from Bay, Calhoun, Gulf, Holmes, Walton, and Washington counties.

Earliest Known Voucher: 1930 (AMNH 50877).





Photographs by Daniel Parker (top) and Pierson Hill (bottom).

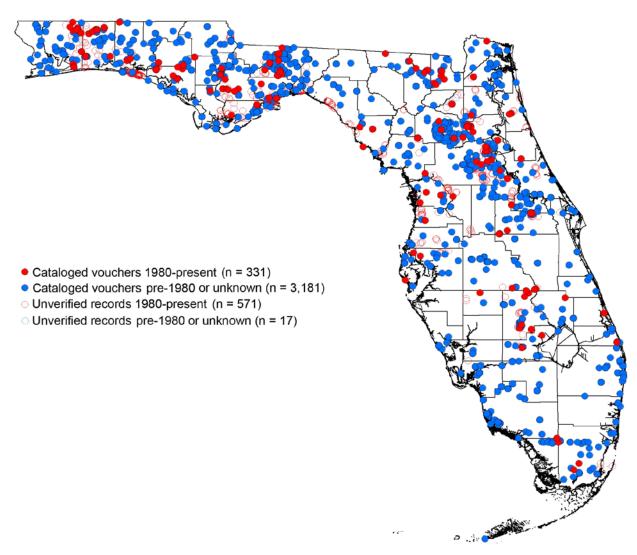
### Acris gryllus (LeConte 1825)

## **Southern Cricket Frog**

**Geographic Distribution:** There are 3,512 vouchered records from 65 counties. This species likely occurs throughout the state, although no records exist from DeSoto and Manatee counties.

**Earliest Known Voucher**: 1886 (ANSP 2000–2002; USNM 80151–80156).

**Taxonomy:** There are 2 subspecies in Florida: Florida (*dorsalis* [Harlan 1827]) and southern (*gryllus* [LeConte 1825]) cricket frogs. Crother (2008) used the common name Coastal Plain cricket frog for the *gryllus* subspecies.





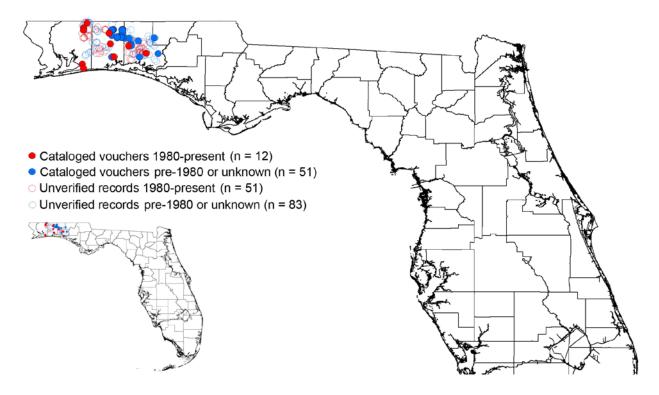
Photographs by Kenneth L. Krysko (top left & right, center right), John B. Jensen (center left), Kevin M. Enge (bottom left), and Todd W. Pierson (bottom right).

## Hyla andersonii Baird 1854

## **Pine Barrens Treefrog**

**Geographic Distribution:** There are 63 vouchered records from Holmes, Okaloosa, Santa Rosa, and Walton counties. Christman (1970) published the first account of the species in Florida.

Earliest Known Voucher: 1970 (UF 28147).





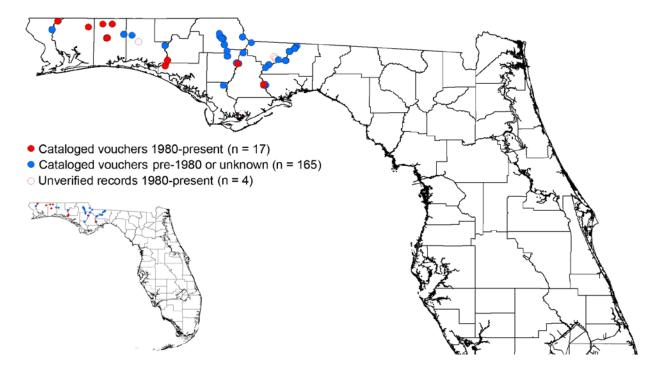
Photographs by Dustin C. Smith (top) and Aubrey M. Heupel (bottom).

## Hyla avivoca Viosca 1928

## Western Bird-voiced Treefrog

**Geographic Distribution:** There are 182 vouchered records from 13 counties and an additional unverified record from Apalachicola River Wildlife and Environmental Area, Franklin County (FWC 2008). This species occurs in the panhandle from the Ochlockonee River westward, but there is no record from Holmes County.

**Earliest Known Voucher:** 1933 (UF 12).





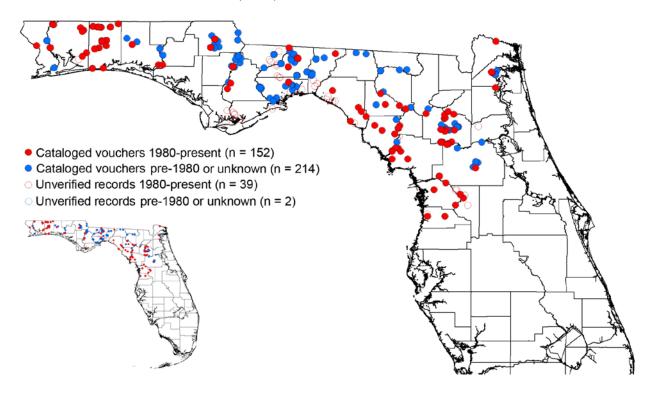
Photographs by Kenneth L. Krysko (top) and Kevin M. Enge (bottom).

### Hyla chrysoscelis Cope 1880

## **Cope's Gray Treefrog**

Geographic Distribution: There are 366 vouchered records from 30 counties and unverified records from 3 additional counties. The unverified records are from Franklin (Warner and Dunson 1998, FWC 2008), Gulf (FWC 2008), and Putnam (Dodd 1992) counties. This species occurs from the panhandle east to the St. Johns River and south to Hernando, Sumter, and Marion counties. Within its apparent range, no records exist from Baker, Bay, Holmes, and Union counties.

Earliest Known Voucher: 1930 (UF 8).





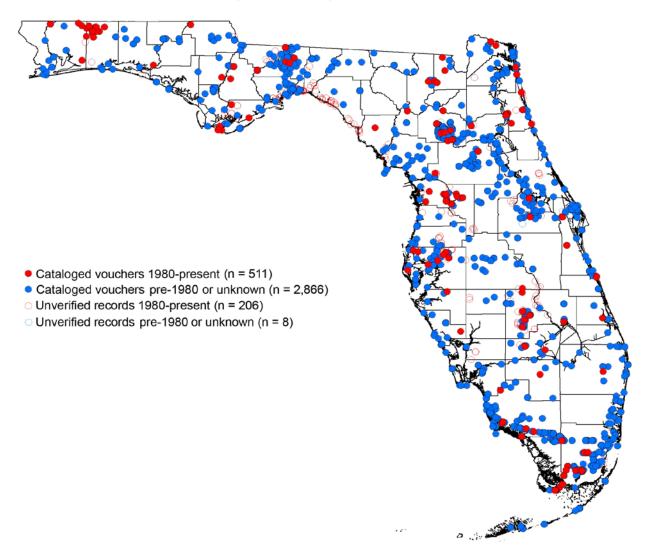
Photographs by Kevin M. Enge (top) and Kenneth L. Krysko (bottom).

# Hyla cinerea (Schneider 1799)

# **Green Treefrog**

**Geographic Distribution:** There are 3,377 vouchered records from 64 counties. This species likely occurs throughout the state, although no records exist from DeSoto, Lafayette, and Suwannee counties.

Earliest Known Voucher: 1832 (USNM 85366).





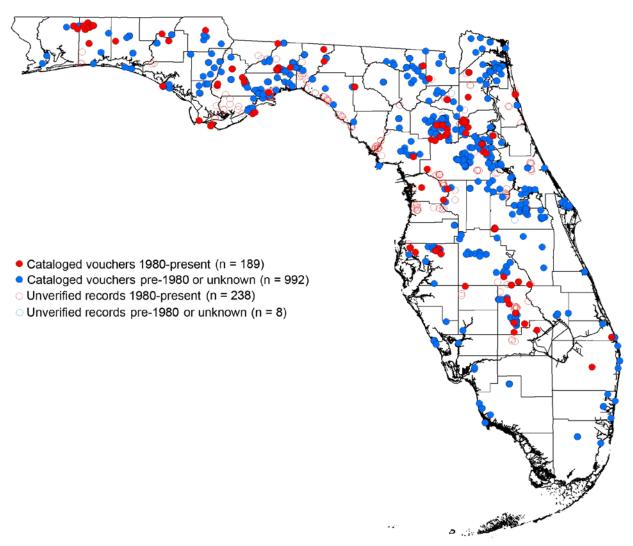
Photographs by Kenneth L. Krysko (top) and Heather Jones (bottom).

### Hyla femoralis Bosc 1800

## **Pine Woods Treefrog**

**Geographic Distribution:** There are 1,181 vouchered records from 60 counties and additional unverified records from Dixie (Gunzburger et al. 2005), Gadsden (Enge et al. 1996), and Hernando (Enge and Wood 1999–2000, 2001) counties. This species likely occurs throughout Florida except the Keys, although no records exist from Flagler, Hendry, Manatee, Monroe, and St. Lucie counties.

Earliest Known Voucher: 1896 (ANSP 13856).





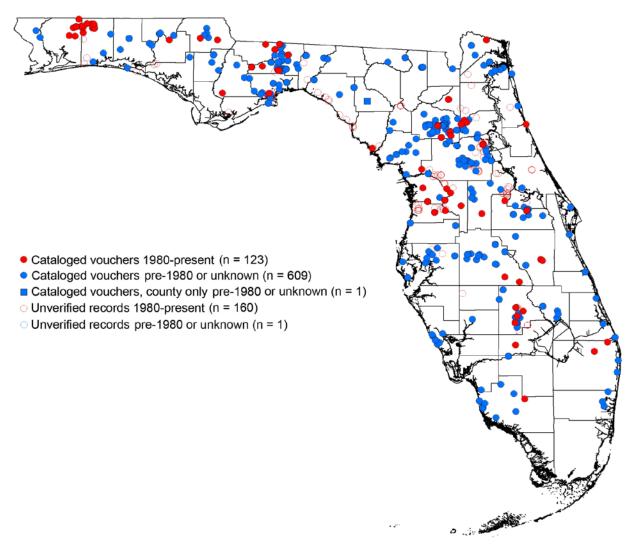
Photographs by D. Bruce Means (top left), Kenneth L. Krysko (top right, center right, bottom right), Kevin M. Enge (center left), and Todd W. Pierson (bottom left).

### Hyla gratiosa LeConte 1857

## **Barking Treefrog**

**Geographic Distribution:** There are 733 vouchered records from 59 counties and additional unverified records from Clay (Camp Blanding Military Reservation and Jennings State Forest during FWC surveys) and Hardee (Concoby 2007) counties. This species likely occurs throughout Florida except for the Everglades and Keys. Within its apparent range, no records exist from Gulf, Manatee, Suwannee, and Union counties.

Earliest Known Voucher: 1868 (YPM 1608).





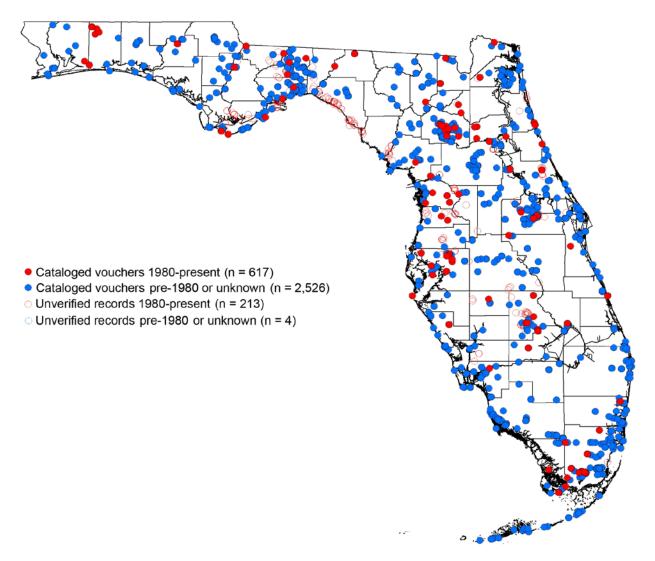
Photographs by Kevin M. Enge (top), and Kenneth L. Krysko (bottom).

# Hyla squirella Bosc 1800

# **Squirrel Treefrog**

**Geographic Distribution:** There 3,143 vouchered records from 65 counties. This species likely occurs throughout the state, although no records exist from Clay and St. Lucie counties.

Earliest Known Voucher: 1875 (USNM 9955).





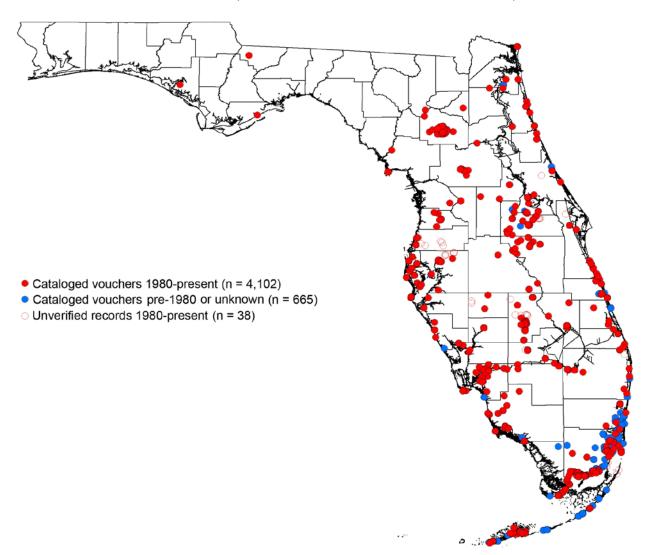
Photographs by Kenneth L. Krysko (top) and Kevin M. Enge (bottom).

### Osteopilus septentrionalis (Duméril and Bibron 1841)

## **Cuban Treefrog (Non-native)**

**Geographic Distribution:** There are 4,767 vouchered records of this non-native species from 45 counties. We omitted additional unverified records from Leon and Washington counties (Ashton 1976). Barbour (1931) reported that the first reliable observations from Key West, Monroe County, were ca. 1928, but some adult residents believed they had observed the species as children. This species likely occurs in most peninsular counties. It is native to Cuba and surrounding islands, the Cayman Islands, and the Bahamas.

**Earliest Known Voucher:** 1931 (MCZ 17330–17332; USNM 85390–85391).





Photographs by Kenneth L. Krysko.

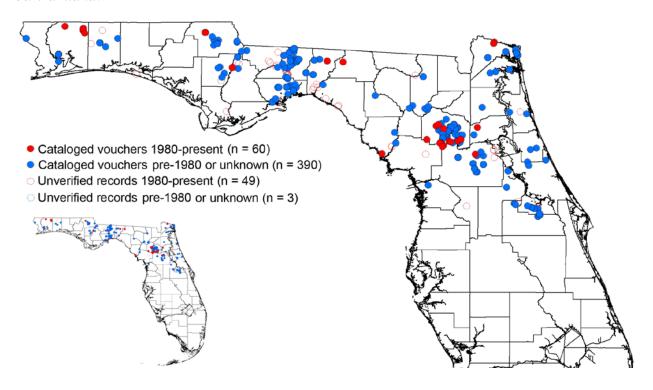
### Pseudacris crucifer (Wied-Neuwied 1838)

#### **Spring Peeper**

Geographic Distribution: There are 450 vouchered records from 29 counties and unverified records from 4 additional counties. The unverified records were found during FWC surveys in Gulf (Apalachicola River Wildlife and Environmental Area), Hamilton (Big Shoals State Park), Sumter (Lake Panasoffkee), and Walton (Point Washington State Forest) counties. This species occurs in the panhandle and in the peninsula as far south as Citrus, Sumter, Lake, and Orange counties. Within its apparent range, no records exist from Baker, Bay, Bradford, Franklin, Gilchrist, Hernando, Holmes, Suwannee, Union, and Washington counties.

**Earliest Known Voucher:** 1923 (AMNH 11376–11388).

**Taxonomy:** Moriarty and Cannatella (2004) rejected the former subspecies *Pseudacris c. bartramiana*.





Photographs by D. Bruce Means (top) and Todd W. Pierson (bottom).

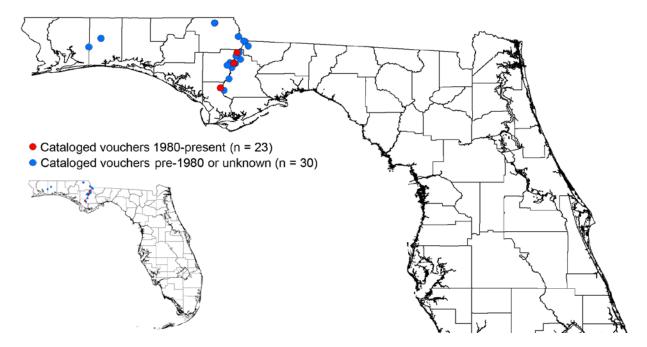
# Pseudacris feriarum (Baird 1854)

# **Upland Chorus Frog**

**Geographic Distribution:** There are 53 vouchered records from Calhoun, Gadsden, Gulf, Jackson, Liberty, and Okaloosa counties. This species occurs in the Apalachicola and Yellow river drainages in the panhandle.

Earliest Known Voucher: 1931 (CMNH 1361).

**Taxonomy:** Formerly *Pseudacris triseriata feriarum*, but Lemmon et al. (2007) confirmed Hedges' (1986) findings that *P. feriarum* is a distinct species.





Photographs by D. Bruce Means.

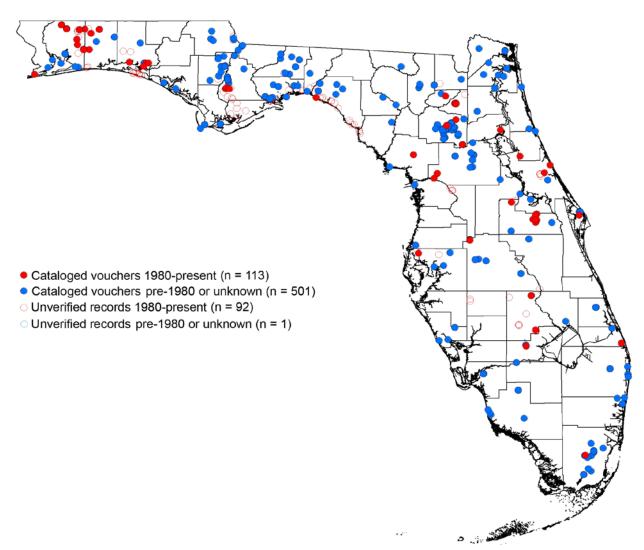
### Pseudacris nigrita (LeConte 1825)

### **Southern Chorus Frog**

Geographic Distribution: There are 614 vouchered records from 54 counties and additional unverified records from Hardee (Concoby 2007) and Sumter (found during FWC surveys of Half Moon WMA) counties. This species likely occurs throughout Florida except the Florida Keys, but no records exist from Charlotte, DeSoto, Gilchrist, Hernando, Holmes, Indian River, Madison, Manatee, Monroe, Suwannee, and Washington counties.

Earliest Known Voucher: 1912 (USNM 49437).

**Taxonomy:** Florida formerly had 2 subspecies, the southern (*nigrita* [LeConte 1825]) and Florida (*verrucosa* [Cope 1877]) chorus frogs, but these were rejected by Moriarty and Cannatella 2004).





Photographs by Pierson Hill (top left & right), Kevin M. Enge (center left), Dirk J. Stevenson (center right), and Todd W. Pierson (bottom left & right).

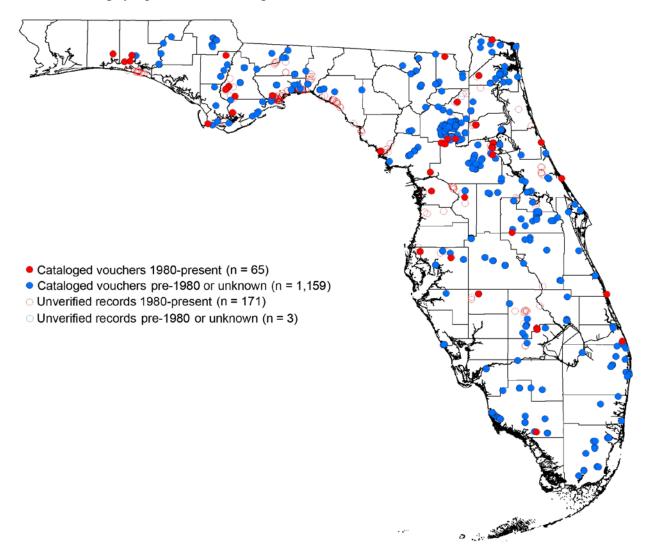
#### Pseudacris ocularis (Bosc and Daudin 1801)

#### **Little Grass Frog**

Geographic Distribution: There are 1,224 vouchered records from 54 counties and additional unverified records from Hernando (Enge and Wood 1999–2000, 2001) and St. Johns (Means and Means 2008, FWC survey of Faver-Dykes State Park) counties. This species likely occurs throughout the peninsula and in the panhandle as far west as Okaloosa County, although no records exist within its apparent range from Bay, Charlotte, DeSoto, Lafayette, Madison, Pasco, St. Lucie, and Suwannee counties.

Earliest Known Voucher: 1920 (CM 3784).

**Taxonomy:** Formerly named *Limnaoedus ocularis*, but Hedges (1986) placed it in *Pseudacris* and discussed phylogenetic relationships.





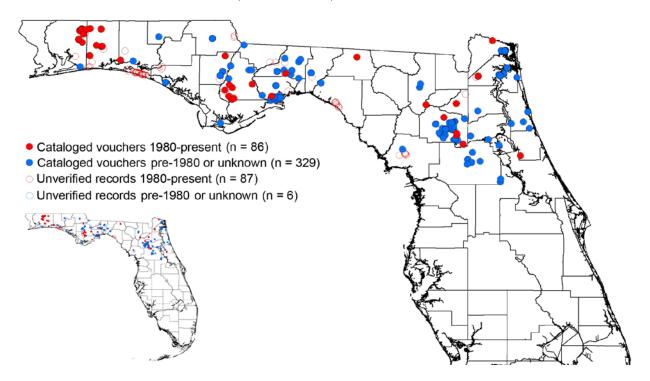
Photographs by Kevin M. Enge (top) and John B. Jensen (bottom).

### Pseudacris ornata (Holbrook 1836)

## **Ornate Chorus Frog**

Geographic Distribution: There are 415 vouchered records from 27 counties and an additional unverified record from Washington County (Kovatch and Smolinski 2004). This species occurs in the panhandle and in the peninsula as far south as northern Lake and Flagler counties. Within its apparent range, no records exist from Baker, Dixie, Escambia, Gilchrist, Gulf, Hamilton, Lafayette, Suwannee, and Union counties. Populations appear to have declined in much of the peninsula during recent decades, perhaps due to a series of prolonged droughts.

Earliest Known Voucher: 1901 (USNM 29189).





Photographs by Aubrey M. Heupel (top) and Kenneth L. Krysko (bottom).

#### **ORDER TESTUDINES**

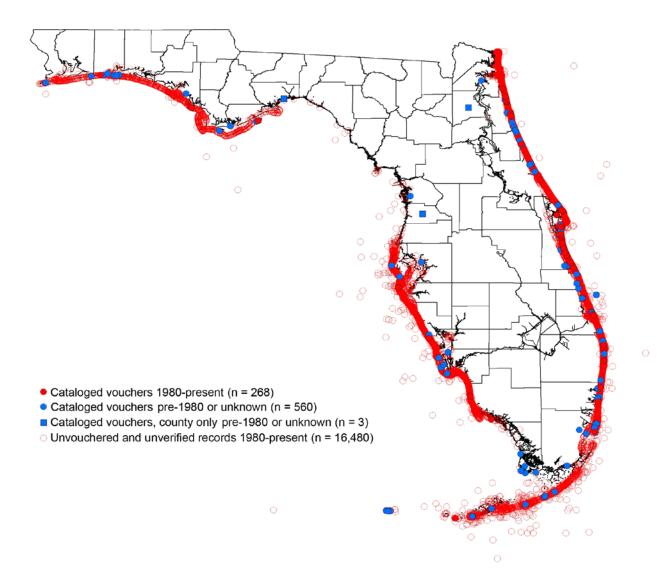
#### FAMILY CHELONIDAE

#### Caretta caretta (Linnaeus 1758)

#### Loggerhead Sea Turtle

Geographic Distribution: There are 831 vouchered records from 25 counties and unvouchered records from 10 additional counties. Records exist from every coastal county except Jefferson, and there is an 1897 voucher (USNM 55729) from Clay County with no locality data that presumably was found in the St. Johns River. Approximately 80% of the annual nests in the United States occur in Brevard, Indian River, St. Lucie, Martin, Palm Beach, and Broward counties (Witherington et al. 2006b). According to FWC's Statewide Nesting Beach Survey database, nesting has been recorded in every coastal county except for the Big Bend region from Wakulla to Pasco counties. Unvouchered records from this particular database are mapped at the center points of known nesting beaches. Most of the unvouchered records came from FWC's Sea Turtle Salvage and Stranding Network database, and locations may be far from where living, healthy animals occur because carcasses or debilitated sea turtles can drift for great distances (A. M. Foley, personal communication). The number of locations can also be biased based on shoreline type and proximity to developed areas, because relatively few observations of stranded turtles are made along remote, often marshy coastlines (A. M. Foley, personal communication).

Earliest Recorded Voucher: 1873 (USNM 220762).





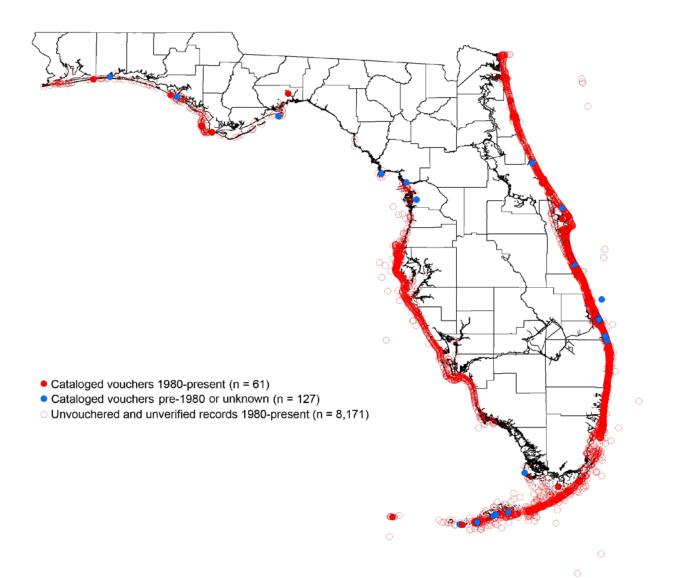
Photographs of hatchling by Barry Mansell (top) and adult by Mote Marine Laboratory (bottom).

### Chelonia mydas (Linnaeus 1758)

#### **Green Sea Turtle**

Geographic Distribution: There are 188 vouchered records from 15 counties and unvouchered records from 18 additional counties. Records exist from every coastal county except Dixie and Taylor. Nesting has been recorded in every coastal county except for the Big Bend region from Wakulla to Pasco counties, with 99% of nesting occurring along the Atlantic Coast, particularly Brevard through Broward counties (Witherington et al. 2006a). Some of the unvouchered records came from FWC's Statewide Nesting Beach Survey database and represent the center points of known nesting beaches. Most of the unvouchered records came from FWC's Sea Turtle Salvage and Stranding Network database, and locations may be far from where living, healthy animals occur because carcasses or debilitated sea turtles can drift for great distances (A. M. Foley, personal communication). The number of locations can also be biased based on shoreline type and proximity to developed areas, because relatively few observations of stranded turtles are made along remote, often marshy coastlines (A. M. Foley, personal communication).

Earliest Recorded Voucher: 1930 (FMNH 11231).





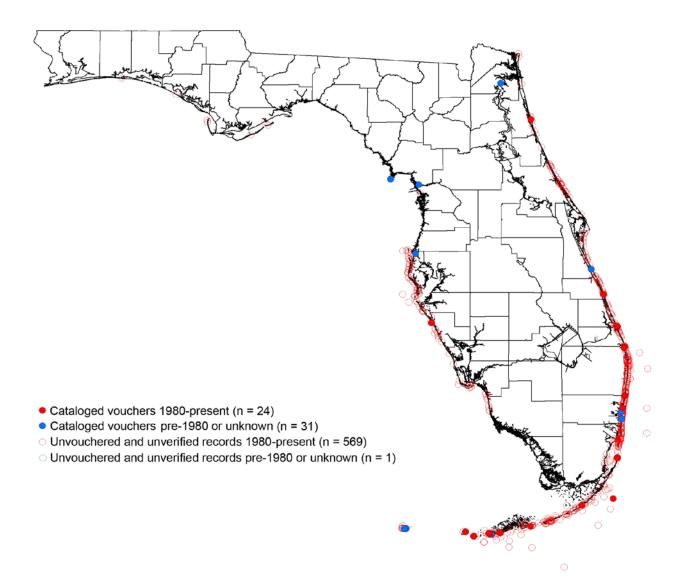
Photographs of hatchling by Peter Janzen (top) and adult by Caroline S. Rogers (bottom).

### Eretmochelys imbricata (Linnaeus 1766)

#### **Atlantic Hawksbill Sea Turtle**

Geographic Distribution: There are 55 vouchered records from 13 counties and unvouchered records from 12 additional counties. Records exist from every coastal county except Citrus, Dixie, Escambia, Hernando, Jefferson, Pasco, Santa Rosa, Taylor, Wakulla, and Walton. This species rarely nests in Florida, with 4 nests being the maximum recorded in any 1 year from 1979 through 2003 (Meylan and Redlow 2006). According to FWC's Statewide Nesting Beach Survey database, nesting has occurred along the Atlantic Coast in Volusia, Martin, Palm Beach, and Broward counties. Nesting has also occurred in Manatee County and on Boca Grande Key, Bahia Honda Key, and the Marquesas Keys in Monroe County. Most of the unvouchered records came from FWC's Sea Turtle Salvage and Stranding Network database, and locations may be far from where living, healthy animals occur because carcasses or debilitated sea turtles can drift for great distances (A. M. Foley, personal communication). The number of locations can also be biased based on shoreline type and proximity to developed areas, because relatively few observations of stranded turtles are made along remote, often marshy coastlines (A. M. Foley, personal communication).

Earliest Recorded Voucher: 1901 (USNM 43182).





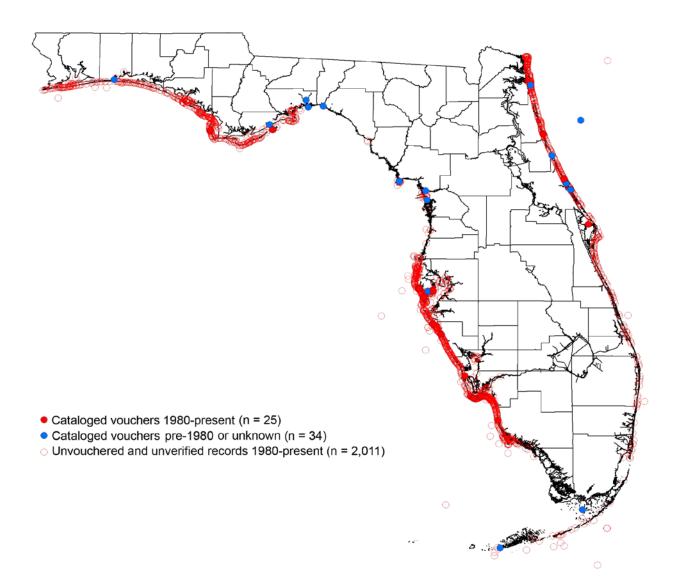
Photographs of hatchling by Peter Janzen (top) and adult by Caroline S. Rogers (bottom).

### Lepidochelys kempii (Garman 1880)

## Kemp's Ridley Sea Turtle

Geographic Distribution: There are 59 vouchered records from 17 counties and unvouchered records from 17 additional counties. Records exist from every coastal county except Jefferson. This species nests only sporadically in Florida, but frequently uses nearshore waters (Schmid and Barichivich 2006). According to FWC's Statewide Nesting Beach Survey database, nesting has occurred along the Gulf Coast from Escambia to Walton counties and in Gulf, Franklin, Pinellas, Sarasota, and Charlotte counties. Nesting has occurred along the Atlantic Coast in Volusia, Brevard, and Martin counties. Most of the unvouchered records came from FWC's Sea Turtle Salvage and Stranding Network database, and locations may be far from where living, healthy animals occur because carcasses or debilitated sea turtles can drift for great distances (A. M. Foley, personal communication). The number of locations can also be biased based on shoreline type and proximity to developed areas, because relatively few observations of stranded turtles are made along remote, often marshy coastlines (A. M. Foley, personal communication).

Earliest Recorded Voucher: 1942 (UF 6509).





Photographs of hatchling (top) and adult (bottom) by National Park Service.

## Lepidochelys olivacea (Eschscholtz 1829)

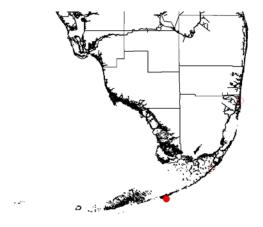
## Olive Ridley Sea Turtle

**Geographic Distribution**: There is 1 vouchered record from Hawk Channel near Vaca Key, Monroe County, in 1999. The 2 unvouchered records were in 2000–2001 off Key Largo, Monroe County, and from the beach (dead specimen) of Sunny Isles, just north of Miami, Miami-Dade Co (Foley et al. 2003). These represent the northernmost known records for this federally threatened species.

Earliest Recorded Voucher: 1999 (UF 135973).

- Cataloged vouchers 1980-present (n = 1)
- Unvouchered and unverified records 1980-present (n = 2)







Photographs by Guillaume Feuillet.

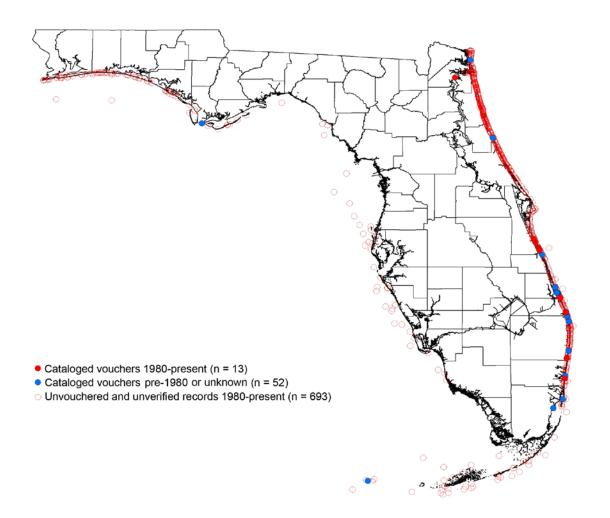
#### FAMILY DERMOCHELIDAE

#### Dermochelys coriacea (Vandelli 1761)

#### **Leatherback Sea Turtle**

Geographic Distribution: There are 65 vouchered records from 13 counties and unvouchered records from 14 additional counties. Records exist from every coastal county except Citrus, Hernando, Hillsborough, Jefferson, Levy, Pasco, Volusia, and Wakulla. Most nesting occurs along the Atlantic Coast, particularly in Palm Beach and Martin counties (Stewart and Johnson 2006). According to FWC's Statewide Nesting Beach Survey database, nesting has occurred along the Gulf Coast in Escambia, Walton, Bay, Gulf, Franklin, Sarasota, and Lee counties. Nesting has been recorded from every county along the Atlantic Coast and in the Dry Tortugas, Monroe County. Unverified records from this particular database are mapped at the center points of known nesting beaches. Most of the unvouchered records came from FWC's Sea Turtle Salvage and Stranding Network database, and locations may be far from where living, healthy animals occur because carcasses or debilitated sea turtles can drift for great distances (A. M. Foley, personal communication). The number of locations can also be biased based on shoreline type and proximity to developed areas, because relatively few observations of stranded turtles are made along remote, often marshy coastlines (A. M. Foley, personal communication).

Earliest Recorded Voucher: 1902 (AMNH 44647).





Photographs of hatchling by Guillaume Feuillet (top) and adult by Joseph P. Burgess (bottom).

#### **FAMILY CHELYDRIDAE**

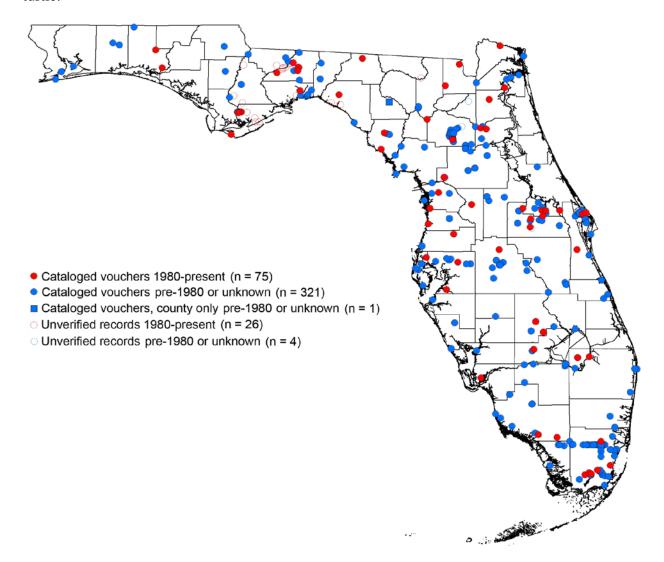
### Chelydra serpentina (Linnaeus 1758)

## **Common Snapping Turtle**

Geographic Distribution: There are 397 vouchered records from 55 counties and additional unverified records from Bradford (Vickers 1980) and Hamilton (FWC survey of Big Shoals State Park) counties. This species likely occurs throughout Florida except the Keys, although no records exist from Bay, DeSoto, Flagler, Gilchrist, Holmes, Martin, St. Johns, St. Lucie, Suwannee, Union, and Washington counties.

Earliest Recorded Voucher: 1879 (USNM 10369).

**Taxonomy:** There are 2 subspecies in Florida: Florida (*osceola* Stejneger 1918) and eastern (*serpentina* [Linnaeus 1758]) snapping turtles. Crother (2008) used the common name snapping turtle.





Photographs by Pierson Hill.

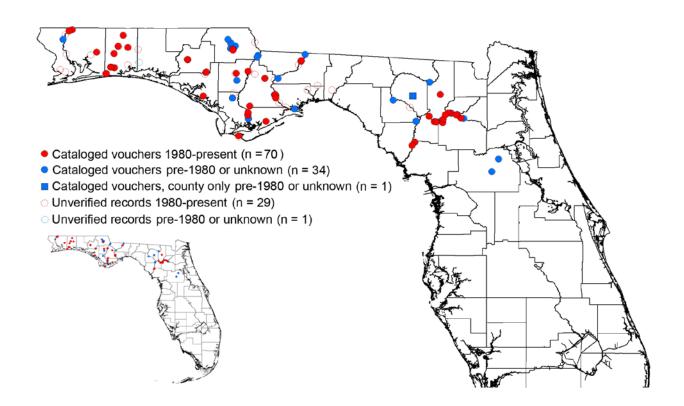
### Macrochelys temminckii complex (Troost in Harlan 1835)

#### **Alligator Snapping Turtle**

Geographic Distribution: There are 105 vouchered records from 24 counties and additional unverified records from Jefferson (Pritchard 1989) and Walton (FNAI) counties. This species occurs in all of the large river drainages in the panhandle from the Escambia River east to the Ochlockonee River (Ewert et al. 2006). This species also occurs in the Suwannee River drainage, but no vouchers exist from any rivers between the Suwannee and Ochlockonee. However, there are 2 undocumented sightings from the Wacissa River (Pritchard 1989), and FNAI records include a photo in the "Woods and Water" newspaper of a specimen reportedly from the Aucilla River, a dead specimen from the St. Marks River, and a live specimen observed in the Wakulla River. Within its apparent range, no records exist from Gilchrist, Holmes, and Madison counties. Vouchers from Eureka (AMNH 8287) and the Oklawaha River (KU 61844) in Marion County possibly represent introductions from Ross Allen's Reptile Institute at Silver Springs. The Eureka specimen is missing (D. R. Frost, AMNH, personal communication). Other released or escaped animals have been collected outside the known range of the species, but these localities are not mapped because no vouchers or reports exist. Individual specimens have been collected from Lake Wauberg, Alachua County; Jacksonville, Duval County; and the Alafia River, Hillsborough County (P. E. Moler, personal observation).

Earliest Recorded Voucher: 1923 (UF 57967).

**Taxonomy:** Webb (1995) demonstrated that the name *Macrochelys* has precedence over *Macroclemys*. Mitochondrial DNA suggests that populations in the Suwannee River drainage are distinct from those of other drainages (Roman et al. 1999). Recent morphological (T. M. Thomas [UF] and M. C. Granatosky [Duke], unpublished data) and molecular (Roman et al. 1999, Echelle et al. 2010) data suggest that 3 lineages exist from the Suwannee, central panhandle, and western panhandle drainages, possibly representing 3 species.





Photographs by Kevin M. Enge (top) and Michael R. Rochford (bottom).

#### FAMILY KINOSTERNIDAE

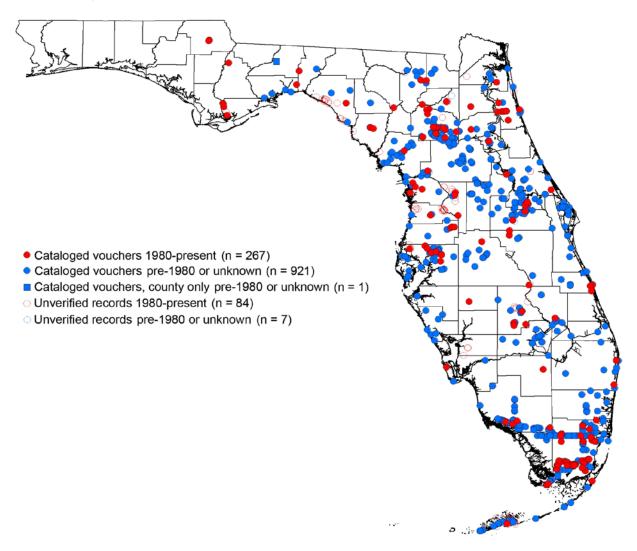
### Kinosternon baurii (Garman 1891)

### **Striped Mud Turtle**

**Geographic Distribution**: There are 1,189 vouchered records from 50 counties. This species occurs throughout the peninsula and in the panhandle as far west as the Apalachicola and Chipola river drainages. Within its apparent range, no records exist from Calhoun, Charlotte, DeSoto, Flagler, Gadsden, Madison, Nassau, St. Lucie, Suwannee, and Union counties.

Earliest Recorded Voucher: 1867 (TCWC 35592).

**Taxonomy:** The former Key mud turtle (*Kinosternon baurii palmarum*) is no longer recognized based upon morphological and genetic data (Iverson 1978, Lamb and Lovich 1990, Karl and Wilson 2001).





Photographs by Pierson Hill.

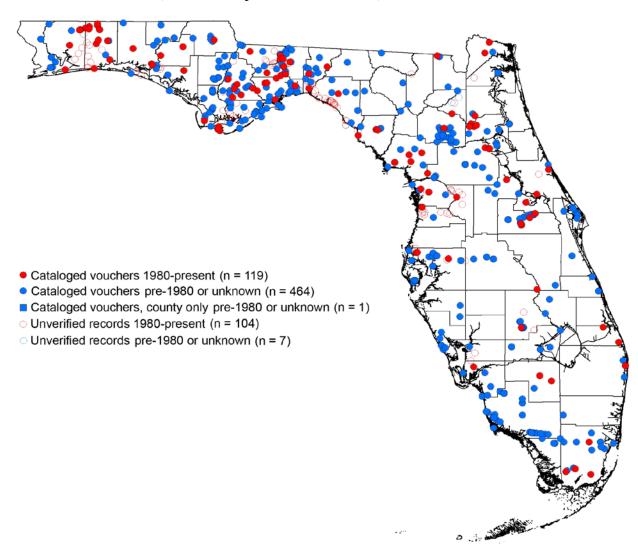
### Kinosternon subrubrum (Lacépède 1788)

#### **Eastern Mud Turtle**

**Geographic Distribution**: There are 584 vouchered records from 62 counties. This species likely occurs throughout the state, except the Keys, although no records exist from DeSoto, Flagler, Hardee, Pasco, and St. Lucie counties.

Earliest Recorded Voucher: 1869 (USNM 8966).

**Taxonomy:** There are 2 subspecies in Florida: Florida (*steindachneri* [Siebenrock 1906]) and eastern (*subrubrum* [Lacépède 1788]) mud turtles. A report (Seigel and Seigel 1980) of the Mississippi mud turtle (*Kinosternon s. hippocrepis*) from Wakulla County is based upon a misidentified *K. bauri* (P. E. Moler, personal observation).





Photographs by Pierson Hill (top) and Dirk J. Stevenson (bottom).

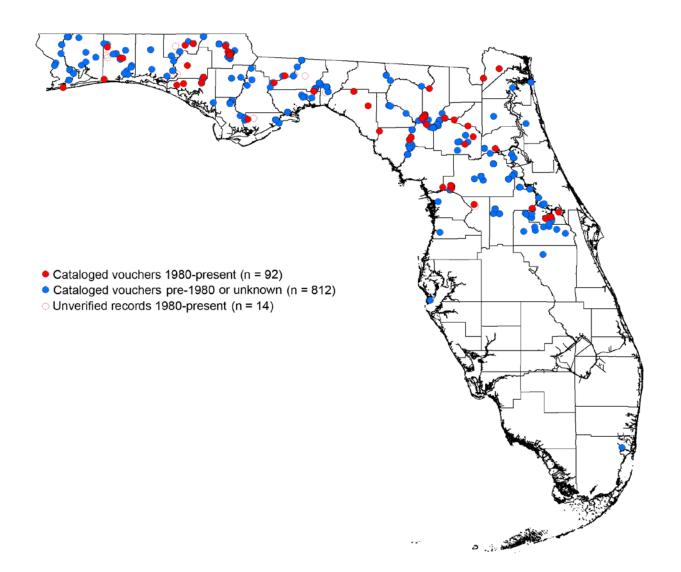
### Sternotherus minor (Agassiz 1857)

#### Loggerhead Musk Turtle

Geographic Distribution: There are 906 vouchered records from 43 counties. This species occurs throughout the panhandle and peninsula as far east as the St. Johns River system and south to near St. Cloud, Osceola County (UCF 2416). Within its apparent range, no records exist from Baker and Flagler counties. Along the Gulf Coast, this species occurs naturally as far south as Levy County in the Suwannee River drainage, but Meylan et al. (1992) suggested that it was introduced in the Withlacoochee River system in the late 1950s, which accounts for the records in southwestern Marion, Citrus, and Sumter counties. If this is the case, it was a successful introduction because the species is now common there, particularly in the Rainbow River (Enge and Foster 1986). The 1941 voucher (UCM 24623) from Weekiwachee Springs, Hernando County, might represent a released individual, and the 1946 (FMNH 168824) voucher from Tarpon Springs, Pinellas County, might have originated from the Tarpon Zoo, a commercial dealer. We did not map the 1990 voucher (ABS 1081) from Lake Huntley, Highlands County (Meshaka and Gallo 1990), because we could not locate it. If the Highlands County voucher is correctly identified, it represents an introduced animal, as does the 1946 voucher (USNM 124127) from Miami-Dade County.

**Earliest Recorded Voucher:** 1915 (AMNH 5935, UMMZ 51832, USNM 52484).

**Taxonomy:** There are 2 subspecies in Florida: loggerhead (*minor* [Agassiz 1857]) and stripeneck (*peltifer* Smith and Glass 1947) musk turtles. The 2 subspecies intergrade in the western panhandle (Iverson 1977). Crother (2008) used the common name stripe-necked musk turtle.





Photographs by Pierson Hill (top) and Todd W. Pierson (bottom).

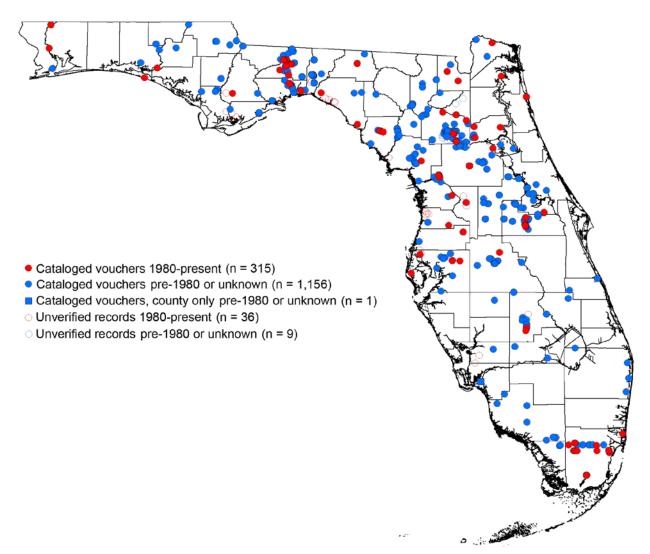
### Sternotherus odoratus (Latreille 1801)

# **Common Musk Turtle or Stinkpot**

**Geographic Distribution**: There are 1,469 vouchered records from 53 counties. This species likely occurs throughout Florida, except the Keys, although no records exist from Bay, Brevard, Broward, Clay, DeSoto, Flagler, Hamilton, Hendry, Lafayette, Manatee, Okaloosa, St. Lucie, Sarasota, and Suwannee counties.

Earliest Recorded Voucher: 1890 (AMNH 4512).

**Taxonomy:** Crother (2008) used the common name eastern musk turtle.





Photographs of hatchling by Pierson Hill (top) and adult by Kevin M. Enge (bottom).

#### FAMILY EMYDIDAE

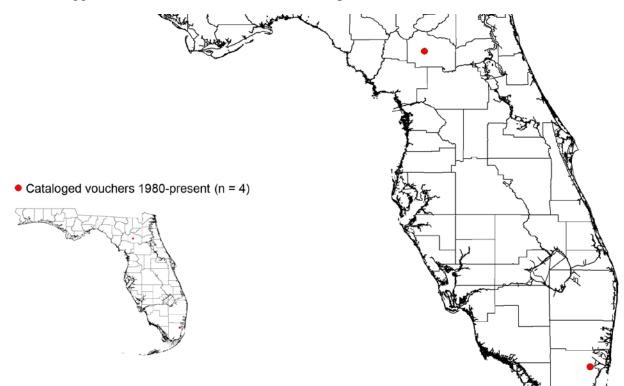
#### Chrysemys dorsalis Agassiz 1857

### **Southern Painted Turtle (Non-native)**

**Geographic Distribution**: There are 4 vouchered records of this non-native species from Alachua and Miami-Dade counties. An established population exists at the University Park campus of Florida International University, Miami (Krysko et al. 2011). Carr (1940) included *C. p. dorsalis* based upon a painted turtle collected from the Chipola River, Jackson County, but the subspecific identification was based "chiefly on geographic grounds." Bartlett and Bartlett (1999) reported anecdotal but unverified reports of this species from the western panhandle, which are not included herein. The native range of this species extends from southern Illinois to the Gulf of Mexico, and from western Alabama to extreme southeastern Oklahoma, with a disjunct population in central Texas.

Earliest Recorded Voucher: 2008 (UF 15397).

**Taxonomy:** Formerly a subspecies of *Chrysemys picta*, Starkey et al. (2003) used mitochondrial DNA to suggest that *C. dorsalis* be elevated to full species status.





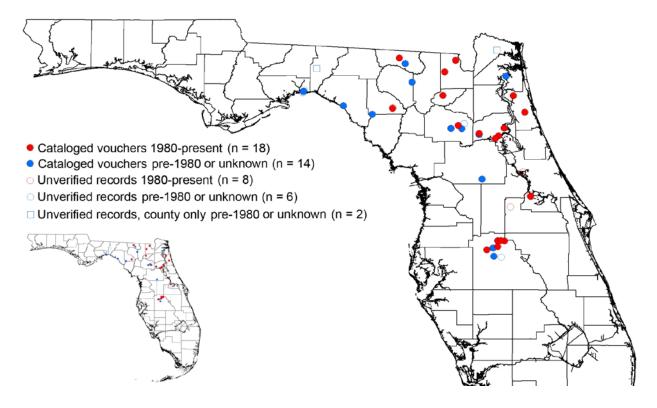
Photographs by Kenneth L. Krysko.

### Clemmys guttata (Schneider 1792)

### **Spotted Turtle**

Geographic Distribution: There are 32 vouchered records from 14 counties and unverified records from 4 additional counties. The unverified records are from unknown localities in Jefferson and Nassau counties (Meylan 2006b) and from Lake Apopka, Orange County, and Lake Woodruff, Volusia County (Barnwell et al. 1997). This species occurs from St. Marks National Wildlife Refuge, Wakulla County, eastward to Nassau, Duval, St. Johns, and Volusia counties. Scattered records exist in the peninsula as far south as the Green Swamp in northern Polk County. Most records in Florida come from the greater St. John's River basin and a major tributary, the Oklawaha River (Meylan 2006b). Within its apparent range, no records exist from Bradford, Clay, Columbia, Dixie, Flagler, Lake, and Madison counties.

Earliest Recorded Voucher: 1915 (USNM 52394).





Photographs by Kevin M. Enge (top) and Daniel Parker (bottom).

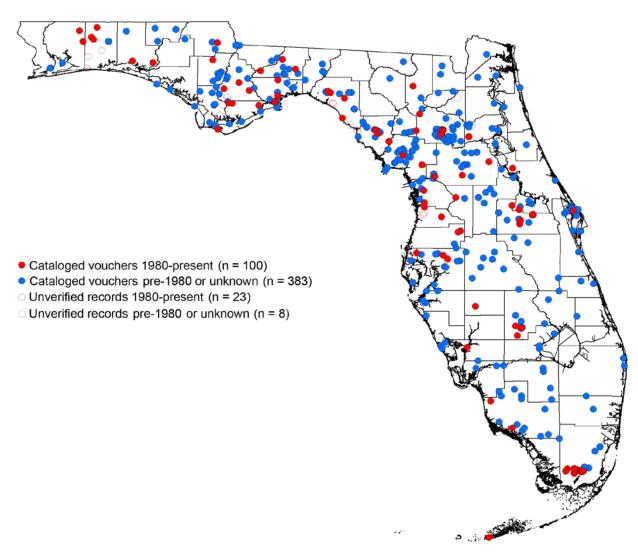
### Deirochelys reticularia (Latreille 1801)

#### **Chicken Turtle**

**Geographic Distribution**: There are 483 vouchered records from 64 counties. This species likely occurs throughout the state, although no records exist from DeSoto, Lafayette, and Martin counties. There is a 1993 voucher (AUM 33633) from Stock Island, Monroe County, but it was likely introduced in the Florida Keys (Butterfield et al. 1994a).

Earliest Recorded Voucher: 1891 (MPM 176).

**Taxonomy:** There are 2 subspecies in Florida: Florida (*chrysea* Schwartz 1956) and eastern (*reticularia* [Latreille 1801]) chicken turtles.





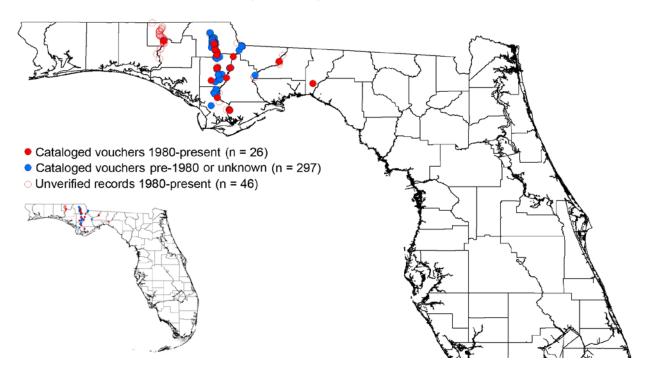
Photographs by John B. Jensen (top) and Pierson Hill (bottom).

### Graptemys barbouri Carr and Marchand 1942

### **Barbour's Map Turtle**

Geographic Distribution: There are 323 vouchered records from 10 counties and additional unverified records from Walton County (Enge and Wallace 2008). This species was once thought to be restricted to the Apalachicola and Chipola rivers but has since been found in the Choctawhatchee and Ochlockonee rivers (Enge and Wallace 2008). Within its apparent range, no record exists from Wakulla County. The voucher (UF 134682) from the Wacissa River, Jefferson County, was a nesting female that laid fertile eggs (Jackson 2003). It possibly represents a released individual, although fossil *G. barbouri* have been found in the Suwannee River drainage (Jackson 1975).

Earliest Recorded Voucher: 1937 (UF 65918).





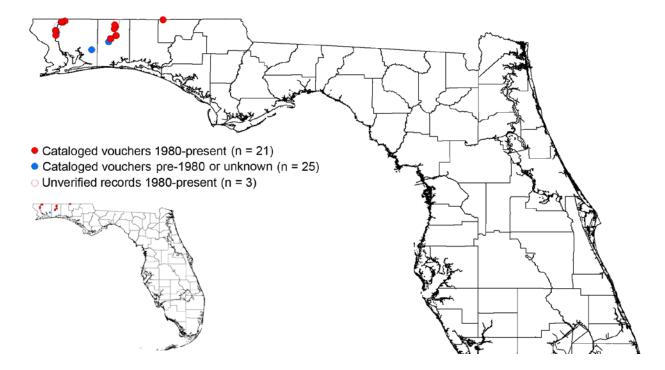
Photographs of juvenile by John B. Jensen (top) and adult female by Michael R. Rochford (bottom).

### Graptemys ernsti Lovich and McCoy 1992

# **Escambia Map Turtle**

Geographic Distribution: There are 46 vouchered records from Escambia, Holmes, Okaloosa, and Santa Rosa counties. This species was once thought to be restricted in Florida to the Escambia, Yellow, and Shoal rivers in Escambia, Santa Rosa, and Okaloosa counties (Lovich and McCoy 1994), but it has since been found in the Pea River, a tributary of the Choctawhatchee River that dips from Alabama into Holmes County (Lechowicz and Archer 2007). Within its apparent range, no record exists from Walton County.

**Earliest Recorded Voucher**: 1950 (TU 13446–13448).





Photographs of adult male (top) and adult female (bottom) by Pierson Hill.

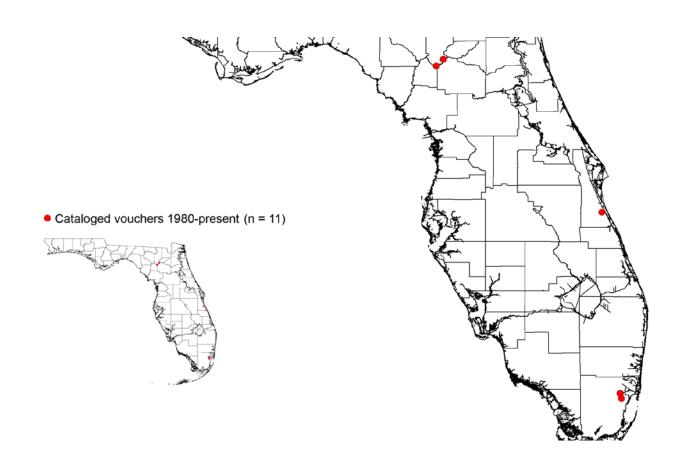
### Graptemys pseudogeographica (Gray 1831)

### **False Map Turtle (Non-native)**

Geographic Distribution: There are 11 vouchered records of this non-native species from Brevard, Columbia, Gilchrist, and Miami-Dade counties. Three vouchers are from the Santa Fe River; it is unknown whether these represent a reproducing population. The voucher from Brevard County is from Turkey Creek Sanctuary in Palm Bay. One of the Miami-Dade County vouchers is from Snapper Creek in Miami, and the remaining vouchers are from a reproducing population at University Park campus, Florida International University, Miami (Krysko et al. 2011). This species is native to the Missouri River system and upper Mississippi River drainages as far north as Minnesota and North Dakota and as far northeast as Indiana.

Earliest Recorded Voucher: 2000 (UF 121459).

**Taxonomy**: There are 2 subspecies in Florida: false (*pseudogeographica* [Gray 1831]) and Mississippi (*kohnii* [Baur 1890]) map turtles. The only *kohnii* record came from the Santa Fe River, Gilchrist County (Kail et al. 2011a).





Photographs of adult male by Kenneth L. Krysko (top) and adult female by Christopher R. Gillette (bottom).

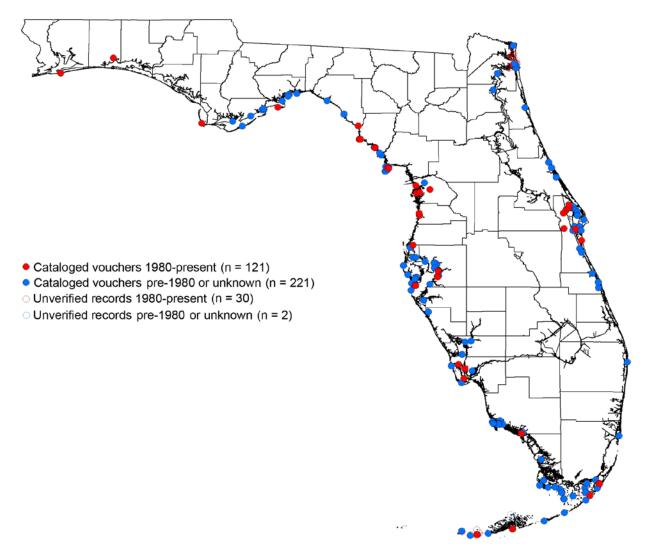
### Malaclemys terrapin (Schoepff 1793)

# **Diamondback Terrapin**

**Geographic Distribution**: There are 342 vouchered records from 27 counties. This species likely occurs statewide in coastal areas but is less common in areas lacking salt marshes or mangrove swamps. No records exist from the following coastal counties: Bay, Broward, Flagler, Martin, St. Lucie, Santa Rosa, and Walton.

Earliest Recorded Voucher: 1901 (ANSP 18386).

**Taxonomy:** There are 5 subspecies in Florida: Carolina (*centrata* [Latreille 1801]), ornate (*macrospilota* [Hay 1904]), Mississippi (*pileata* [Wied-Neuwied 1865]), mangrove (*rhizophorarum* Fowler 1906), and Florida East Coast (*tequesta* Schwartz 1955) diamondback terrapins. Crother (2008) used the common name diamond-backed terrapin.





Photographs of *pileata* by Pierson Hill (top left), *centrata* by Dirk J. Stevenson (top right), *macrospilota* by Kenneth L. Krysko (center left) and Kevin M. Enge (bottom left), *tequesta* by Joseph P. Burgess (center right), and *rhizophorarum* by Michael R. Rochford (bottom right).

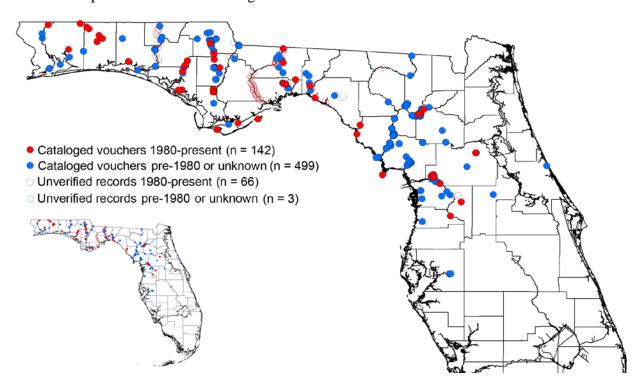
#### Pseudemys concinna (LeConte 1830)

#### **River Cooter**

Geographic Distribution: There are 641 vouchered records from 31 counties and an additional unverified FNAI record from Hamilton County. This species occurs throughout the panhandle and in the peninsula as far east as the Suwannee River system drainage and south to the Alafia River in Hillsborough County. The Suwannee subspecies, *Pseudemys concinna suwanniensis*, occurs as far west as the Ochlockonee River, and the eastern subspecies *P. c. concinna* occurs from the Apalachicola River westward (Jackson 2006a). Within its apparent range, no records exist from Bradford, Lafayette, Madison, Pasco, and Union counties. A population in the Oklawaha River, Marion County, may have originated from escapees from Ross Allen's Reptile Institute at Silver Springs. The voucher (USNM 66858) from Daytona Beach, Volusia County, is a juvenile that was probably released.

### Earliest Recorded Voucher: 1878 (USNM 9561).

**Taxonomy:** There is disagreement regarding its taxonomy. Crother (2008) followed Seidel (1994), who suggested recognition of the Suwannee cooter (*Pseudemys suwanniensis* Carr 1937) as a full species and recognition of 2 subspecies within the river cooter in Florida: eastern river cooter (*concinna* [LeConte 1830]) and Coastal Plain cooter (*floridana* [LeConte 1830]). However, Jackson (1995) objected to this classification and suggested retaining *P. floridana* as a separate species and recognizing *P. concinna* with 2 subspecies in Florida: eastern river cooter (*concinna*) and Suwannee cooter (*suwanniensis*). Meylan (2006a) and our study follow Jackson (1995). Confusion regarding this taxonomy complicates assigning some museum vouchers to the correct species without examining them.





Photographs of hatchling by Pierson Hill (top) and adult by John B. Jensen (bottom).

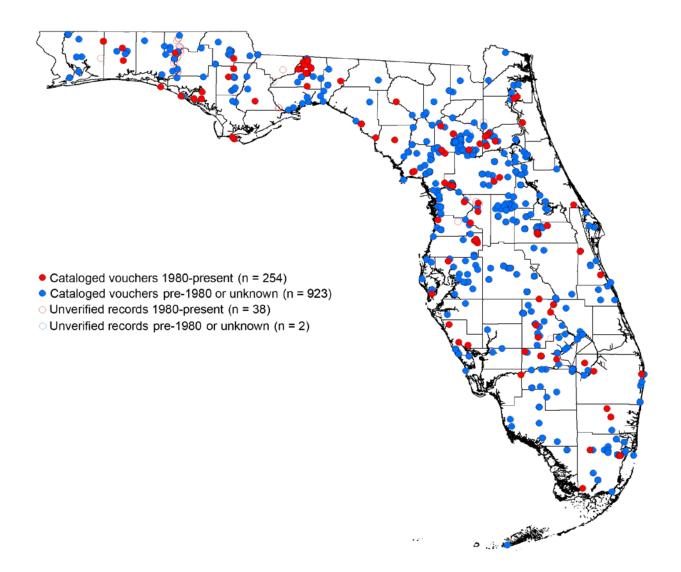
### Pseudemys floridana (LeConte 1830)

#### Florida Cooter

**Geographic Distribution**: There are 1,177 vouchered records from 61 counties. This species likely occurs throughout the state, including the Keys, although no records exist from Flagler, Hamilton, Hardee, Martin, St. Lucie, and Union counties.

Earliest Recorded Voucher: 1891 (MPM 162).

**Taxonomy:** There is disagreement regarding its taxonomy. Crother (2008) followed Seidel (1994), who suggested recognition of the peninsula cooter (*Pseudemys peninsularis* Carr 1938) as a full species and assigned the former Florida cooter subspecies (*P. floridana floridana*) to a different species, *P. concinna floridana*. However, Thomas and Jackson (2006) objected to this classification and suggested recognition of 2 subspecies of Florida cooter in Florida: Florida (*floridana* [LeConte 1830]) and peninsula (*peninsularis* Carr 1938) cooters. Meylan (2006a) and our study follow Thomas and Jackson (2006). Confusion regarding this taxonomy complicates assigning some museum vouchers to the correct species without examining them.





Photographs by Kenneth L. Krysko (top) and Pierson Hill (bottom).

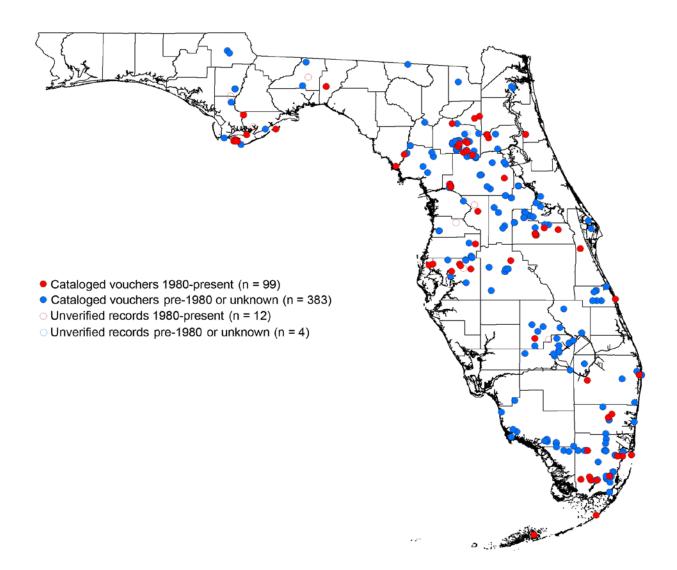
#### Pseudemys nelsoni Carr 1938

#### Florida Redbelly Turtle

Geographic Distribution: There are 482 vouchered records from 41 counties. This species likely occurs throughout the peninsula as far west as the Suwannee River. According to Jackson (2006b), limited evidence supports the possible existence of isolated populations farther west in the Apalachicola River drainage, including St. Vincent Island. We believe that populations are present in the panhandle based upon the number of vouchers: Calhoun (5), Franklin (10), Gulf (2), and Jackson (2). Regarding the Jackson County vouchers, we could not locate UF 559, and AMNH 69913 consists only of a skull and limb bones (D. R. Frost, personal communication). There are also vouchers from Big Pine Key (UF 120108) and Windley Key (UF 52686), but these likely represent released individuals or waifs. Records from the panhandle east of the Apalachicola River drainage are problematic and may not represent established populations: Leon County in 1935 (USNM 95765), 1937 (UF 1196), and 2011 (FNAI) and the Wacissa River, Jefferson County (UF 144233). Within the peninsular range of the species, no records exist from Charlotte, Columbia, DeSoto, Flagler, Hardee, Lafayette, Lee, Manatee, Martin, Nassau, Osceola, St. Lucie, Sarasota, Suwannee, Taylor, and Union counties.

Earliest Recorded Voucher: 1918 (UF 53717).

**Taxonomy:** Crother (2008) used the common name Florida red-bellied cooter.





Photographs by Catherine A. Smith (top) and Kenneth L. Krysko (bottom).

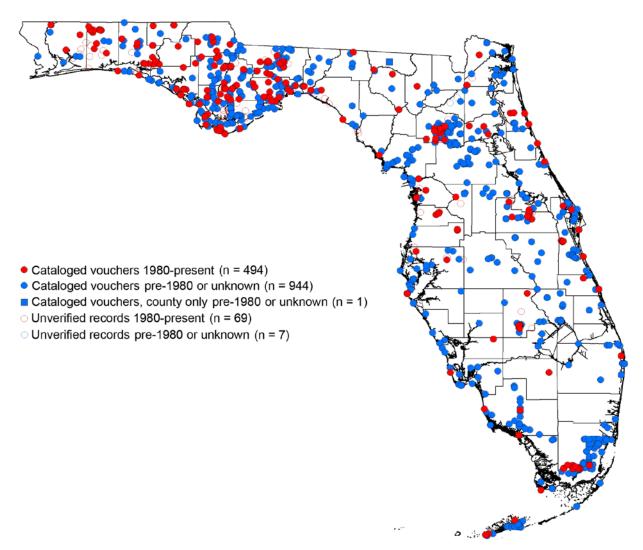
#### Terrapene carolina (Linnaeus 1758)

#### **Eastern Box Turtle**

**Geographic Distribution**: There are 1,439 vouchered records from all counties except Hardee and Union. This species likely occurs throughout the state, including the Keys.

Earliest Recorded Voucher: 1862 (ANSP 21524).

**Taxonomy:** There are possibly 4 subspecies in Florida: Florida (*bauri* Taylor 1894), eastern (*carolina* [Linnaeus 1758]), Gulf Coast (*major* [Agassiz 1857]), and three-toed (*triunguis* [Agassiz 1857]) box turtles. It is unlikely that any pure populations of *Terrapene carolina* or *T. c. triunguis* occur within Florida (Farrell et al. 2006), and the distinctness of *T. c. major* has been questioned based upon morphological and molecular data (Butler et al. 2011). Butler et al. (2011) suggested that individuals traditionally assigned to *T. c. major* based on phenotype are the result of introgression between eastern extant turtles (predominantly *T. c. carolina*) and an extinct subspecies, *T. c. putnami*.





Photographs of hatchling *major* by Aubrey M. Heupel (top left), adult *major* by Kenneth L. Krysko (top right) and Aubrey M. Heupel (center left), *carolina* by Pierson Hill (center right), and *bauri* by Kevin M. Enge (bottom left) and Kenneth L. Krysko (bottom right).

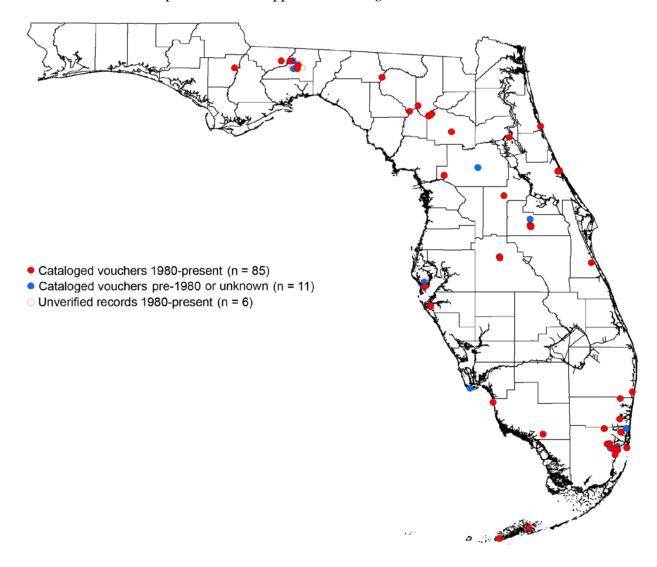
### Trachemys scripta elegans (Wied-Neuwied 1838)

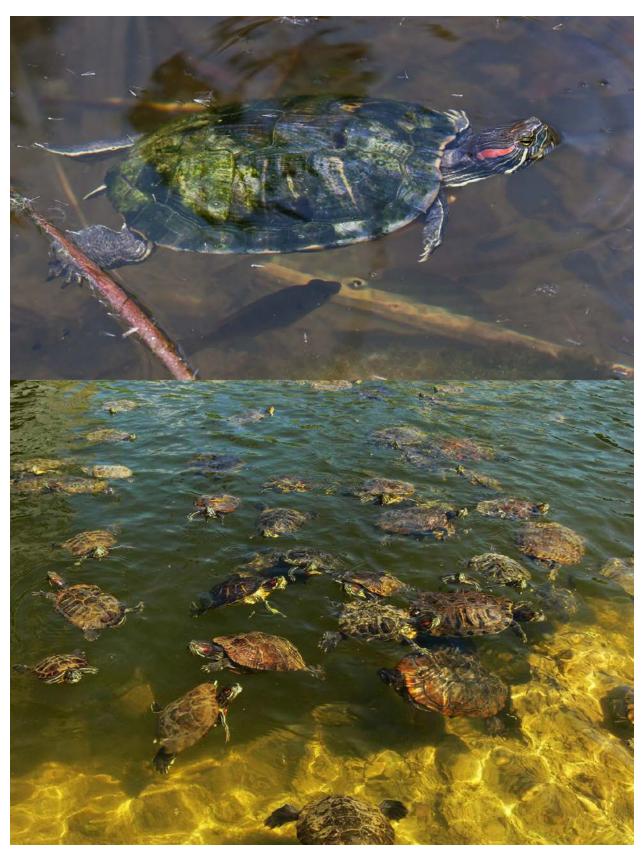
#### **Red-eared Slider (Non-native)**

Geographic Distribution: There are 96 vouchered records from 22 counties. Until a 2007 FWC regulation made the red-eared slider a conditional species, this subspecies was an inexpensive, popular turtle in the pet trade in Florida. Released pets have been introduced in many parts of Florida and around the world (Lever 2003). This subspecies is native to the Mississippi River drainages, and it ranges from Michigan south to the Gulf Coast and from Mississippi west to New Mexico.

Earliest Recorded Voucher: 1937 (FMNH 27345).

**Taxonomy:** This non-native subspecies intergrades with the native subspecies *Trachemys scripta scripta* in Florida, producing intermediate specimens with a combination of characteristics. Such specimens are mapped as *T. s. elegans*.





Photographs by Kenneth L. Krysko (top) and Christopher R. Gillette (bottom).

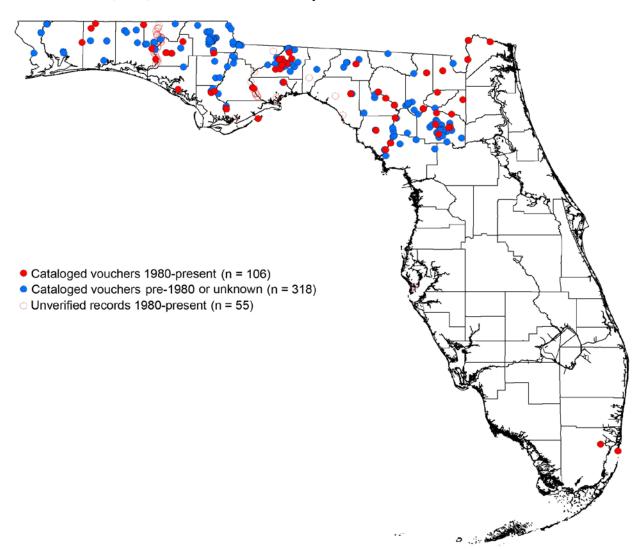
### Trachemys scripta scripta (Schoepff 1792)

# Yellowbelly Slider

**Geographic Distribution**: There are 424 vouchered records from 31 counties. The native subspecies *Trachemys scripta scripta* occurs throughout the panhandle east to the St. Marys River, Nassau County, and south to Alachua and Levy counties. Within its apparent range, no records exist from Citrus, Clay, Duval, Marion, and Putnam counties. Specimens from Miami-Dade County were introduced.

Earliest Recorded Voucher: 1915 (UF 65884).

**Taxonomy:** Intergrades with the non-native subspecies *Trachemys scripta elegans* in some areas. Crother (2008) used the common name yellow-bellied slider.





Photographs of hatchling by Pierson Hill (top) and adult by Georgia Shemitz (bottom).

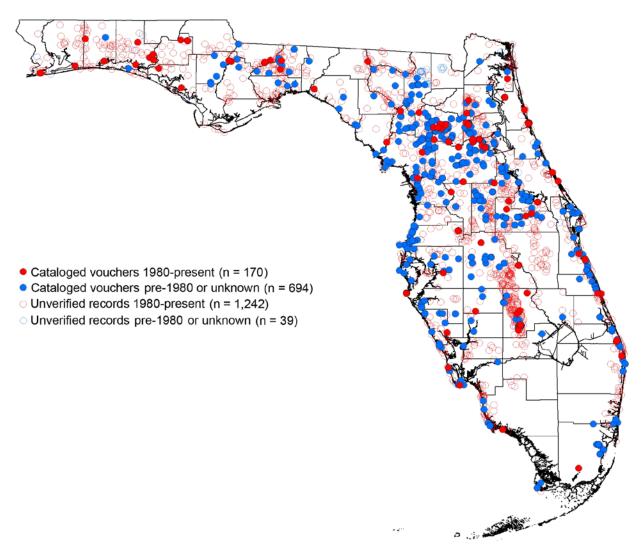
# FAMILY TESTUDINIDAE

# Gopherus polyphemus (Daudin 1802)

# **Gopher Tortoise**

**Geographic Distribution**: There are 864 vouchered records from 60 counties and unverified FNAI records from Baker, Bay, Franklin, Hendry, Jackson, Osceola, and Union counties. This species occurs in all 67 counties, but most of the area south of Lake Okeechobee provides no suitable habitat.

Earliest Recorded Voucher: 1879 (USNM 10057, 10070).





Photographs of hatchling by Kevin M. Enge (top) and adult by Kenneth L. Krysko (bottom).

#### FAMILY TRIONYCHIDAE

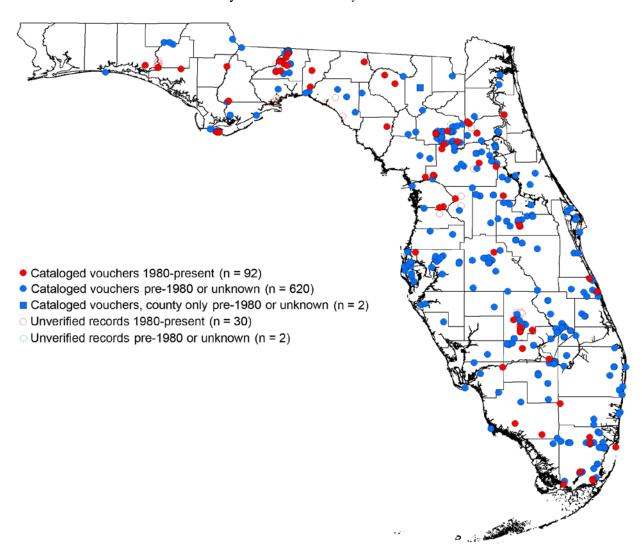
# Apalone ferox (Schneider 1783)

#### Florida Softshell

**Geographic Distribution**: There are 714 vouchered records from 58 counties. This species likely occurs throughout Florida except the Florida Keys, although no records exist from Bradford, DeSoto, Escambia, Flagler, Gulf, Hamilton, Nassau, Santa Rosa, and Union counties.

Earliest Recorded Voucher: 1881 (USNM 10545).

**Taxonomy:** Meylan (1987) resurrected the genus *Apalone* for the monophyletic group of North American softshell turtles formerly included in *Trionyx*.





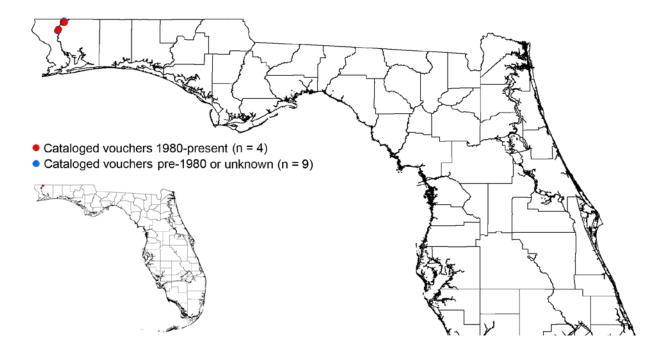
Photographs of hatchling by Daniel Parker (top) and adult by Pierson Hill (bottom).

# Apalone mutica calvata (Webb 1959)

# **Gulf Coast Smooth Softshell**

**Geographic Distribution**: There are 13 vouchered records from Escambia and Santa Rosa counties. It occurs only in the upper reaches of the Escambia River (Moler 2006a).

Earliest Recorded Voucher: 1880 (USNM 11630).





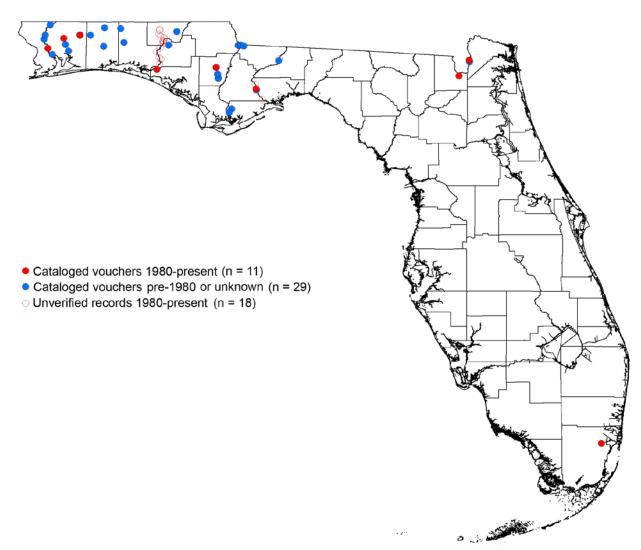
Photographs of adults by Pierson Hill (top) and Barry Mansell (bottom).

## Apalone spinifera aspera (Agassiz 1857)

## **Gulf Coast Spiny Softshell**

Geographic Distribution: There are 40 vouchered records from 17 counties. This species occurs in the panhandle as far east as the Ochlockonee River and in the St. Marys River, Baker and Nassau counties (Moler 2006b). The species is known to occur in Georgia in 2 tributaries (Alapaha and Withlacoochee) of the Suwannee River, but it has not been recorded from the Suwannee River drainage in Florida. Within its apparent range, no record exists from Gulf County. The record from Miami-Dade County represents a released specimen (Krysko et al. 2011).

Earliest Recorded Voucher: 1891 (USNM 56807).





Photographs of adult male by Michael R. Rochford (top) and female by Kevin M. Enge (bottom).

## ORDER CROCODYLIA

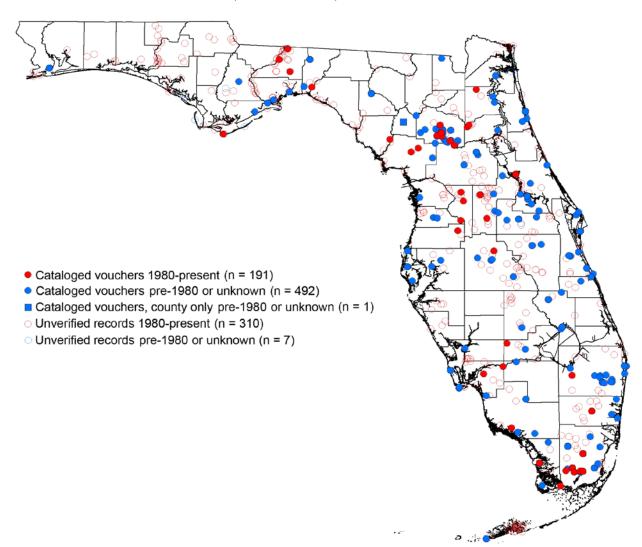
#### **FAMILY ALLIGATORIDAE**

## Alligator mississippiensis (Daudin 1801)

## **American Alligator**

**Geographic Distribution**: There are 684 vouchered records from 43 counties and unverified records from an additional 23 counties. The paucity of vouchers for this common species is due to its large size and protected status. Most of the unverified records are from FNAI or FWC's Alligator Survey Database. The species occurs throughout the state, but no record exists from Madison County.

Earliest Known Voucher: 1871 (USNM 131847).





Photographs by Kenneth L. Krysko.

## Caiman crocodilus (Linnaeus 1758)

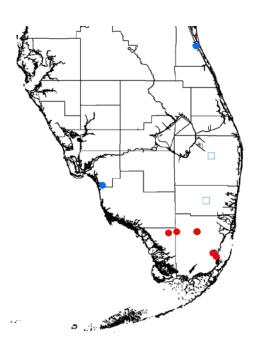
#### **Spectacled Caiman (Non-native)**

Geographic Distribution: There are 20 vouchered records of this non-native species from Brevard, Lee, Miami-Dade, and Monroe counties and additional unverified records from Broward (FWC's Exotic Species Database), Palm Beach (King and Krakauer 1966), and Seminole (Ellis 1980) counties. King and Krakauer (1966) reported *C. crocodilus* in various canal systems in South Florida but no evidence of reproduction. In 1974, an apparently reproducing population was discovered at Homestead Air Force Base, Miami-Dade County (Ellis 1980). This species is native to southeastern Chiapas, Mexico, south to the coastal plain of Ecuador on the Pacific versant, and from northeastern Honduras to the southern edge of the Amazon Basin on the Atlantic versant.

Earliest Known Voucher: 1966 (UF 115688).

- Cataloged vouchers 1980-present (n = 11)
- Cataloged vouchers pre-1980 or unknown (n = 9)
- Unverified records pre-1980 or unknown (n = 2)
- □ Unverified records, county only pre-1980 or unknown (n = 2)







Photographs of juvenile by Michael R. Rochford (top) and adult by Catherine A. Smith (bottom).

#### FAMILY CROCODYLIDAE

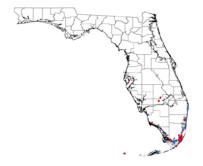
#### Crocodylus acutus (Cuvier 1807)

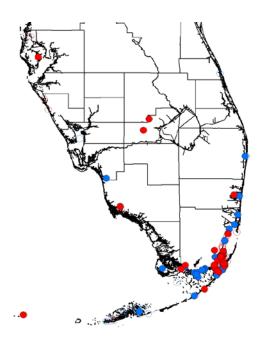
#### **American Crocodile**

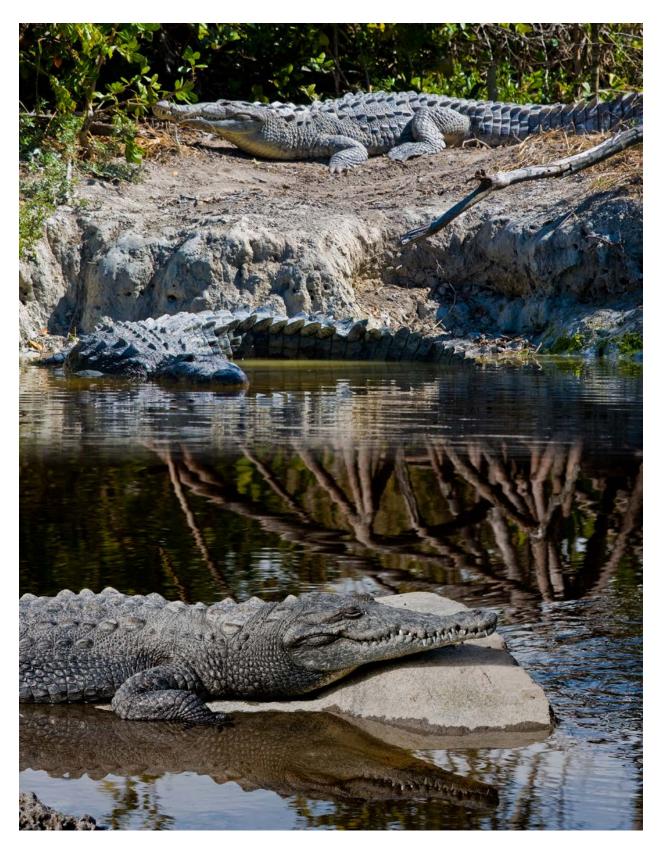
Geographic Distribution: There are 124 vouchered records from 8 counties and additional unverified records from Sarasota (Osprey and Sarasota), and Charlotte (Charlotte Harbor) counties along the Gulf Coast (Behler 1978, Kushlan and Mazzotti 1989) and from Vero Beach, Indian River County, along the Atlantic Coast (Kushlan and Mazzotti 1989). Records from Fisheating Creek, Glades County, may represent escapees from the roadside attraction Gatorama (Enge 2003). Most of the recent unverified records are nest locations from the FNAI database or results of a survey of Biscayne Bay (Cherkiss et al. 2011). Crocodiles have nested in Miami-Dade, Monroe, Collier, and Lee counties, but most nesting occurs from Biscayne Bay, Miami-Dade County, to Cape Sable, Monroe County.

Earliest Known Voucher: 1869 (MCZ 29727).

- Cataloged vouchers 1980-present (n = 67)
- Cataloged vouchers pre-1980 or unknown (n = 57)
- Unverified records 1980-present (n = 35)
- Ounverified records pre-1980 or unknown (n = 24)







Photographs by Kenneth L. Krysko.

# ORDER SQUAMATA SUBORDER AMPHISBAENIA

#### **FAMILY RHINEURIDAE**

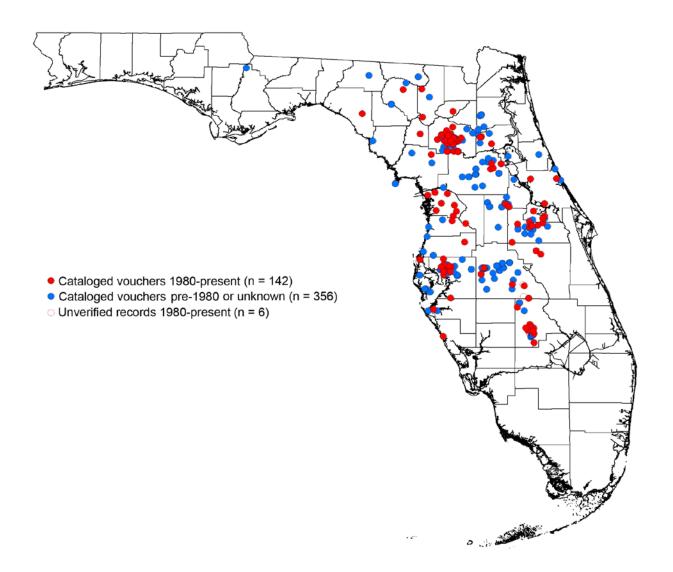
Rhineura floridana (Baird 1859)

#### Florida Worm Lizard

Geographic Distribution: There are 498 vouchered records from 31 counties. In the interior of the peninsula, this species occurs from Madison and Hamilton counties south to Highlands County. On the Gulf Coast, it occurs from Taylor to Sarasota counties, but on the Atlantic Coast, the only records are from St. Johns and Volusia counties. The only voucher from the Panhandle (Torreya State Park, Liberty County) has been verified, but the validity of the record has been questioned. Within its apparent range, no records exist from Bradford and St. Johns counties.

Earliest Known Voucher: 1884 (USNM 13964)

**Taxonomy:** Substantial genetic divergence between northern and southern populations suggests that they might be candidates for recognition as separate species (Mulvaney et al. 2005). Crother (2008) used the common name Florida wormlizard.





Photographs by Kevin M. Enge.

#### **SUBORDER SAURIA**

#### FAMILY CORYTOPHANIDAE

## Basiliscus vittatus Laurenti 1768

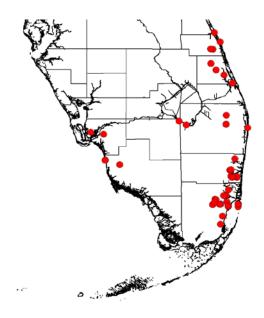
## **Brown Basilisk (Non-native)**

**Geographic Distribution**: There are 104 vouchered records of this non-native species from 9 counties. It was first observed in Miami, Miami-Dade County, in 1976 (Wilson and Porras 1983). Populations are also found in Broward, Collier, Palm Beach, St. Lucie (Krysko et al. 2006), Glades (Crutchfield and Enge 2008), and Indian River (Rand et al. 2008) counties. This species is native to central Mexico south through Central America to northeastern Colombia.

Earliest Known Voucher: 1979 (UF 124584).

- Cataloged vouchers 1980-present (n = 102)
- Cataloged vouchers pre-1980 or unknown (n = 2)







Photographs of juvenile (top) and adult male (bottom) by Kenneth L. Krysko.

#### **FAMILY IGUANIDAE**

#### Ctenosaura pectinata (Wiegmann 1834)

## **Mexican Spinytail Iguana (Non-native)**

Geographic Distribution: There are 10 vouchered records of this non-native species from Broward and Miami-Dade counties. A population has existed along Old Cutler Road near Perrine, Miami-Dade County, since at least 1972 (Wilson and Porras 1983). Reports of this species from other localities (e.g., Butterfield et al. 1997, Bartlett and Bartlett 1999, McKercher 2001, McCoid 2002a) were cases of misidentified *Ctenosaura similis* (Krysko et al. 2003, Townsend et al. 2003). There is a 2008 voucher from Hollywood, Broward County (Krysko 2009), but it may not represent an established population. This species is native to the Pacific lowlands of Mexico from southern Sinaloa to the Isthmus de Tehuantepec.

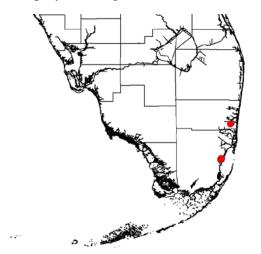
Earliest Known Voucher: 1987 (KU 206675).

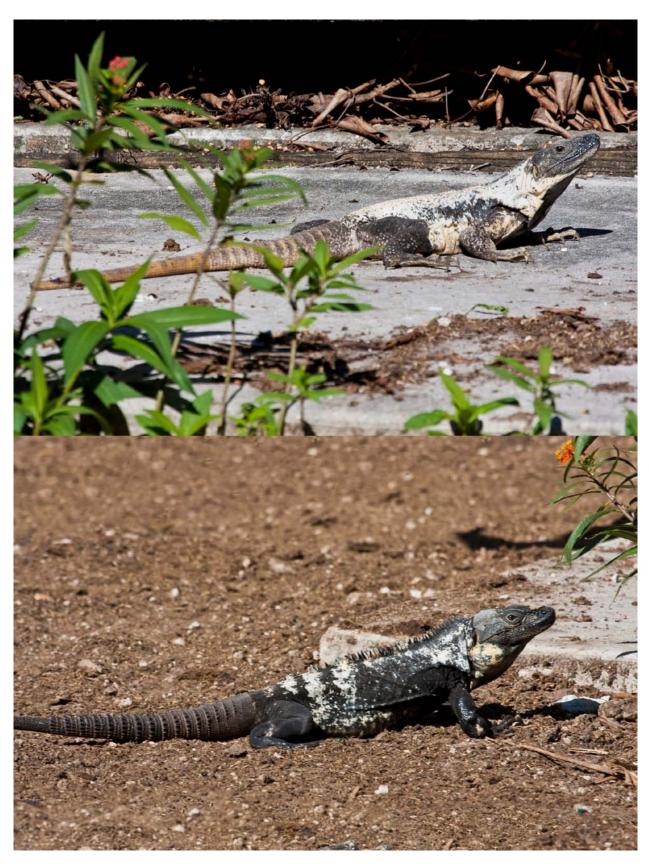
**Taxonomy:** Crother (2008) used the common name Mexican spiny-tailed iguana.

Cataloged vouchers 1980-present (n = 6)

Cataloged vouchers pre-1980 or unknown (n = 4)







Photographs by Kenneth L. Krysko.

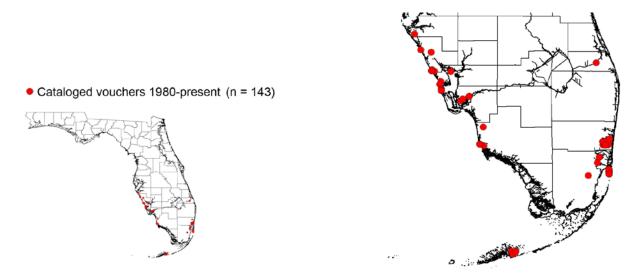
## Ctenosaura similis (Gray 1831)

## **Black Spinytail Iguana (Non-native)**

**Geographic Distribution:** There are 143 vouchered records of this non-native species from 9 counties. This species is native to the Atlantic versant of Middle America from the Isthmus of Tehuantepec to northeastern Nicaragua, and on the Pacific versant from the Isthmus of Tehuantepec to Panama.

Earliest Known Voucher: 1994 (UF 91662).

**Taxonomy:** Crother (2008) used the common name Gray's spiny-tailed iguana.





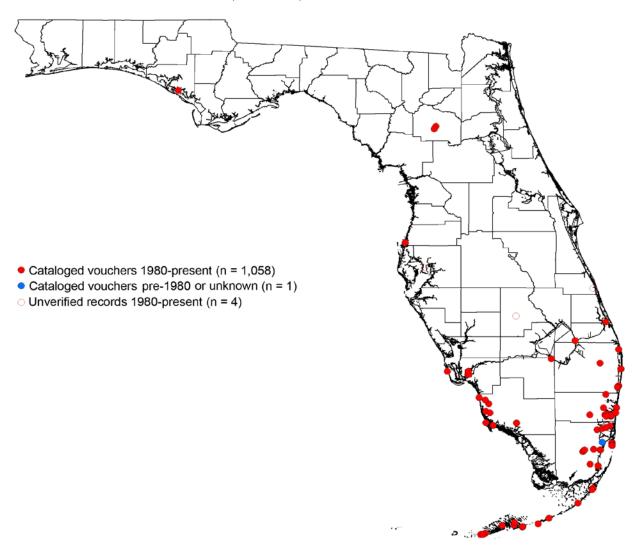
Photographs of juvenile (top) and adult (bottom) by Kevin M. Enge.

## Iguana iguana Laurenti 1768

## **Green Iguana (Non-native)**

Geographic Distribution: There are 1,059 vouchered records of this non-native species from 10 counties and additional unverified records from Indian River, Hillsborough (Meshaka et al. 2004a), and Highlands (Meshaka et al. 2004b) counties. This species is native to low-elevation localities in Sinaloa and Veracruz, Mexico, south to Ecuador on the Pacific versant and Paraguay and south-central Brazil on the Atlantic versant, as well as the Islas de Maiz in Nicaragua, Islas San Andrés and Providencia in Colombia, and some Lesser Antillean islands.

## Earliest Known Voucher: 1965 (UF 22910).





Photographs of juvenile (top) and adult male (bottom) by Kevin M. Enge.

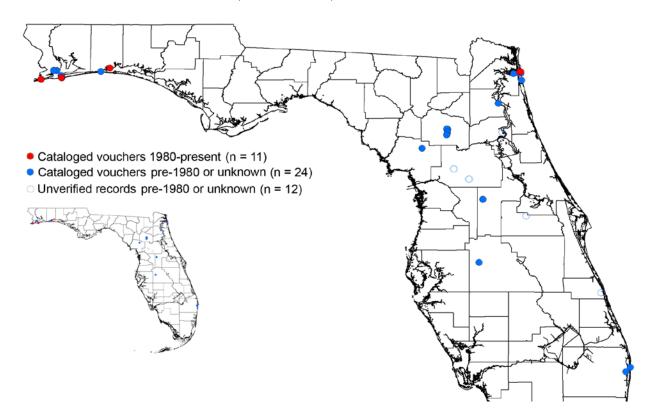
#### FAMILY PHRYNOSOMATIDAE

#### Phrynosoma cornutum (Harlan 1825)

## **Texas Horned Lizard (Non-native)**

Geographic Distribution: There are 35 vouchered records of this non-native species from 9 counties and additional unverified records from Miami-Dade (De Sola 1934), Indian River, Marion (Allen and Neill 1955), Orange, and Putnam (Carr 1940) counties. Apparently, the only extant populations occur in coastal areas of Duval County and the western panhandle, where they have existed since the 1930s or 1940s (Owens and Krysko 2007). This species is native to northwestern Louisiana, Kansas, Oklahoma, Texas, New Mexico, and southeastern Arizona south through Mexico to eastern Durango on the Pacific versant and to San Luis Potosi and southern Tamaulipas on the Atlantic versant.

Earliest Known Voucher: 1928 (FMNH 11037).





Photographs by Kenneth L. Krysko (top) and Kevin M. Enge (bottom).

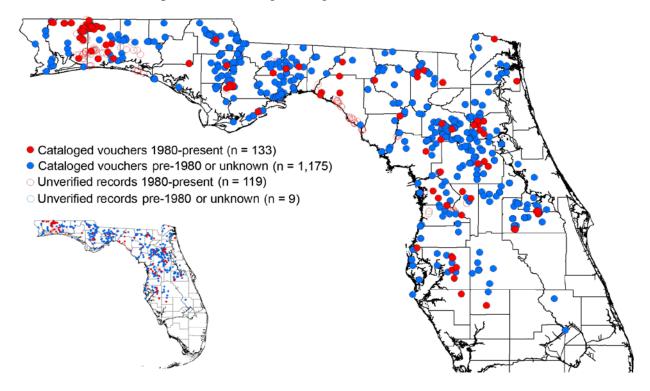
## Sceloporus undulatus (Bosc and Daudin in Sonnini and Latreille 1801)

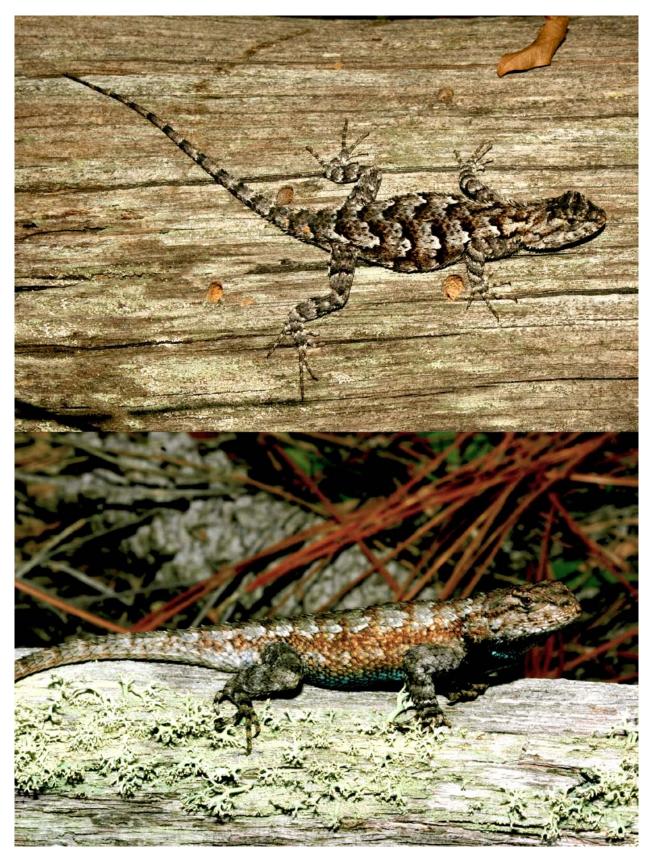
#### **Eastern Fence Lizard**

**Geographic Distribution:** There are 1,308 vouchered records from 46 counties. This species occurs throughout the panhandle and as far south as Manatee, Hardee, and Okeechobee counties in the peninsula. Within its apparent range, no records exist from Flagler, Osceola, St. Johns, and Union counties.

**Earliest Known Voucher**: 1879 (USNM 10593, 11873).

**Taxonomy:** Florida specimens were previously referred to the southern fence lizard (*Sceloporus u. undulatus*), but subspecies are no longer recognized (Leaché and Reeder 2002).





Photographs by Kenneth L. Krysko (top) and Kevin M. Enge (bottom).

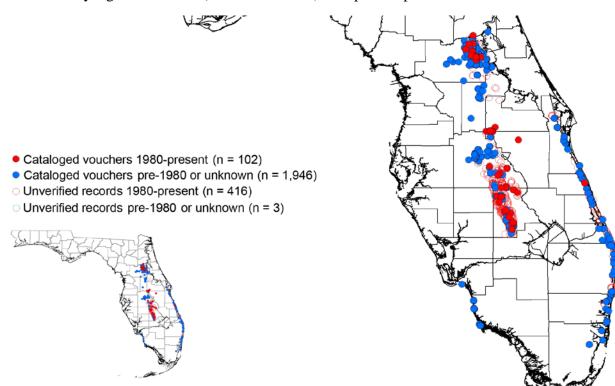
## Sceloporus woodi complex Stejneger 1918

#### Florida Scrub Lizard

**Geographic Distribution:** There are 2,048 vouchered records from 16 counties. Populations apparently no longer occur in Miami-Dade County (Enge et al. 1986), and populations along the Gulf Coast in Lee and Collier counties have apparently been extirpated by habitat development (Clark et al. 1999, Branch and Hokit 2000).

Earliest Known Voucher: 1889 (USNM 44828).

**Taxonomy:** Analysis of mitochondrial DNA indicates that 3 distinct lineages exist from the northern central ridge (Mt. Dora), the Atlantic Coastal Ridge, and the southern central ridges (Lakes Wales and Bombing Range, plus Gulf Coast Ridge) (Clark et al. 1999). Deep genetic subdivisions of 3–10% sequence divergence among lineages qualify them as either evolutionarily significant units (Clark et al. 1999) or separate species.





Photographs by Steve A. Johnson (top) and Todd W. Pierson (bottom).

#### **FAMILY POLYCHROTIDAE**

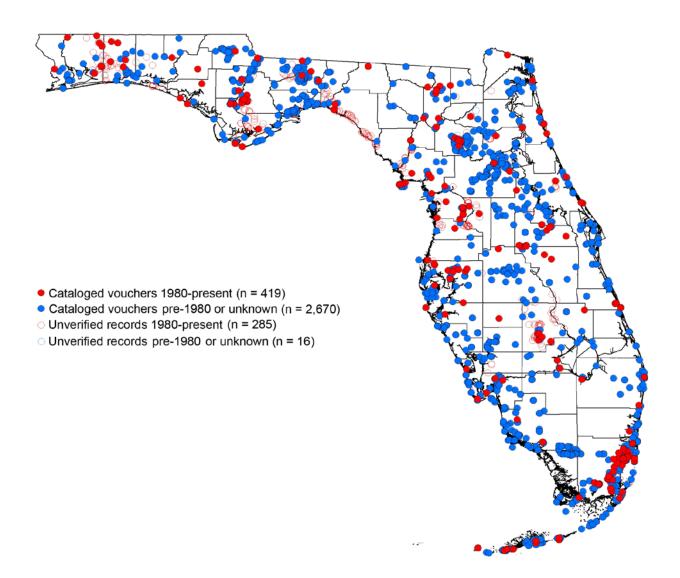
#### Anolis carolinensis (Voigt 1832) and A. porcatus Gray 1840

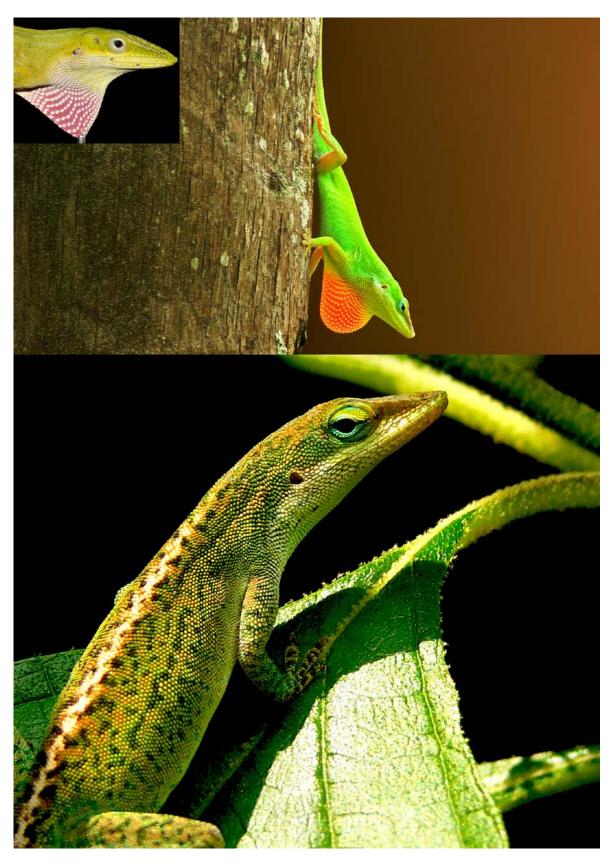
#### **Green Anole (Native) and Cuban Green Anole (Non-native)**

Geographic Distribution: There are 3,089 vouchered records from all counties except Union County. The native *Anolis carolinensis* and non-native *A. porcatus* have been combined because they cannot be distinguished morphologically (Chun 2001, Camposano 2011). Barbour (1904) first reported *A. porcatus* from the Florida Keys. Allen and Slatten (1945) reported *A. porcatus* from Key West, Monroe County, in 1937, but no vouchers are known despite their assertion that the specimens were identified by Karl P. Schmidt. Vance (1987) suggested *A. porcatus* from Key West was probably erroneous. Meshaka et al. (1997) reported *A. porcatus* in northern Miami ca. 1991 and southern Miami ca. 1995. Of 14 purported Florida *A. porcatus* from Miami sampled for mitochondrial DNA, 12 had native *A. carolinensis* haplotypes, suggesting misidentification as *A. porcatus* or possible hybridization between these 2 species (Kolbe et al 2007; J. J. Kolbe, Washington University in St. Louis, personal communication). The presence of *A. porcatus* genetic material is confirmed, but its genome in Florida is likely at very low abundance. The native range of *Anolis porcatus* is Cuba and surrounding islands.

**Earliest Known Voucher**: The first known voucher of *Anolis carolinensis* came from 1868 (YPM 1309, 1844–1846), and the first purported voucher of *A. porcatus* came from 1975 (UF 91293).

**Taxonomy:** There are 2 subspecies of the native green anole: northern (*carolinensis* [Voigt 1832]) and southern (*seminolus* Vance 1991) anoles.





Photographs by Brian J. Camposano (top left) and Christopher R. Gillette (top right, bottom).

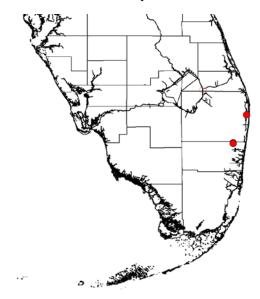
## Anolis chlorocyanus Duméril and Bibron 1837

## **Hispaniolan Green Anole (Non-native)**

**Geographic Distribution**: There are 88 vouchered records of this non-native species from Broward and Palm Beach counties. A colony has been established since 1984 in Parkland, Broward County (Butterfield et al. 1994b), and a colony was reported from West Palm Beach, Palm Beach County, in 2009 (Camposano et al. 2009). This species is native to Hispaniola and surrounding islands.

Earliest Known Voucher: 1988 (KU 210033) from Parkland, Broward County.

- Cataloged vouchers 1980-present (n = 88)
   Unverified records 1980-present (n = 1)





Photographs by Kenneth L. Krysko (top) and Brian J. Camposano (bottom left).

#### Anolis cristatellus Duméril and Bibron 1837

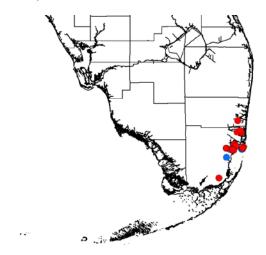
## **Puerto Rican Crested Anole (Non-native)**

Geographic Distribution: There are 258 vouchered records of this non-native species from Broward and Miami-Dade counties. Schwartz and Thomas (1975) reported several populations in the Miami area and on Key Biscayne, Miami-Dade County, and numerous populations still occur in Miami-Dade County. The only voucher (UF 157199) from Broward County likely came from a reptile dealer's facility in Hollywood in 2009. A specimen (LSUMZ 80413) reported from Brevard County (Seigel et al. 1999) is actually a misidentified *Anolis sagrei*. This species is native to Puerto Rico and surrounding islands, and the U.S. and British Virgin Islands.

**Earliest Known Voucher**: 1973 (MPM 25457–25458, 25863).

- Cataloged vouchers 1980-present (n = 234)
- Cataloged vouchers pre-1980 or unknown (n = 24)







Photographs by Christopher R. Gillette (top, bottom left) and Brian J. Camposano (bottom right).

## Anolis cybotes Cope 1862

## **Largehead Anole (Non-native)**

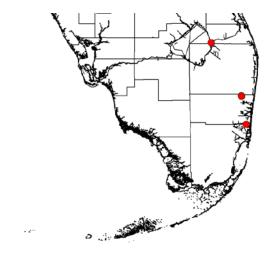
**Geographic Distribution**: There are 35 vouchered records of this non-native species from 3 counties. This species was first introduced in northeastern Miami, Miami-Dade County, by Ober (1973). Populations have since been introduced in Parkland, Broward County (Butterfield et al. 1994b), and Port Mayaca, Martin County (Krysko et al. 2005). This species is native to Hispaniola and surrounding islands.

Earliest Known Voucher: 1969 (UF 91063).

**Taxonomy:** Crother (2008) used the common name large-headed anole.

- Cataloged vouchers 1980-present (n = 22)
- Cataloged vouchers pre-1980 or unknown (n = 13)







Photographs of female (top) and male (bottom) by Kevin M. Enge.

#### Anolis distichus Cope 1861

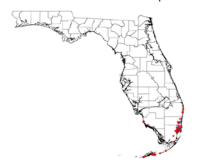
#### **Bark Anole (Non-native)**

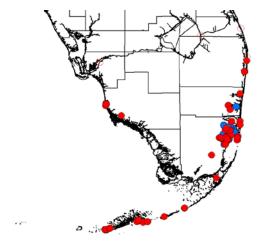
Geographic Distribution: There are 594 vouchered records of this non-native species from 5 counties and additional unverified records from Lee (Bartlett 1994) and Martin (Meshaka et al. 2004b) counties. This species was first documented in Florida in 1946 in Brickell Park, Miami, Miami-Dade County (Smith and McCauley 1948). Vouchers exist from Boynton Beach, Palm Beach County, south to Key West, Monroe County, and on the Gulf Coast from Naples, Collier County (Camposano and Johnson 2009). This species is native to the Bahamas, Hispaniola, and surrounding islands.

**Earliest Known Voucher**: 1946 (CM 28217; FMNH 55502; MCZ 50001, UIMNH 410; USNM 127114).

**Taxonomy:** Three subspecies were once recognized in Florida. The Florida subspecies (*floridanus*) was spread rather widely over much of Miami-Dade and Monroe counties; Wilson and Porras (1983) considered it to be native, but Schwartz (1971) thought that it either differentiated locally in Florida or represented a population that originated in western Andros. The greenish colored subspecies (*Anolis distichus dominicensis*) was found in Miami near the Tamiami Canal (King and Krakauer 1966), and the Bimini subspecies (*A. d. biminiensis*) was found in Lake Worth, Palm Beach County (Bartlett 1995a). However, the formerly discrete populations of *A. d. floridanus* and *A. d. dominicensis* have expanded and interbred so that they can no longer be diagnosed.

- Cataloged vouchers 1980-present (n = 201)
- Cataloged vouchers pre-1980 or unknown (n = 393)
- Unverified records 1980-present (n = 9)







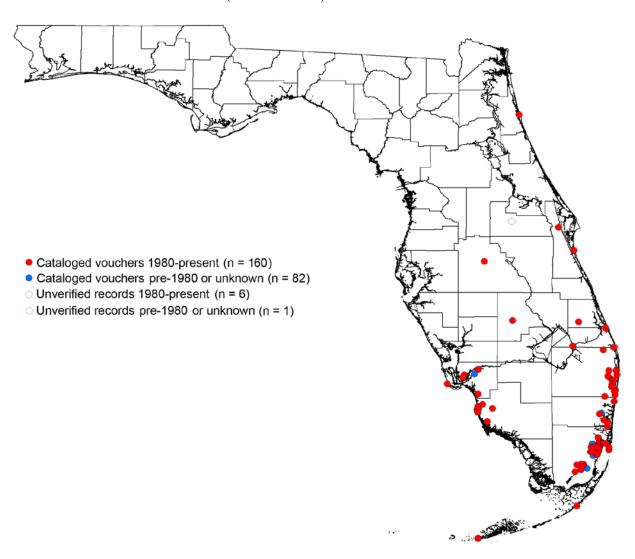
Photographs by Kenneth L. Krysko (top) and Brian J. Camposano (bottom right).

#### Anolis equestris Merrem 1820

### **Knight Anole (Non-native)**

Geographic Distribution: There are 242 vouchered records of this non-native species from 12 counties and additional unverified records from Orange and Volusia counties (Camposano et al. 2008). Breeding populations are known in Lee, Collier, St. Lucie, Martin, Palm Beach, Broward, Miami-Dade, and Monroe counties. Breeding populations may also occur in Brevard (Enge and Coben 2007) and Polk (Parker and Krysko 2009) counties, and this species has been documented as far south as Key West, Monroe County (Krysko and Borgia 2007). This canopydwelling species may live undetected in an area until a cold spell causes individuals to fall from trees, and because of its popularity in the pet trade, it probably occurs elsewhere in the southern half of Florida. It was first reported from an unspecified locality in "southern Florida" by Neill (1957). King and Krakauer (1966) claimed that the original introduction occurred in 1952 at the University of Miami's old North Campus in Coral Gables, Miami-Dade County, which is the site of the first known voucher specimen. This species is native to Cuba and surrounding islands.

### Earliest Known Voucher: 1957 (LACM 61680).





Photographs of juvenile by Christopher R. Gillette (top) and adults by Christopher R. Gillette (bottom left) and Catherine A. Smith (bottom right).

# Anolis garmani Stejneger 1899

# **Jamaican Giant Anole (Non-native)**

**Geographic Distribution**: There are 55 vouchered records of this non-native species from Miami, Miami-Dade County. The population still occurs at a site in Miami, where it has existed since at least 1975 (Wilson and Porras 1983). Populations reportedly established elsewhere in Lee (Bartlett and Bartlett 1999) and Martin (FWC's Exotic Species Database) counties may no longer be extant, and no vouchers exist. This species is native to Jamaica.

Earliest Known Voucher: 1978 (LSUMZ 35367).

- Cataloged vouchers 1980-present (n = 50)
- Cataloged vouchers pre-1980 or unknown (n = 5)
- Unverified records 1980-present (n = 2)







Photographs by Kenneth L. Krysko (top), Christopher R. Gillette (bottom left), and Brian J. Camposano (bottom right).

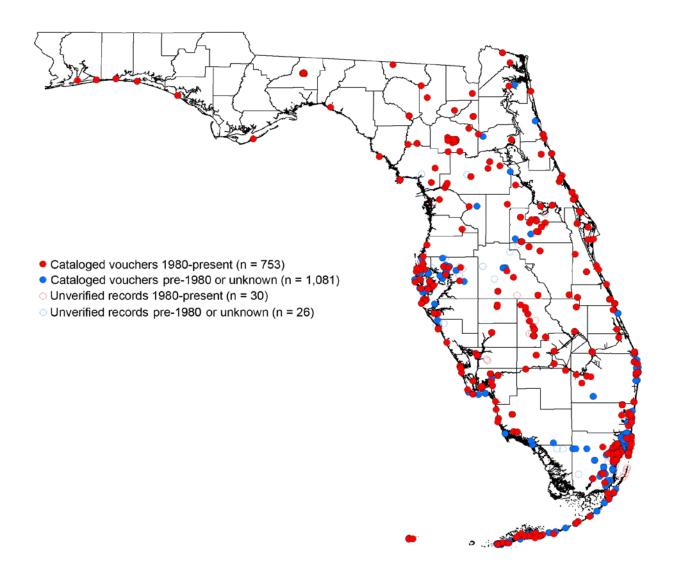
### Anolis sagrei Duméril and Bibron 1837

#### **Brown Anole (Non-native)**

Geographic Distribution: There are 1,834 vouchered records of this non-native species from 55 counties. Garman (1887) first reported this species from the Florida Keys. This species arrived in the major seaports of southern and central Florida during the 1940s (Oliver 1950, Bell 1953) and had become firmly established in most large, urbanized areas south of Gainesville by 1980 (Godley et al. 1981, Lee 1985). By 2003, populations occurred in every county in the peninsula (Campbell 2003), and populations now occur in at least 6 counties in the panhandle. This species is native to Cuba, the Bahamas, and the Swan Islands and Islas de la Bahia of Honduras.

**Earliest Known Voucher**: 1926 (MCZ 25074–25085).

**Taxonomy:** A Bahamian (*Anolis sagrei ordinatus*) and Cuban (*A. s. sagrei*) subspecies could once be distinguished in Florida (King and Krakauer 1966), but they can no longer be recognized due to extensive intergradation (Lee 1985, 1987). Over 99% of individuals sampled from introduced populations have haplotypes identical or closely related to ones found in Cuba (Kolbe et al. 2004). A minimum of 8 introductions into Florida from geographically distinct source populations have occurred based upon haplotypes from 8 different clades that do not occur together in Cuba.





Photographs of females by Steve A. Johnson (top left) and Kevin M. Enge (top right, center left), and males by Kenneth L. Krysko (center right) and Kevin M. Enge (bottom left & right).

### Anolis trinitatis Reinhardt and Lütken 1862

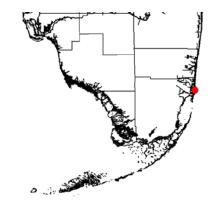
# St. Vincent Bush Anole (Non-native)

**Geographic Distribution**: There are 2 vouchers of this non-native species from Miami Beach, Miami-Dade County. Eleven individuals of all size classes were removed from the garden area of the Fountainbleau Hotel in 2004–2005 (Krysko et al. 2011), but some tree removal has occurred since then, and the current status of the population is unknown. This species is native to St. Vincent, Young Island, and Chateaubelair Island in the Lesser Antilles.

Earliest Known Voucher: 2005 (UF 144299).

Cataloged vouchers 1980-present (n = 2)







Photographs by Joseph P. Burgess.

### FAMILY TROPIDURIDAE

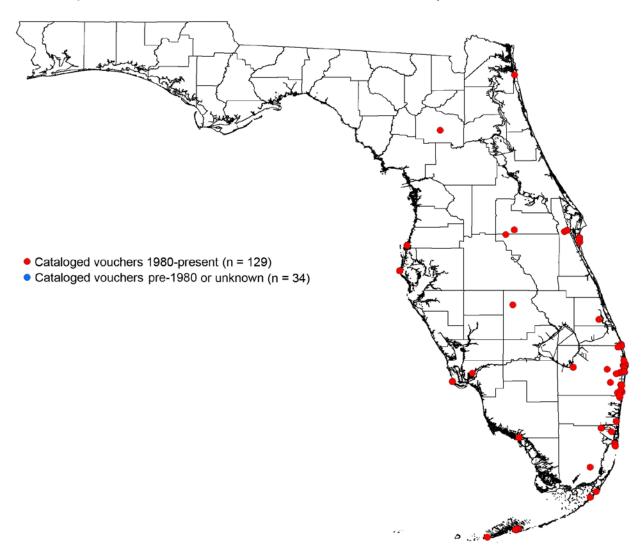
# Leiocephalus carinatus Gray 1827

# **Northern Curlytail Lizard (Non-native)**

**Geographic Distribution**: There are 163 vouchered records of this non-native species from 15 counties. It was first recorded in Miami, Miami-Dade County (Barbour 1936). This species is native to the Bahamas, Cuba, Cayman Islands, and the Swan Islands, Honduras.

Earliest Known Voucher: 1955 (UF 121296).

**Taxonomy:** Crother (2008) used the common name northern curly-tailed lizard.





Photographs by Kenneth L. Krysko.

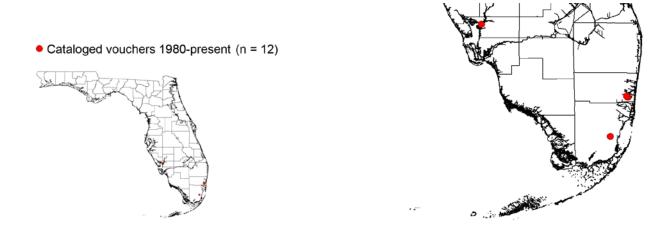
# Leiocephalus schreibersii (Gravenhorst 1837)

# Red-sided Curlytail Lizard (Non-native)

**Geographic Distribution:** There are 12 vouchered records of this non-native species from Broward, Charlotte, and Miami-Dade counties. This species is native to Hispaniola.

Earliest Known Voucher: 2000 (UF 121397–121399).

**Taxonomy:** Crother (2008) uses the common name red-sided curly-tailed lizard.





Photographs of female by Kevin M. Enge (top) and male by Kenneth L. Krysko (bottom).

#### FAMILY AGAMIDAE

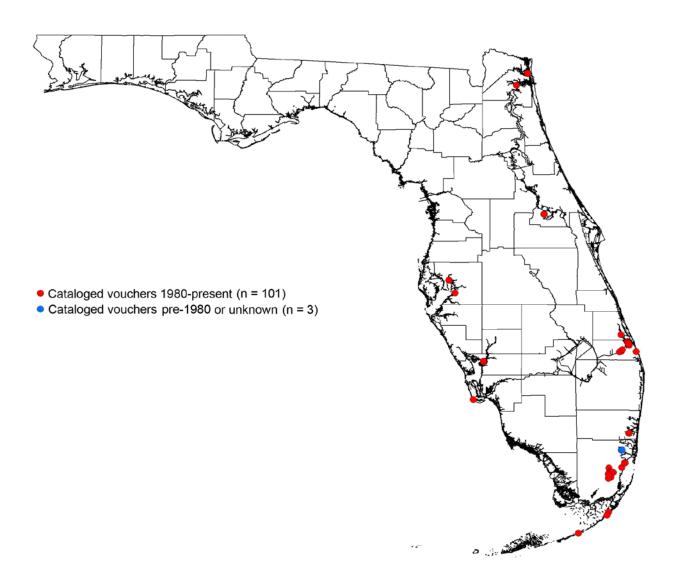
#### Agama agama africana Hallowell 1844

### **African Rainbow Lizard (Non-native)**

Geographic Distribution: There are 104 vouchered records of this non-native species from 9 counties, and several apparently established populations occur from Sanford, Seminole County, south to Homestead, Miami-Dade County (Enge et al. 2004b). Enge et al. (2010) reported an established population in Duval County, but hard freezes in 2010 and 2011 may have extirpated this population (C. Hubbuch, personal communication). Vouchers were collected from a population established in Miami since 1976 (later extirpated by urban development [Wilson and Porras 1983]), but neither institution (LSUMZ or UF below) records the actual collection year. Vouchers from Key Largo (UF 137389) and Long Key (UF 154859) in Monroe County may not represent established populations. This species is native to tropical, sub-Saharan Africa from Senegal east to Ethiopia, and south to northern Angola and southern Tanzania.

**Earliest Known Voucher**: 1976? (LSUMZ 36647, UF 43490).

**Taxonomy:** Apparently, only the subspecies *Agama agama africana* is established in Florida, which is native to Ghana, Togo, and possibly Benin in western Africa (Enge et al. 2004b).





Photographs of female by Kevin M. Enge (top) and male by Kenneth L. Krysko (bottom).

### Calotes sp. cf. versicolor (Daudin 1802)

#### Variable Bloodsucker (Non-native)

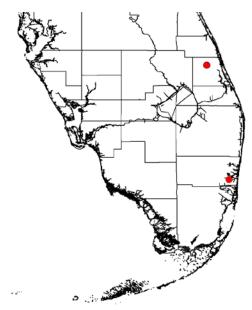
Geographic Distribution: There are 12 vouchered records of this non-native species from Broward and St. Lucie counties. Enge and Krysko (2004) first reported *Calotes* sp. cf. *versicolor* from west of Port St. Lucie, St. Lucie County, but the population was established at least 10 years earlier. The 2009 voucher (UF 157299) from Broward County came from a reptile dealer's facility in Hollywood and probably does not represent an established population. This species is native to southeastern Iran and Afghanistan east to Indo-China and as far south as Sri Lanka, Sumatra, and northern Peninsular Malaysia.

Earliest Known Voucher: 2003 (UF 137448).

**Taxonomy:** Zug et al. (2006) suggested that *Calotes "versicolor*" is a complex of several species, and the identity of the introduced population in Florida has not yet been determined.

• Cataloged vouchers 1980-present (n = 12)







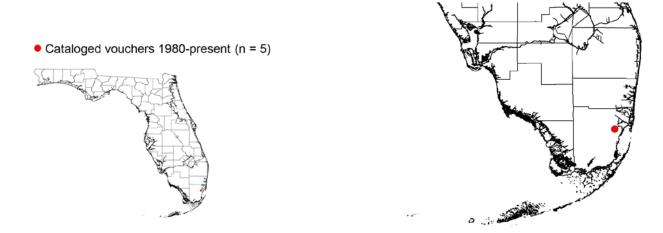
Photographs of hatchling by Kenneth L. Krysko (top left) and female by Kevin M. Enge (bottom).

# Leiolepis belliana (Hardwicke and Gray 1827)

# **Butterfly Lizard (Non-native)**

**Geographic Distribution:** There are 5 vouchered records of this non-native species from Kendall, Miami-Dade County (Krysko and Enge 2005). This species is native to Thailand, Myanmar, the Malay Peninsula, Pinang Island, Bangka, and Sumatra.

Earliest Known Voucher: 2004 (UF 141589).





Photographs by Kenneth L. Krysko (top) and Kevin M. Enge (bottom).

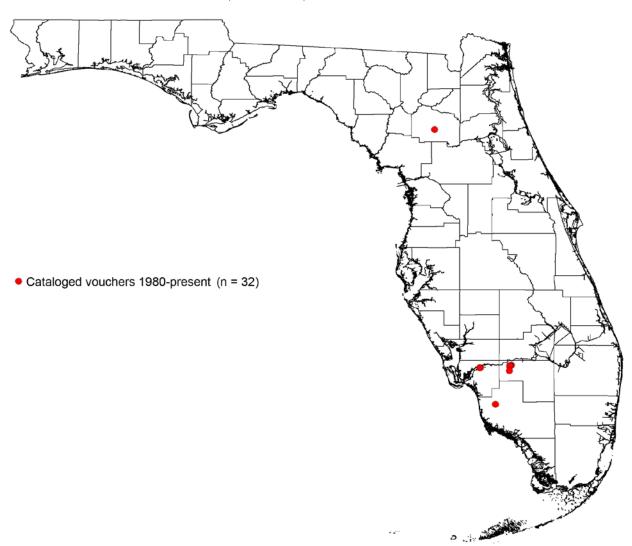
#### FAMILY CHAMAELEONIDAE

### Chamaeleo calyptratus Duméril and Bibron 1851

### **Veiled Chameleon (Non-native)**

Geographic Distribution: There are 32 vouchered records of this non-native species from 4 counties. Populations are established in Lee County, but a specimen collected in 2002 from Naples, Collier County, apparently was not part of a population (Krysko et al. 2004). A population is now established near La Belle, Hendry County (Enge 2008). The voucher (UF 165845) from Gainesville, Alachua County, in 2011 likely does not represent an established population. This species is native to the Asir Province in southwestern Saudi Arabia to Aden in Yemen.

Earliest Known Voucher: 2002 (UF 140472).





Photographs by Kevin M. Enge (top) and Christopher R. Gillette (bottom).

# Furcifer oustaleti (Mocquard 1894)

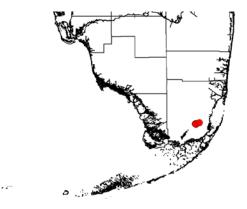
# **Oustalet's Chameleon (Non-native)**

**Geographic Distribution:** There are 65 vouchered records of this non-native species from Florida City, Miami-Dade County, where an established population has occurred since ca. 2000 (Gillette et al. 2010). This species is native to Madagascar.

**Earliest Known Voucher**: 2010 (UF 163066–67).

• Cataloged vouchers 1980-present (n = 65)







Photographs of female by Christopher R. Gillette (top) and male by Kenneth L. Krysko (bottom).

#### FAMILY SPHAERODACTYLIDAE

#### Gonatodes albogularis (Duméril and Bibron 1836)

### Yellowhead Gecko (Non-native)

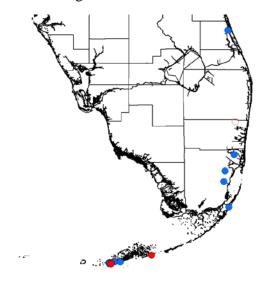
Geographic Distribution: There are 78 vouchered records of this non-native species from Miami-Dade, Monroe, and St. Lucie counties and an additional unverified record from Parkland, Broward County (Bartlett and Bartlett 1995). The first voucher (YPM 1308) in Florida is from Opa-Locka, Miami-Dade County, in 1934, but it was first reported from Key West, Monroe County (Carr 1939), where it was likely introduced from Cuba ca. 1933 (Krysko 2005). A population reported in Coconut Grove, Miami-Dade County (King and Krakauer 1966), has apparently been extirpated like all other populations in peninsular Florida. Although this species has declined over the last two decades (Krysko 2005), specimens were collected from Bahia Honda Key, Monroe County, in 2008 (Burgess et al. 2008) and 2010 (K. L. Krysko, personal observation). This species is native to lowlands from Chiapas, Mexico, on the Pacific slope and Guatemala on the Atlantic slope south to northwestern Colombia and western Venezuela. It also occurs on Aruba, Curaçao, Tortuga, Orchila, Gorgona, Hispaniola, Jamaica, the Cayman Islands, and Cuba.

Earliest Known Voucher: 1934 (YPM 1308).

**Taxonomy:** Crother (2008) used the common name yellow-headed gecko.

- Cataloged vouchers 1980-present (n = 4)
- Cataloged vouchers pre-1980 or unknown (n = 74)
- Unverified records 1980-present (n = 1)







Photographs of female by Joseph P. Burgess (top) and males by Joseph P. Burgess (bottom right) and Kevin M. Enge (bottom left).

### Sphaerodactylus argus Gosse 1850

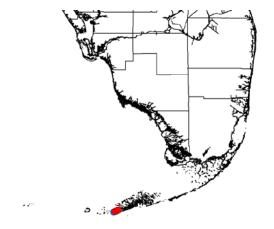
# Ocellated Gecko (Non-native)

**Geographic Distribution:** There are 18 vouchered records of this non-native species from Stock Island and Key West, Monroe County. The species is in relatively low abundance and has a more limited distribution than other *Sphaerodactylus* in Florida (Krysko and King 2002, Krysko and Sheehy 2005). This species is native to Jamaica, Cuba, the Bahamas, Isla San Andrés and Islas de Maiz of Nicaragua, and the northern coast of the Yucatán Peninsula.

Earliest Known Voucher: 1944 (CAS-SUR 10439–10440, 10442).

- Cataloged vouchers 1980-present (n = 6)
- Cataloged vouchers pre-1980 or unknown (n = 12)







Photographs of juvenile (top) and adult (bottom) by Kenneth L. Krysko.

# Sphaerodactylus elegans MacLeay 1834

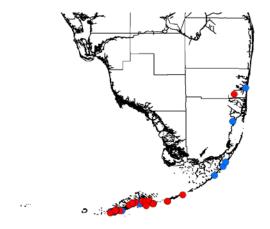
# Ashy Gecko (Non-native)

**Geographic Distribution**: There are 292 vouchered records of this non-native species from Broward, Miami-Dade, and Monroe counties. It was first found in 1921 or 1922 on Key West, Monroe County (Stejneger 1922). This species is native to Cuba and surrounding islands and western Hispaniola.

**Earliest Known Voucher**: 1931 (CM 6220–6222; MCZ 31496, 31636–31643).

- Cataloged vouchers 1980-present (n = 87)
- Cataloged vouchers pre-1980 or unknown (n = 205)







Photographs of hatchling (top) and adult (bottom) by Kenneth L. Krysko.

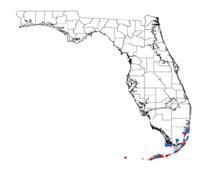
# Sphaerodactylus notatus Baird 1859

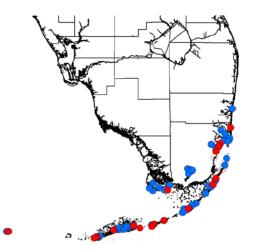
# Florida Reef Gecko

**Geographic Distribution**: There are 380 vouchered records from Broward, Miami-Dade, and Monroe counties. It was first reported from Brickell's Hammock, Miami, Miami-Dade County, in 1916 (Fowler 1917).

Earliest Known Voucher: 1903 (USNM 32095).

- Cataloged vouchers 1980-present (n = 59)
- Cataloged vouchers pre-1980 or unknown (n = 321)
- Unverified records 1980-present (n = 7)







Photographs of male by Kevin M. Enge (top) and female by Joseph P. Burgess (bottom).

### **FAMILY GEKKONIDAE**

# Gekko badenii Szczerbak and Nekrasova 1994

# **Golden Gecko (Non-native)**

**Geographic Distribution**: There are 7 vouchered records of this non-native species from Hollywood, Broward County. The first voucher (UF 153894) in Florida is from 2008 (Krysko et al. 2011). This species is native to Vietnam.

Earliest Known Voucher: 2008 (UF 153894).

Cataloged vouchers 1980-present (n = 7)







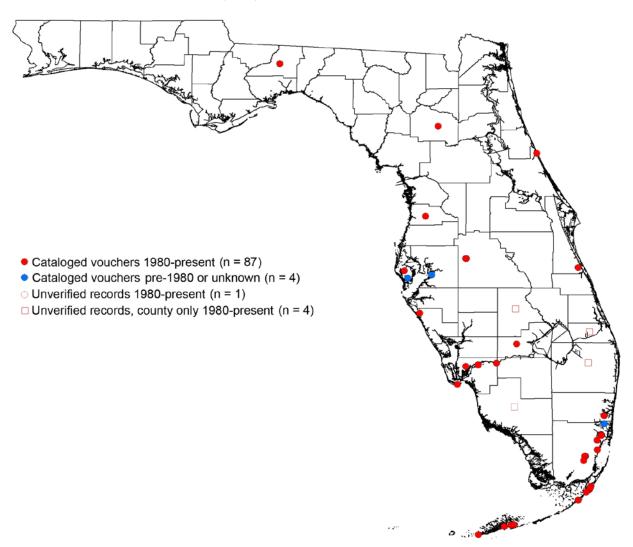
Photographs by Christopher R. Gillette (top) and Kenneth L. Krysko (bottom).

### Gekko gecko (Linnaeus 1758)

#### **Tokay Gecko (Non-native)**

Geographic Distribution: There are 91 vouchered records of this non-native species from 14 counties and additional unverified records from Collier, Palm Beach (Bartlett and Bartlett 1999), Highlands, and Martin (Meshaka et al. 2004b) counties. This species was reported in Gainesville, Alachua County, as early as 1963 (King and Krakauer 1966). The northernmost population reported is in Tallahassee, Leon County, where it has occurred since 1991 (Means 1996), and the southernmost populations are in the Florida Keys (Krysko et al. 2005). The native range of this species extends from northeastern India east to southern China and throughout the Malay Peninsula, the Andamans, the Philippines, and much of Indonesia.

# Earliest Known Voucher: 1975 (USF).





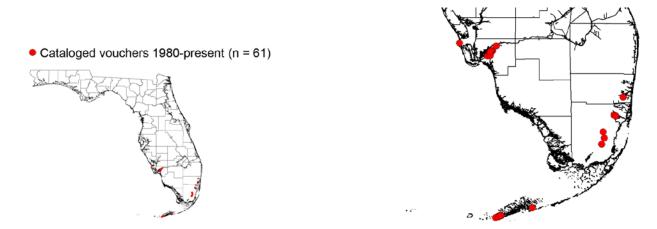
Photographs by Kenneth L. Krysko.

# Hemidactylus frenatus Duméril and Bibron 1836

#### **Common House Gecko (Non-native)**

Geographic Distribution: There are 61 vouchered records of this non-native species from 4 counties. This species is common in the pet trade and has been widely introduced in tropical areas around the world, but populations in Florida appear to be restricted to Key West and Stock Island (Meshaka et al. 1994), Big Pine Key (Krysko and Sheehy 2005), Monroe County, and the vicinity of reptile dealerships in Fort Myers, Lee County (Bartlett and Bartlett 1999); Miami and Homestead, Miami-Dade County (Meshaka et al. 2004b; UF specimens); and Hollywood, Broward County (Krysko et al. 2005). This species' native range is difficult to determine, as it is found in the Mediterranean region, southern and eastern Africa, Madagascar, Mauritius, northern Australia, New Guinea, Philippines, Indonesian Archipelago, southern and eastern Asia, Taiwan, Hong Kong, Hainan and southern Yunnan in China, the Ryukyu and Bonin islands of Japan, Guam, and throughout Oceania.

Earliest Known Voucher: 1993 (USNM 504373-504383).





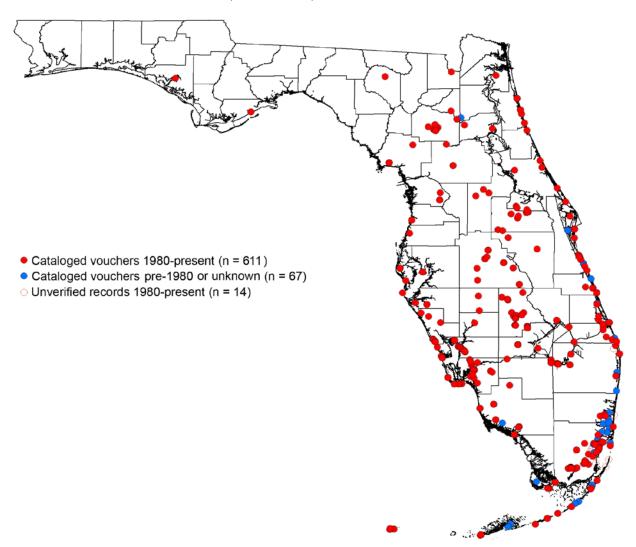
Photographs by Kevin M. Enge (top) and Kenneth L. Krysko (bottom).

# Hemidactylus garnotii Duméril and Bibron 1836

# **Indo-Pacific House Gecko (Non-native)**

Geographic Distribution: There are 678 vouchered records of this non-native species from 43 counties. It occurs mostly from Duval County southwards, but it has been recorded in the panhandle from Panama City, Bay County (Himes and Enge 2007), and Carrabelle, Franklin County (USNM 504476, 504477). This is a parthenogenetic (all female) species, thus records likely represent established populations. This species is native to northeastern India, southern China, Malay Peninsula, Indonesian archipelago, Philippines, and Oceania.

Earliest Known Voucher: 1963 (MCZ 77585).





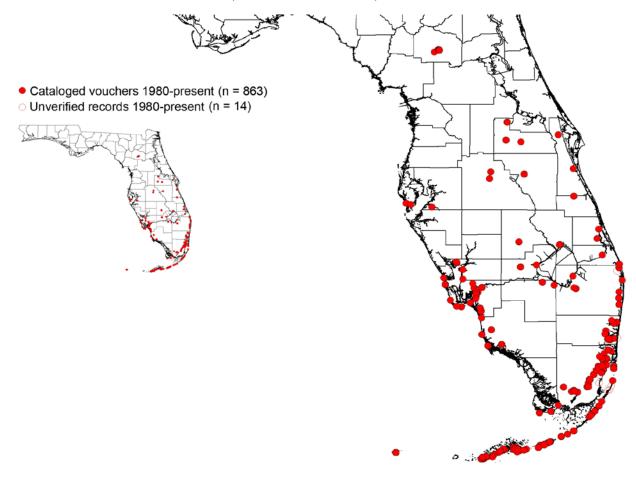
Photographs by Daniel Parker (top) and Kenneth L. Krysko (bottom).

# Hemidactylus mabouia (Moreau de Jonnès 1818)

# **Tropical House Gecko or Wood Slave (Non-native)**

**Geographic Distribution**: There are 863 vouchered records of this non-native species from 21 counties. Fowler (1915) reported it from Key West in 1910, but this was a misidentified *Hemidactylus turcicus*. Lawson et al. (1991) first found this species in 1990 on Crawl Key, Monroe County. This species is native to tropical Africa south of the Sahara.

**Earliest Known Voucher**: 1990 (CAS 174849–174853).





Photographs of hatchling (top) and adult (bottom) by Kenneth L. Krysko.

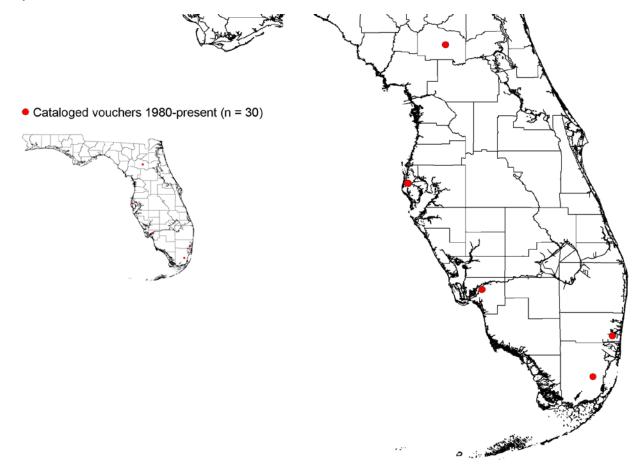
### Hemidactylus platyurus (Schneider 1792)

# Asian Flat-tailed House Gecko (Non-native)

**Geographic Distribution:** There are 30 vouchered records of this non-native species from Alachua, Broward, Lee, Miami-Dade, and Pinellas counties. Populations are established in the vicinity of reptile dealerships. This species is native to eastern India, the Andaman and Nicobar islands, Nepal, and Bangladesh east to eastern China and southeastern Asia.

Earliest Known Voucher: 1993 (USNM 504372).

**Taxonomy:** Formerly *Cosymbotus platyurus*, this genus was synonomized with *Hemidactylus* by Carranza and Arnold (2006).





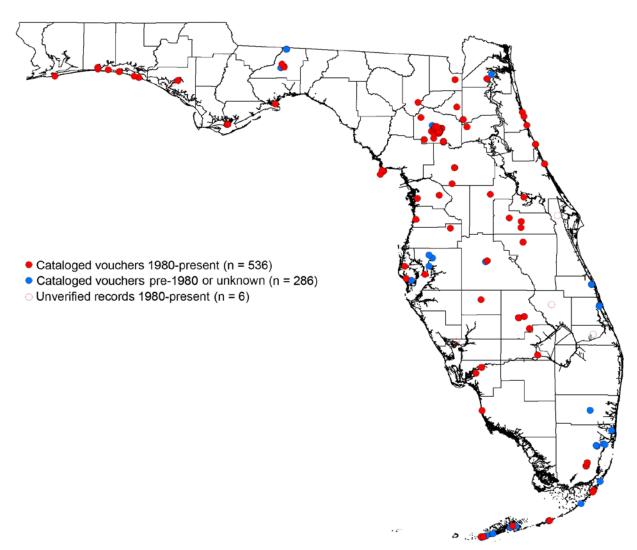
Photographs of juvenile (top) and adult (bottom) by Kenneth L. Krysko.

### Hemidactylus turcicus (Linneaus 1758)

# **Mediterranean Gecko (Non-native)**

Geographic Distribution: There are 822 vouchered records of this non-native species from 38 counties and additional unverified records from Brevard (Criscione et al. 1998), Charlotte (McCoid 2002b), Martin, Okeechobee (Meshaka et al. 2004b), and Highlands (Meshaka 1997) counties. Fowler (1915) first collected this species in Key West in 1910, but it was initially recorded as *Hemidactylus mabouia*. This species is native to coastal regions from western India and Somalia around both sides of the Mediterranean Basin to Spain, Morocco, and the Canary Islands.

Earliest Known Voucher: 1915 (USNM 61255).





Photographs of juvenile by Kenneth L. Krysko (top) and adult by Kevin M. Enge (bottom).

# Lepidodactylus lugubris (Duméril and Bibron 1836)

### **Mourning Gecko (Non-native)**

Geographic Distribution: There are 2 vouchers of this non-native species from St. Lucie County (Krysko et al. 2011). According to Meshaka et al. (2004), this species has been observed on buildings of pet dealers in Ft. Myers, Lee County, and Miami, Miami-Dade County, although no individuals were observed at the Ft. Myers site after the dealer went out of business. This is a parthenogenetic (all female) species that is native to southeastern Asia and many islands in the western and central Pacific Ocean.

Earliest Known Voucher: 2005 (UF 151603).

**Taxonomy:** This species is a unisexual complex of diploid and triploid populations of apparently independent origins (Moritz et al. 1993, Volobouev et al. 1994).

Cataloged vouchers 1980-present (n = 2)
 Unverified records, county only 1980-present (n = 2)







Photographs by Kenneth L. Krysko (top) and Tony Gamble (bottom).

# Phelsuma grandis Gray 1831

### **Madagascar Giant Day Gecko (Non-native)**

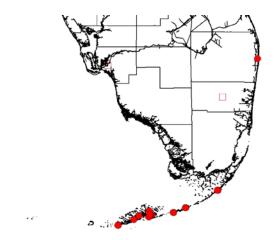
**Geographic Distribution:** There are 76 vouchered records from Palm Beach and Monroe counties and additional unverified records from Broward and Lee counties (Bartlett and Bartlett 1999). It has been documented from 9 islands in the Florida Keys, Monroe County (Krysko 2010). This species is native to northern and northwestern Madagascar.

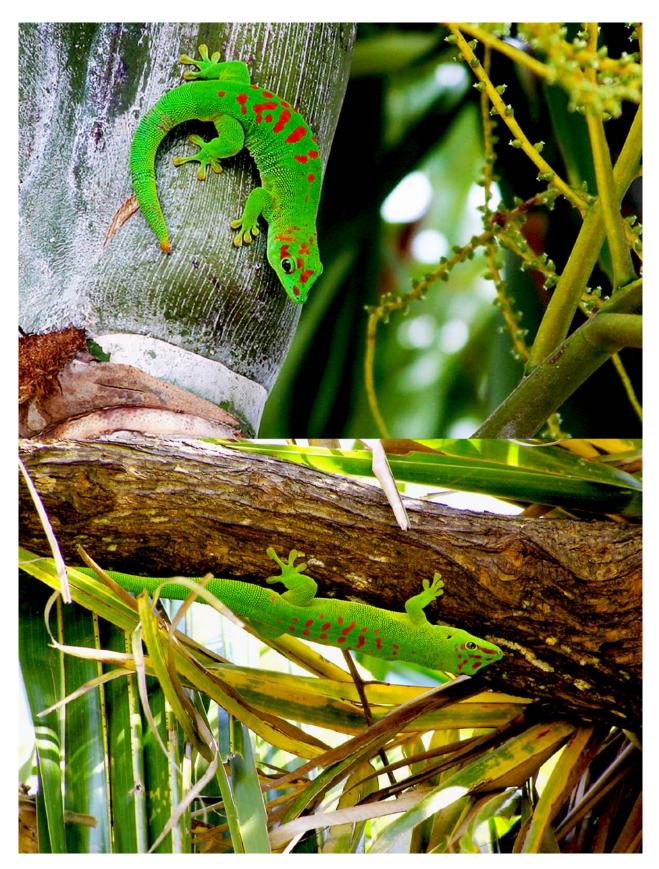
Earliest Known Voucher: 2002 (UF 130735).

**Taxonomy:** Formerly *Phelsuma madagascariensis grandis* but now elevated to full species status (Rocha et al. 2010).

- Cataloged vouchers 1980-present (n = 74)
- Cataloged vouchers, county only 1980-present (n = 2)







Photographs by Kenneth L. Krysko.

#### FAMILY PHYLLODACTYLIDAE

# Tarentola annularis (Geoffroy Saint-Hilaire 1827)

# Ringed Wall Gecko (Non-native)

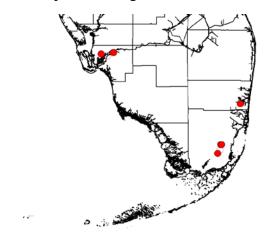
**Geographic Distribution:** There are 44 vouchered records of this non-native species from Lee, Broward, and Miami-Dade counties. A population existed for at least 2 years at a pet shop in Tallahassee, Leon County (K. M. Enge, personal observation), but this building has since been razed. This species is native to Africa.

Earliest Known Voucher: 1996 (UMMZ 217545).

**Taxonomy:** This species is sometimes referred to as the white-spotted wall gecko.

• Cataloged vouchers 1980-present (n = 44)







Photographs of juvenile (top) and adult (bottom) by Kenneth L. Krysko.

### Tarentola mauritanica (Linnaeus 1758)

# Moorish Gecko (Non-native)

Geographic Distribution: There are 7 vouchered records of this non-native species from Hollywood, Broward County. Bartlett and Bartlett (1999) reported that this species occurred in 2 small areas of Lee County and a slightly larger area of Miami-Dade County and indicated that hatchlings were first reported in 1996. However, no vouchers exist and specific localities were not provided. This species is native to the western Mediterranean region of Europe and northern Africa.

Earliest Known Voucher: 2009 (UF 157285).

Cataloged vouchers 1980-present (n = 7)







Photographs by Todd W. Pierson (top) and Christopher R. Gillette (bottom).

#### FAMILY TEIDAE

#### Ameiva ameiva (Linnaeus 1758)

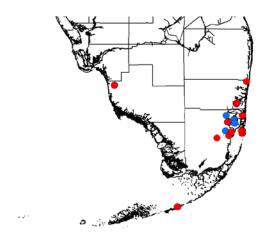
#### **Giant Ameiva (Non-native)**

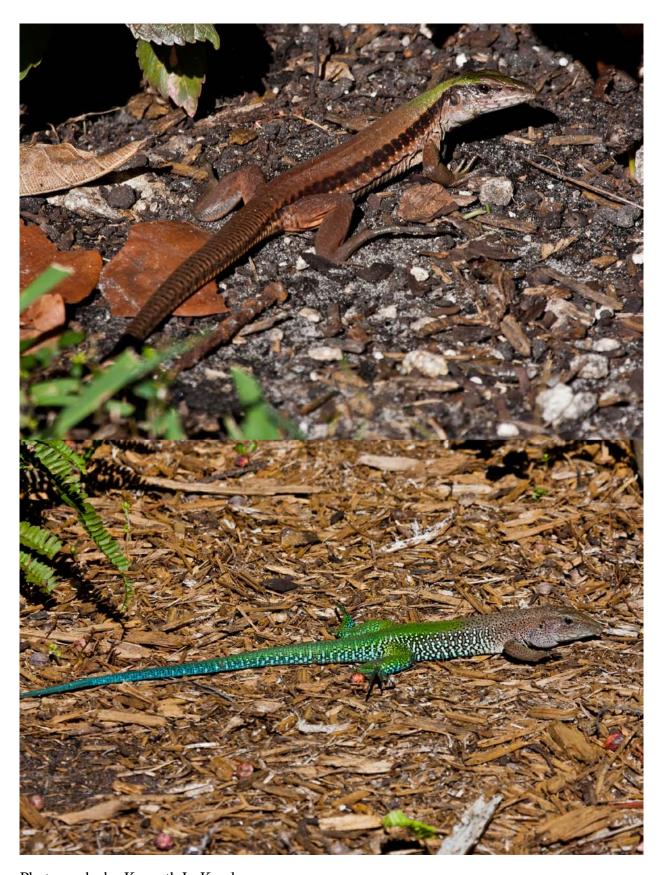
Geographic Distribution: There are 64 vouchered records of this non-native species from Broward, Collier, Miami-Dade, and Monroe counties. Populations occur from Deerfield Beach, Broward County (Krysko et al. 2005), south to Grassy Key, Monroe County (Hardin et al. 2009), and an additional population in Naples, Collier County (UF 157195, 157196, 157198, 165701). This species has one of the widest geographical distributions of all Neotropical lizards, occurring on the Atlantic versant of South America from southern Brazil, Paraguay, Peru, and northern Argentina north to Colombia. It is also found in central Panama, extreme southwestern Costa Rica, the Swan Islands of Honduras, Trinidad, Tobago, Grenada, and the Grenadines.

# Earliest Known Voucher: 1954 (UMMZ 111408).

- Cataloged vouchers 1980-present (n = 45)
- Cataloged vouchers pre-1980 or unknown (n = 19)
- Unverified records 1980-present (n = 3)







Photographs by Kenneth L. Krysko.

# Aspidoscelis motaguae Sackett 1941

# **Giant Whiptail (Non-native)**

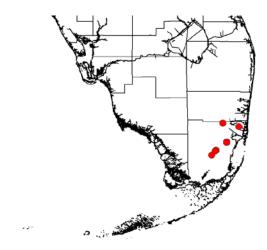
**Geographic Distribution:** There are 17 vouchered records of this non-native species from Miami-Dade County. It was first reported from Miami in 1995 (Bartlett 1995b). This species' native range is discontinuous; it occurs as far north as central Oaxaca, Mexico, and extends south to southeastern Guatemala, El Salvador, and central Honduras.

Earliest Known Voucher: 1994 (KU 222211).

**Taxonomy:** Formerly *Cnemidophorus motaguae*, Reeder et al. (2002) resurrected *Aspidoscelis* for the North American clade.

Cataloged vouchers 1980-present (n = 17)







Photographs by Kevin M. Enge.

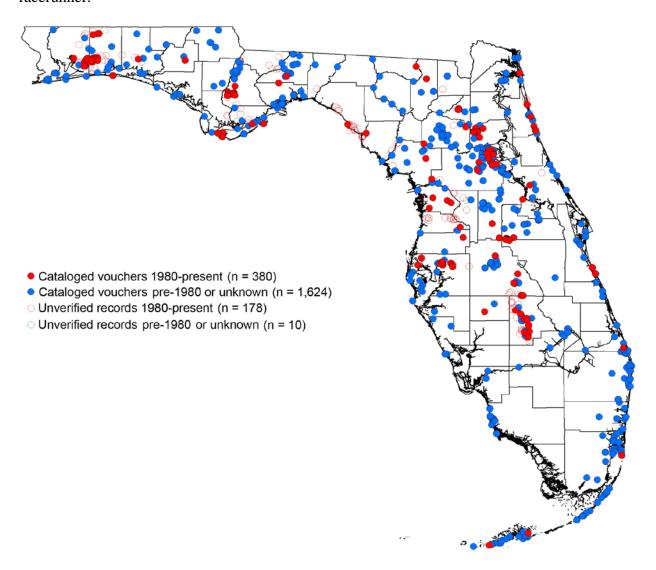
# Aspidoscelis sexlineata (Linnaeus 1766)

#### **Six-lined Racerunner**

**Geographic Distribution:** There are 2,004 vouchered records from 65 counties and additional unverified records from Bradford County (Enge et al. 1996, Enge 1998). This species likely occurs throughout the state, but no record exists from DeSoto County.

Earliest Known Voucher: 1868 (YPM 823).

**Taxonomy:** Formerly *Cnemidophorus sexlineatus*, Reeder et al. (2002) resurrected *Aspidoscelis* for the North American clade. Crother (2008) used the common name eastern six-lined racerunner.





Photographs by Dirk J. Stevenson (top) and Pierson Hill (bottom).

### Cnemidophorus lemniscatus complex (Linnaeus 1758)

# **Rainbow Whiptail (Non-native)**

**Geographic Distribution**: There are 13 vouchered records of this non-native species from Hialeah, Miami-Dade County. This species is native to southeastern Guatemala on the Pacific slope and Belize and Honduras on the Atlantic slope south to northern Argentina east of the Andes. It is also found on many islands off the northern coast of South America.

**Earliest Known Voucher**: ca. 1970 (LSUMZ 36651–36653).

**Taxonomy:** The geographic origin of populations in Florida is unknown. At least 2 diploid bisexual species and 2 unisexual cryptic species (1 diploid and 1 triploid) have been referred to using the name *Cnemidophorus lemniscatus* in northern South America (Cole and Dessauer 1993).

- Cataloged vouchers 1980-present (n = 9)
- Cataloged vouchers pre-1980 or unknown (n = 4)







Photographs of female (top) and male (bottom) by Christopher R. Gillette.

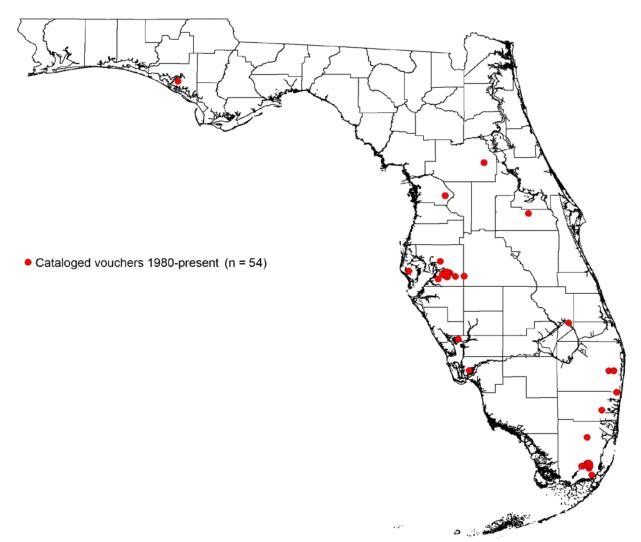
# Tupinambis merianae Duméril and Bibron 1839

# **Argentine Giant Tegu (Non-native)**

Geographic Distribution: There are 54 vouchered records of this non-native species from 11 counties. Enge et al. (2006) first reported an established population in Hillsborough and western Polk counties, and another population occurs in Miami-Dade County (Dennis Giardina, FWC, personal communication). This species is native to northeastern Brazil south through Uruguay and eastern Paraguay to the Negro River in northern Argentina.

Earliest Known Voucher: 2002 (UF 135044).

**Taxonomy:** This species was previously referred to as the Argentine black and white tegu.





Photographs of hatchlings by Kevin M. Enge (top) and adult male by Jackie C. Guzy–Biological Research Associates (bottom).

### **FAMILY SCINCIDAE**

# Chalcides ocellatus (Forskål 1775)

# Ocellated Skink (Non-native)

**Geographic Distribution**: There are 5 vouchered records of this non-native species from New Port Richey, Pasco County, and Miramar, Broward County. It is apparently established at both localities (Krysko et al. 2011). This species is native to sub-Saharan Africa, the Mediterranean, and the Middle East.

Earliest Known Voucher: 1999 (UF 135284).

• Cataloged vouchers 1980-present (n = 5)







Photographs by Kevin M. Enge (top) and Kenneth L. Krysko (bottom).

# Eutropis multifasciata (Kuhl 1820)

# Many-lined Sun Skink (Non-native)

**Geographic Distribution:** There are 5 vouchered records of this non-native species from Coconut Grove, Miami-Dade County, where it was first reported by Meshaka (1999). This species is native to India, southern China, Taiwan, Hainan, Thailand, Myanmar, Laos, Cambodia, Vietnam, Malay Peninsula, Singapore, Indonesia Archipelago, New Guinea, and the Philippines.

Earliest Known Voucher: 1998 (USNM 523790).

**Taxonomy:** Formerly *Mabuya multifasciata*, but now part of the southeastern Asian genus *Eutropis* (Mausfeld and Schmitz 2003). Crother (2008) used the common name brown mabuya.

Cataloged vouchers 1980-present (n = 5)
 Unverified records 1980-present (n = 2)







Photographs by Randall D. Babb.

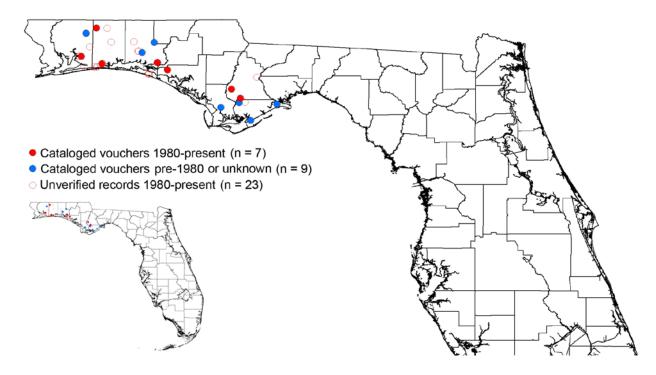
# Plestiodon anthracinus pluvialis Cope 1880

### **Southern Coal Skink**

**Geographic Distribution:** There are 16 vouchered records from 8 counties. This species occurs in the panhandle from the vicinity of the Ochlockonee River westward. Within its apparent range, no records exist from Calhoun, Escambia, Wakulla, and Washington counties.

Earliest Known Voucher: 1957 (UF 9364).

**Taxonomy:** Formerly *Eumeces anthracinus*, but Brandley et al. (2005) resurrected the name *Plestiodon* for North American *Eumeces* north of Mexico.





Photographs of juvenile by Aubrey M. Heupel (top) and adult male by Barry Mansell (bottom).

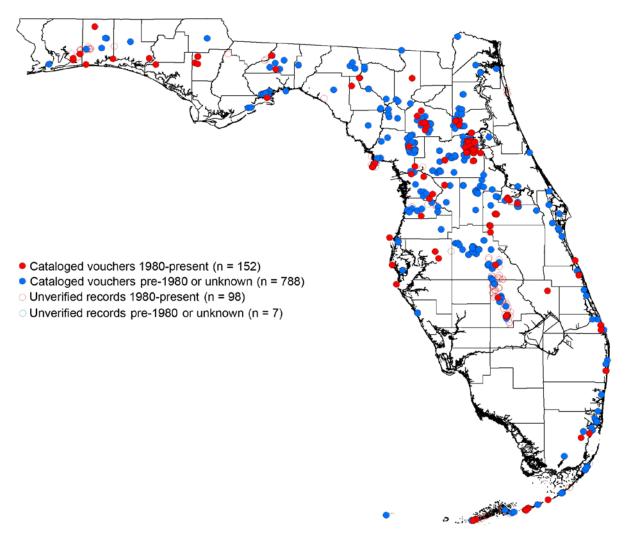
# Plestiodon egregius (Baird 1859)

#### **Mole Skink**

Geographic Distribution: There are 940 vouchered records from 47 counties and additional unverified records from Liberty (Means and Studenroth 1994), Gadsden (FWC survey of Joe Budd WMA), and St. Johns (FWC survey of Guana River WMA) counties. This species likely occurs throughout Florida except the poorly drained area south of Lake Okeechobee and possibly the southwestern peninsula. Within its apparent range, records do not exist from Bradford, Charlotte, Flagler, Hamilton, Holmes, Manatee, and Washington counties.

**Earliest Known Voucher**: 1883 (USNM 13700–13701). Cope (1871) reported that C. J. Maynard collected a specimen from Dummett's Plantation (Duval County?) for the Museum of the Peabody Academy of Science.

**Taxonomy:** Formerly *Eumeces egregius*, but Brandley et al. (2005) resurrected *Plestiodon* for North American *Eumeces* north of Mexico. Five subspecies occur in Florida: Florida Keys (*egregius* [Baird 1859]), Cedar Key (*insularis* Mount 1965), bluetail (*lividus* Mount 1965), peninsula (*onocrepis* [Cope 1871]), and northern (*similis* McConkey 1957) mole skinks.





Photographs of *similis* by Pierson Hill (top left) and Dirk J. Stevenson (top right), *insularis* by Barry Mansell (center left), *lividus* by Pierson Hill (center right), *onocrepis* by Dustin C. Smith (bottom left), and *egregius* by Barry Mansell (bottom right).

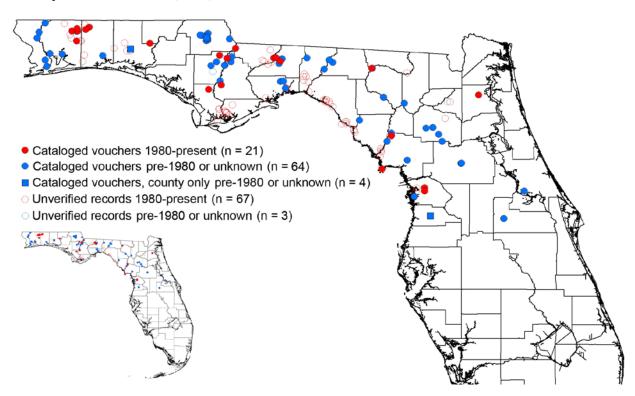
### Plestiodon fasciatus (Linnaeus 1758)

#### **Five-lined Skink**

Geographic Distribution: There are 89 vouchered records from 27 counties and additional unverified records from Bradford (Vickers 1980, Enge and Marion 1986), Franklin (FWC 2008), and Taylor (Enge and Wood 1998, Surdick et al. 2010) counties. Taylor (1935) included northern Florida in the range of *P. fasciatus* based on specimens purportedly from Marion County, but Goin (1940) questioned the occurrence of this species in Florida based upon these specimens. Neill and Allen (1950) confirmed its presence based upon specimens collected from Calhoun County in 1949; however, previous museum specimens already existed from Santa Rosa County in 1934 (UF 731), Liberty County in 1935 (UF 2115), and Jackson County in 1942 (UF 7373). This species occurs throughout the panhandle and south to Polk County in the peninsula, but records are lacking east of the St. Johns River except for a 1937 voucher (ANSP 4772) from Enterprise, Volusia County. Within its apparent range, records do not exist from Bay, Duval, Lafayette, Lake, Nassau, Osceola, Putnam, Sumter, Union, and Washington counties.

Earliest Known Voucher: 1917 (CM 1149).

**Taxonomy:** Formerly *Eumeces fasciatus*, but Brandley et al. (2005) resurrected *Plestiodon* for North American *Eumeces* north of Mexico. This species is easily confused with juvenile *P. laticeps*, and many of the purported voucher specimens of *P. fasciatus* are actually *P. laticeps* or *P. inexpectatus*. Crother (2008) used the common name common five-lined skink.





Photographs by Kevin M. Enge (top) and Kelly Jones (bottom).

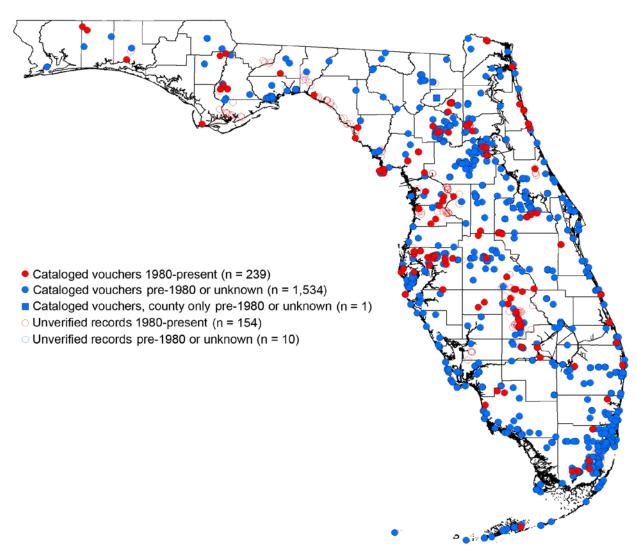
### Plestiodon inexpectatus Taylor 1932

#### **Southeastern Five-lined Skink**

**Geographic Distribution:** There are 1,765 vouchered records from 61 counties and additional unverified records from Gadsden County (FWC surveys of Joe Budd WMA). This species likely occurs throughout the state, although no records exist from Bay, Holmes, Santa Rosa, and Washington counties.

Earliest Known Voucher: 1875 (USNM 9953).

**Taxonomy:** Formerly *Eumeces inexpectatus*, but Brandley et al. (2005) resurrected *Plestiodon* for North American *Eumeces* north of Mexico. This species is sometimes confused with *P. fasciatus* or *P. inexpectatus*, and some of the voucher specimens were misidentified.





Photographs of juvenile by Kenneth L. Krysko (top) and adult by Todd W. Pierson (bottom).

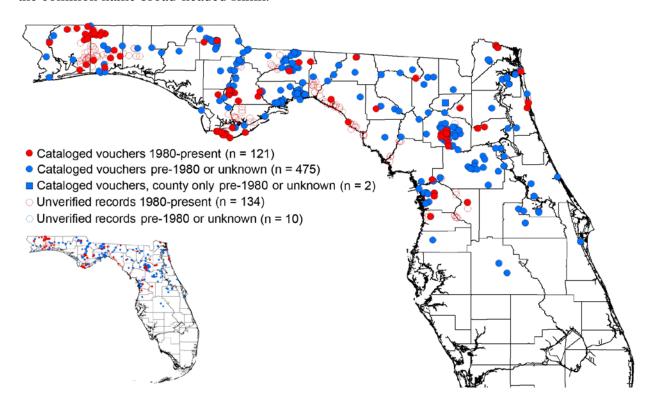
## Plestiodon laticeps (Schneider 1801)

### **Broadhead Skink**

**Geographic Distribution:** There are 598 vouchered records from 44 counties. This species occurs throughout the panhandle and as far south as Pasco, Polk, and Brevard counties in the peninsula. Within its apparent range, no records exist from Flagler and Suwannee counties.

Earliest Known Voucher: 1878 (USNM 11865–11866).

**Taxonomy:** Formerly *Eumeces laticeps*, but Brandley et al. (2005) resurrected *Plestiodon* for North American *Eumeces* north of Mexico. This species is sometimes confused with *P. fasciatus* or *P. inexpectatus*, and some of the voucher specimens were misidentified. Crother (2008) used the common name broad-headed skink.





Photographs of juvenile (top) and male (bottom) by Pierson Hill.

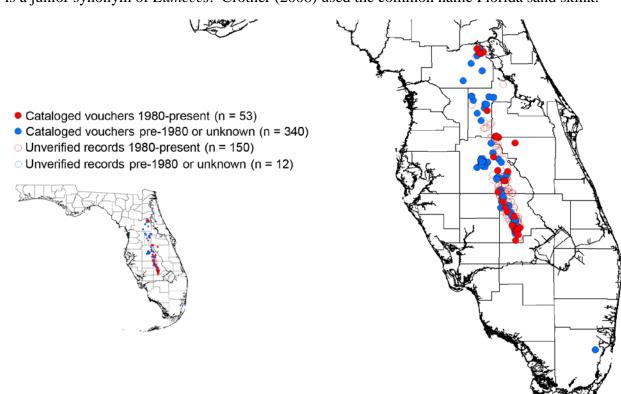
## Plestiodon reynoldsi Stejneger 1910

#### **Sand Skink**

Geographic Distribution: There are 393 vouchers from Highlands, Lake, Marion, Miami-Dade, Orange, Osceola, and Polk counties. Carr (1940) reported *Plestiodon reynoldsi* from Alachua County based upon a museum record but later indicated to Telford (1959) that the locality was in error. Two specimens (USNM 85248, 85249) were collected in 1932 during transplantation of shrubbery at the Downey Estate near Buena Vista, Miami-Dade County, but these were most likely introduced (Telford 1959).

Earliest Known Voucher: 1910 (USNM 42147).

**Taxonomy:** Formerly *Neoseps reynoldsi*, a monotypic genus, but Brandley et al. (2005) resurrected *Plestiodon* for North American *Eumeces* north of Mexico and suggested that *Neoseps* is a junior synonym of *Eumeces*. Crother (2008) used the common name Florida sand skink.





Photographs by Pierson Hill (top) and Kevin M. Enge (bottom).

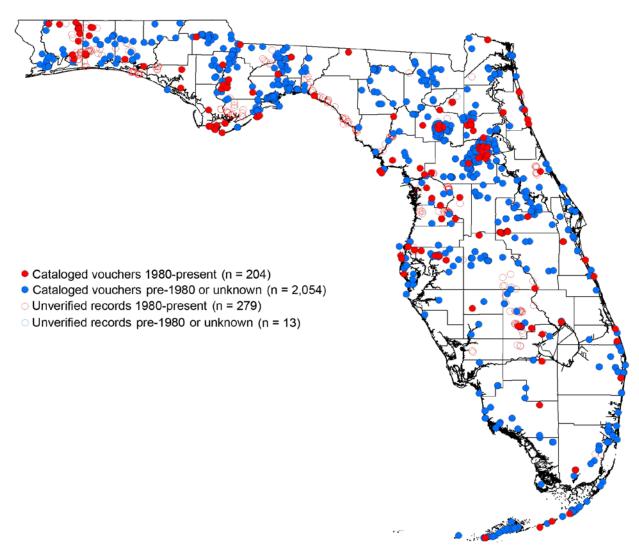
### Scincella lateralis (Say in James 1823)

### **Ground Skink**

**Geographic Distribution:** There are 2,258 vouchered records from 63 counties and additional unverified records from Charlotte (FWC survey of Fred C. Babcock-Cecil M. Webb WMA) and Washington (Kovatch and Smolinski 2004) counties. This species likely occurs throughout the state, but no records exist from Flagler and St. Lucie counties.

Earliest Known Voucher: 1879 (USNM 11864).

**Taxonomy:** Crother (2008) used the common name little brown skink.





Photographs by Pierson Hill (top) and Todd W. Pierson (bottom).

# Trachylepis quinquetaeniata (Lichtenstein 1823)

# **African Five-lined Skink (Non-native)**

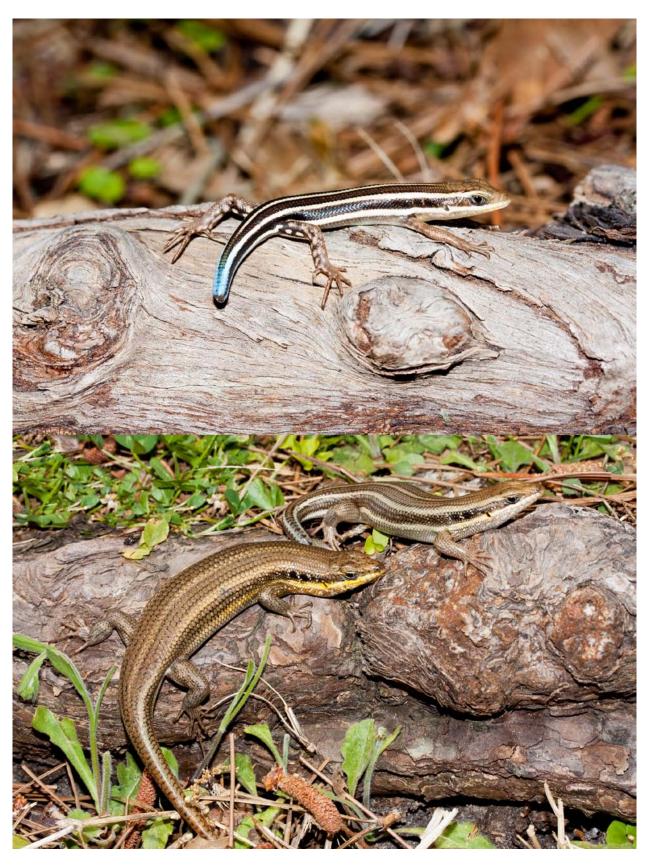
**Geographic Distribution:** There are 12 vouchered records of this non-native species from St. Lucie County. This species was first found in 2005 in Port St. Lucie (Krysko et al. 2010a) and is native to Africa from Kenya west through the sub-Saharan belt to Senegal.

Earliest Known Voucher: 2010 (UF 157446).

• Cataloged vouchers 1980-present (n = 12)







Photographs of juvenile (top) and adult male and female (bottom) by Kenneth L. Krysko.

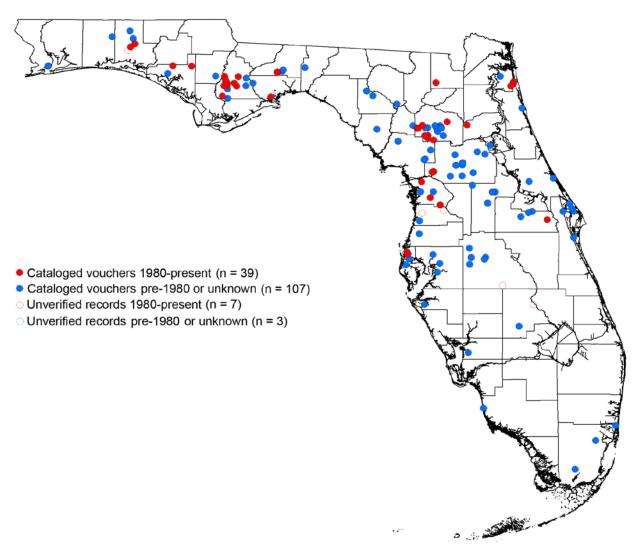
#### **FAMILY ANGUIDAE**

# Ophisaurus attenuatus longicaudus McConkey 1952

### **Eastern Slender Glass Lizard**

Geographic Distribution: There are 146 vouchered records from 35 counties. Records are especially sparse in the southern half of the peninsula. Within its apparent range, no records exist from Bradford, Clay, Columbia, Flagler, Franklin, Gadsden, Gulf, Hamilton, Holmes, Jackson, Madison, Nassau, Santa Rosa, Sarasota, Seminole, Sumter, Taylor, Union, and Washington counties.

Earliest Known Voucher: 1879 (USNM 10336).





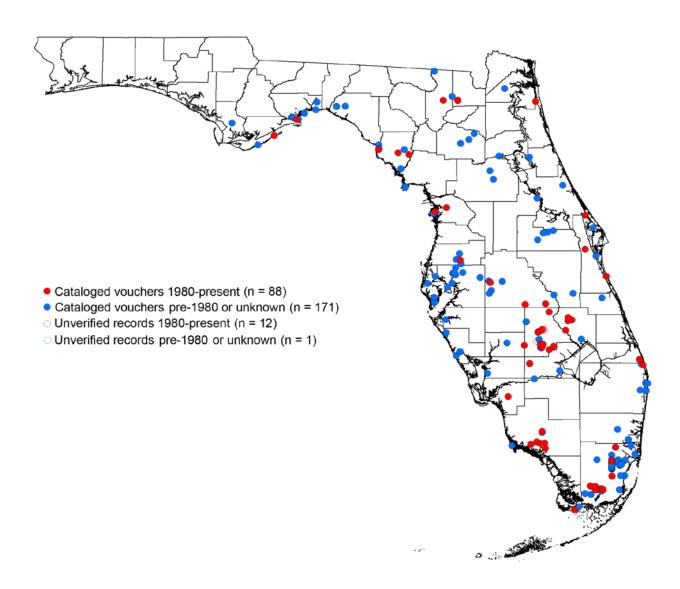
Photographs by Kevin M. Enge (top) and Dirk J. Stevenson (bottom).

### Ophisaurus compressus Cope 1900

## **Island Glass Lizard**

**Geographic Distribution:** There are 259 vouchered records from 40 counties. This species likely occurs throughout the peninsula east and south of the Suwannee River, whereas west of the Suwannee River, it occurs only near the coast as far west as Gulf County, although the voucher (UF 8571) from Gulf County could not be found. Within its apparent range, no records exist from Bradford, Clay, Gilchrist, Hamilton, Hardee, Hernando, Jefferson, Lafayette, Nassau, St. Lucie, Seminole, Sumter, Suwannee, and Union counties.

Earliest Known Voucher: 1896 (ANSP 21525).





Photographs by Kevin M. Enge.

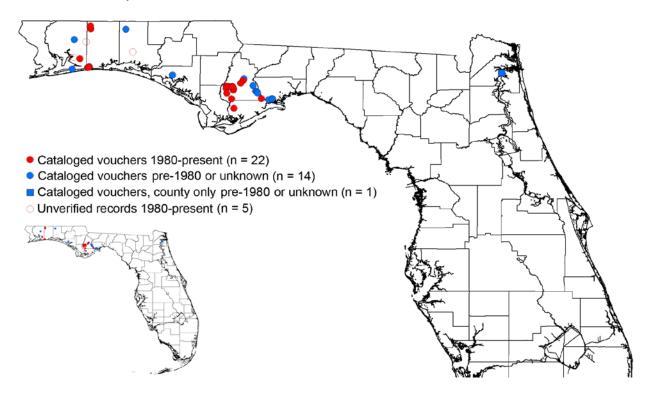
## Ophisaurus mimicus Palmer 1987

#### **Mimic Glass Lizard**

**Geographic Distribution:** There are 37 vouchered records from 8 counties. This species is found mostly in the panhandle from near the Ochlockonee River westward. There is a single voucher (UF 49992) in the peninsula from Duval County. Within its apparent range, no records exist from Calhoun, Escambia, Gulf, Holmes, Jackson, and Washington counties.

Earliest Known Voucher: 1966 (UMMZ 127076).

**Taxonomy:** Very small juveniles resemble *Ophisaurus compressus*, and larger individuals resemble small *O. attentuatus* (Palmer 1987). This species can be differentiated from *O. attenuatus* by having 86–94 longitudinal rows above the lateral fold and 100–108 middorsal scales on the body (Palmer 1987).





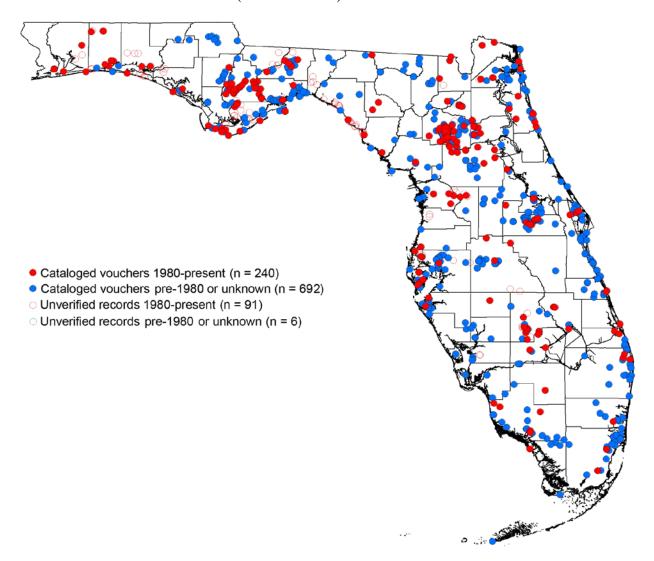
Photographs by Barry Mansell (top) and Kevin M. Enge (bottom).

# Ophisaurus ventralis (Linnaeus 1766)

### **Eastern Glass Lizard**

**Geographic Distribution:** There are 9,332 vouchered records from 64 counties and additional unverified records from Hernando County (Enge and Wood 1999–2000). This species likely occurs throughout the state, but no records exist from St. Lucie and Suwannee counties.

Earliest Known Voucher: 1856 (MSU SH.2213).





Photographs by John B. Jensen (top) and Kevin M. Enge (bottom).

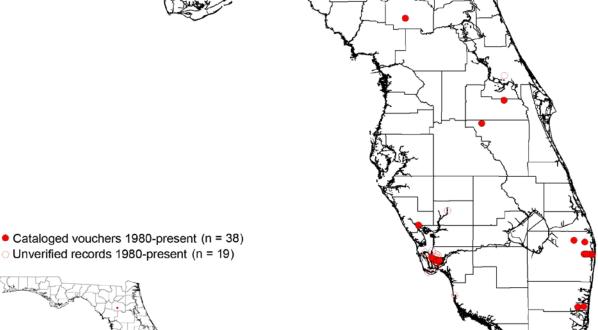
#### FAMILY VARANIDAE

### Varanus niloticus (Linnaeus 1766)

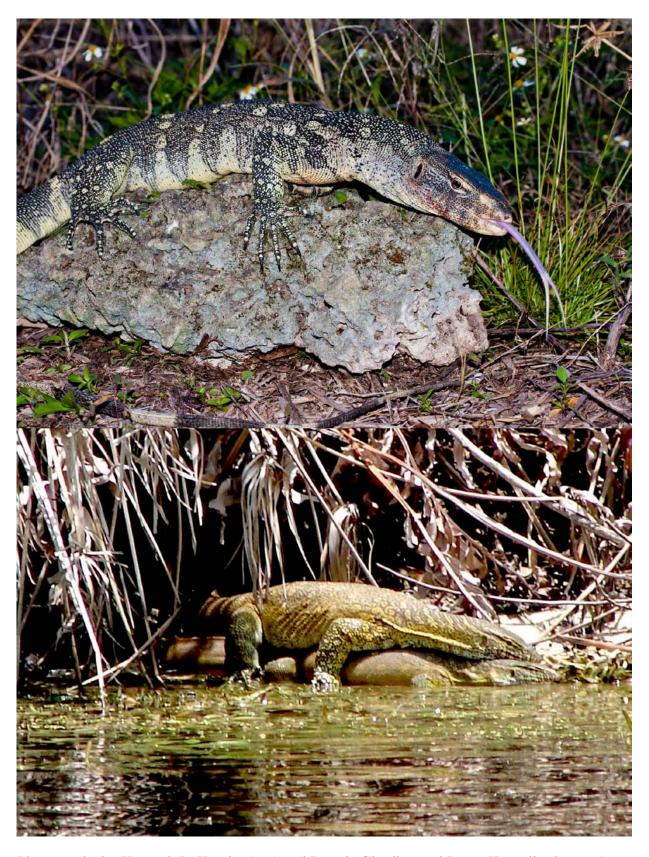
## **Nile Monitor (Non-native)**

Geographic Distribution: There are 38 vouchered records of this non-native species from 9 counties, and unverified records from an additional 3 counties. A population occurs in the Cape Coral area, Lee County (Enge et al. 2004a, Campbell 2005). Populations also occur in southeastern Florida in Palm Beach, Broward, and Miami-Dade counties (Giardina 2010). According to FWC's Exotic Species Database, there are unverified records from Collier (near Haldeman Creek, Naples), DeSoto (along the Peace River near Fort Ogden, Arcadia, and Brownville) and Volusia (Lake Lapanocea, Deltona) counties. This species is native to most of sub-Saharan Africa, except for desert regions, although its range extends northward through central Sudan and into Egypt along the Nile River.

Earliest Known Voucher: 2002 (UF 133933).







Photographs by Kenneth L. Krysko (top) and Dennis Giardina and Jenny Ketterlin (bottom).

#### SUBORDER SERPENTES

#### FAMILY ACROCHORDIDAE

## Acrochordus javanicus Hornstedt 1787

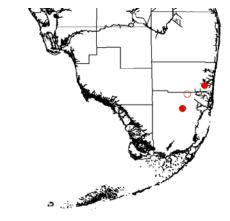
#### **Javan File Snake (Non-native)**

Geographic Distribution: There are 5 vouchered records of this non-native species from Broward and Miami-Dade counties. A population has apparently persisted since the 1970s in a rockpit in northwestern Miami, Miami-Dade County (Krysko et al. 2011). There are 10 unverified records but no vouchers from this established population, but 1 voucher was taken from outside a reptile dealer's facility in Hollywood, Broward County, and 2 vouchers purportedly came from the Tamiami Canal, Miami-Dade County (Krysko et al. 2011). This species is native to coastal areas from Thailand, Vietnam, Cambodia, and through Malaysia and the Greater Sunda Islands of Indonesia.

**Earliest Recorded Voucher**: 2002 (UF 151593–151594).

Cataloged vouchers 1980-present (n = 5)
 Unverified records 1980-present (n = 10)







Photographs of juveniles by Christopher R. Gillette.

#### **FAMILY BOIDAE**

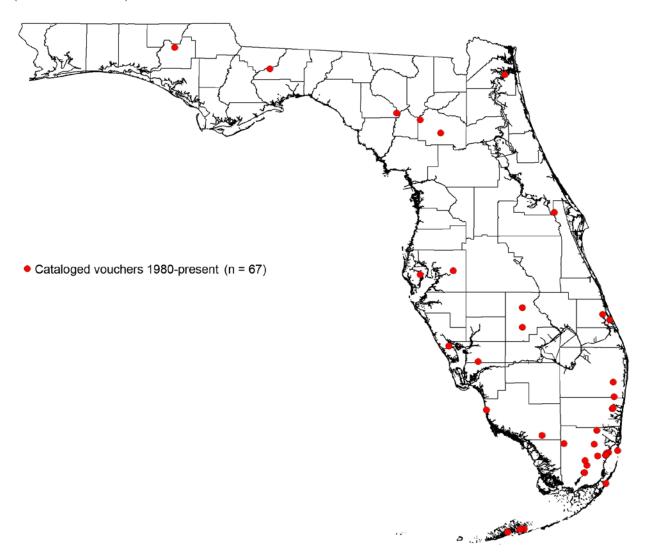
#### Boa constrictor Linnaeus 1758

### **Boa Constrictor (Non-native)**

**Geographic Distribution**: There are 67 vouchered records of this non-native species from 17 counties, but records north of Collier and Miami-Dade counties likely do not represent established populations. The only known reproducing population is at the Charles Deering Estate at Cutler in Miami (Snow et al. 2007). The native range of this species extends from Mexico to Peru, Bolivia, and Argentina, and includes several Caribbean islands.

Earliest Recorded Voucher: 1981 (ABS 836).

**Taxonomy:** The established population in Miami is apparently *Boa constrictor constrictor* (Snow et al. 2007).





Photographs by Kevin M. Enge.

#### **FAMILY PYTHONIDAE**

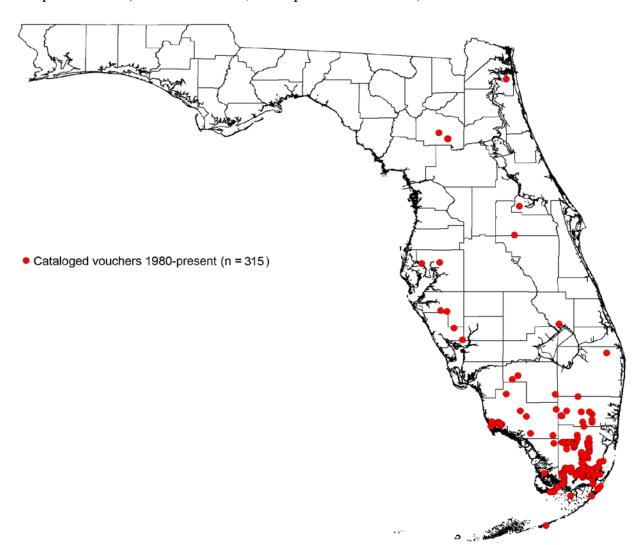
### Python bivittatus Kuhl 1820

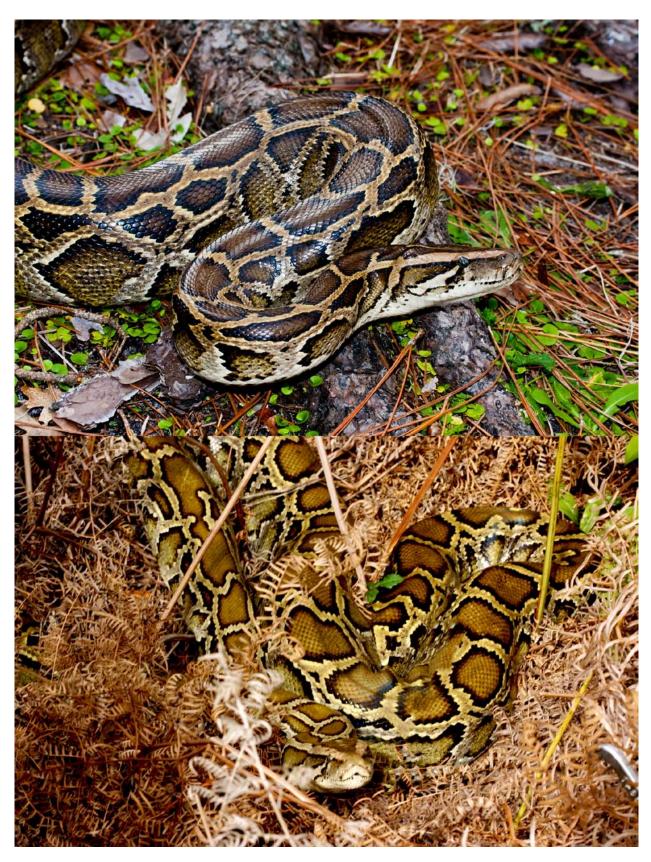
### **Burmese Python (Non-native)**

Geographic Distribution: There are 315 vouchered records of this non-native species from 12 counties. It is established in Broward, Collier, Hendry, Miami-Dade, Monroe, and Palm Beach counties (Snow et al. 2007, Harvey et al. 2008, Andreadis 2011). The main portion of the native range of this species extends from southern China south and west through Vietnam, Cambodia, Thailand, and Laos to Myanmar, Bangladesh, and eastern India (Barker and Barker 2008).

Earliest Recorded Voucher: 1995 (UF 146714).

**Taxonomy:** Formerly considered the subspecies *Python molurus bivittatus* but now elevated to full species status (Jacobs et al. 2009, Schleip and O'Shea 2010).





Photographs by Kenneth L. Krysko (top) and Kevin M. Enge (bottom).

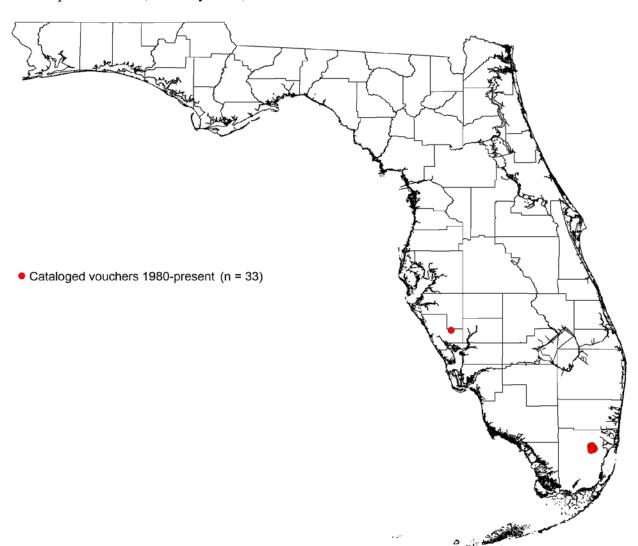
# Python sebae (Gmelin 1789)

# **Northern African Python (Non-native)**

Geographic Distribution: There are 33 vouchered records of this non-native species from Miami-Dade and Sarasota counties. The Miami-Dade County vouchers represent an established population (Reed et al. 2010). This species is native to sub-Saharan Africa, ranging from the coasts of Kenya and Tanzania across much of central Africa to Mali and Mauritania, and north to Ethiopia and Eritrea (Reed and Rodda 2009), with the southern African python (*Python natalensis* Smith 1840) occurring farther south.

Earliest Recorded Voucher: 2005 (UF 153699).

**Taxonomy:** The former subspecies *Python sebae sebae* and *P. s. natalensis* have been elevated to full species status (Broadley 1999).





Photographs by Lori Oberhofer (top) and Catherine A. Smith (bottom).

#### FAMILY COLUBRIDAE

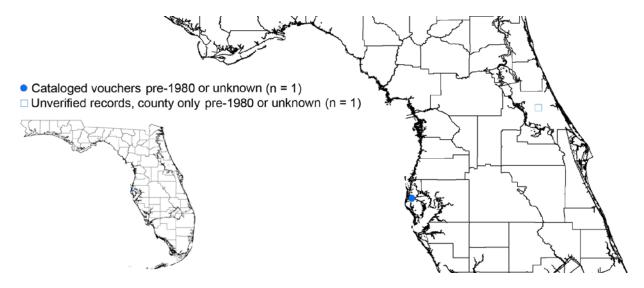
### Carphophis amoenus (Say 1825)

#### **Eastern Worm Snake**

**Geographic Distribution**: There is 1 vouchered record from Pinellas County and an additional unverified record from Volusia County. This species is not currently considered part of Florida's herpetofauna. The voucher from Clearwater, Pinellas County, was collected in 1879, and Carr (1940) reported this species from Volusia County, but Neill (1954) believed that the 2 Florida records were erroneous. In the Pleistocene, *Carphophis* occurred in Sumter County, and Ernst et al. (2003) suggested that a relictual population may have existed in Florida in the 19<sup>th</sup> century but is now extirpated. In Alabama, this species almost reaches the border of Santa Rosa County, Florida (Mount 1975).

Earliest Recorded Voucher: 1879 (USNM 10750).

**Taxonomy:** The subspecific affinity of the Florida specimens is unknown. Crother (2008) used the common name eastern wormsnake.





Photographs by Dirk J. Stevenson (top) and Todd W. Pierson (bottom).

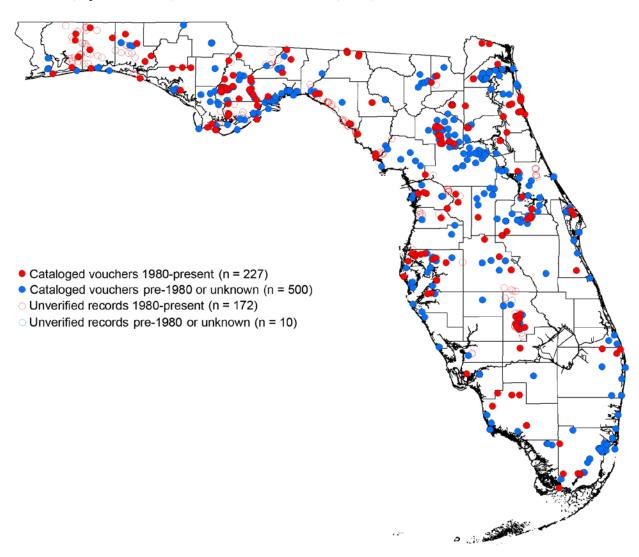
### Cemophora coccinea (Blumenbach 1788)

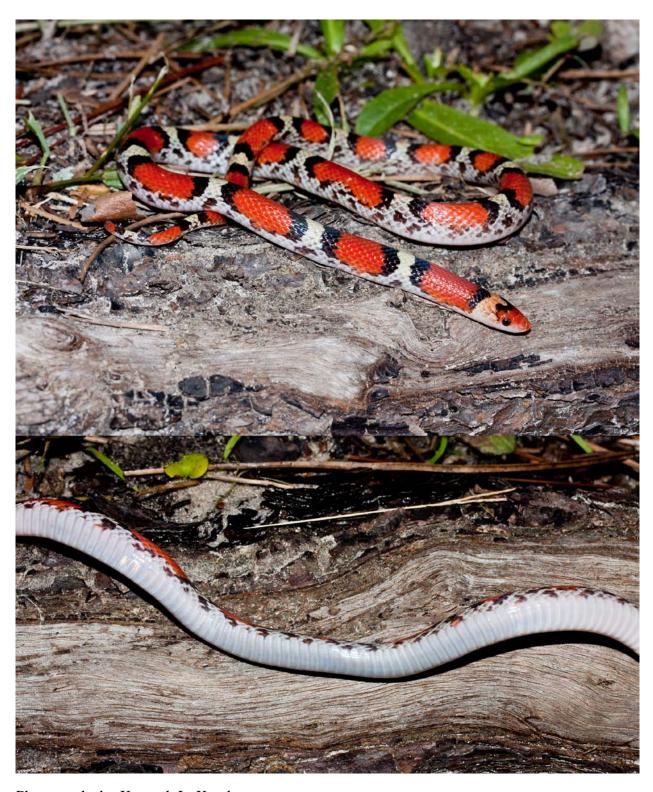
#### **Scarlet Snake**

**Geographic Distribution**: There are 727 vouchered records from 59 counties. This species occurs throughout the state, although there are no records from DeSoto, Flagler, Gilchrist, Hamilton, Holmes, Okeechobee, St. Lucie, and Union counties.

Earliest Recorded Voucher: 1878 (USNM 9688).

**Taxonomy:** Two subspecies occur in Florida: Florida (*coccinea* [Blumenbach 1788]) and northern (*copei* Jan 1863) scarlet snakes. Crother (2008) used the common name scarletsnake.





Photographs by Kenneth L. Krysko.

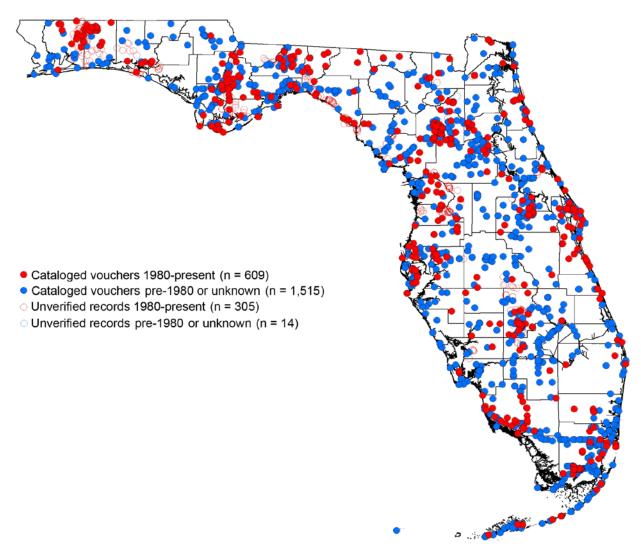
### Coluber constrictor Linnaeus 1758

#### **Black or Eastern Racer**

**Geographic Distribution**: There are 2,124 vouchered records from all 67 counties. This species occurs throughout the state.

Earliest Recorded Voucher: 1869 (YPM 131).

**Taxonomy:** Three subspecies occur in Florida: brownchin (*helvigularis* Auffenberg 1955), Everglades (*paludicola* Auffenberg and Babbitt 1953), and southern black (*priapus* Dunn and Wood 1939) racers. Crother (2008) used the common name North American racer.





Photographs of hatchlings by Kenneth L. Krysko (top) and adult *priapus* by Kelly Jones (bottom).

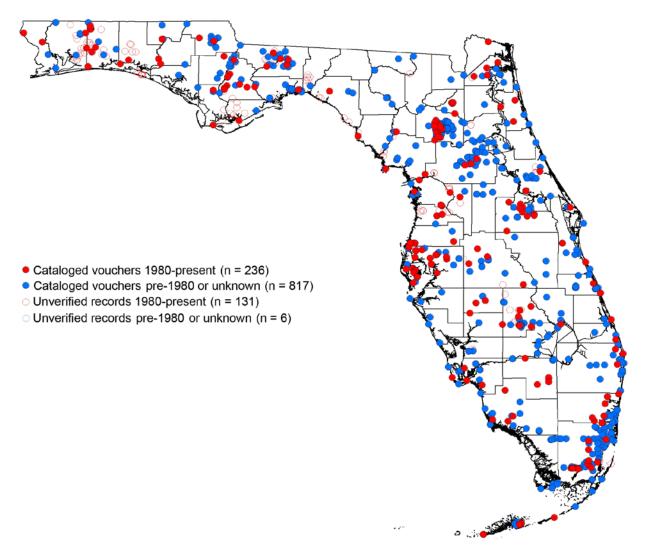
# Diadophis punctatus (Linnaeus 1766)

# Ringneck Snake

**Geographic Distribution**: There are 1,053 vouchered records from 65 counties. This species occurs throughout the state, although there are no records from St. Lucie and Union counties.

Earliest Recorded Voucher: 1879 (USNM 10585).

**Taxonomy**: Two subspecies occur in Florida: Key (*acricus* Paulson 1966), which is restricted to the Lower Keys, and southern (*punctatus* [Linnaeus 1766]) ringneck snakes. Crother (2008) used the common name ring-necked snake.





Photographs of punctatus (top) and acricus (bottom) by Kevin M. Enge.

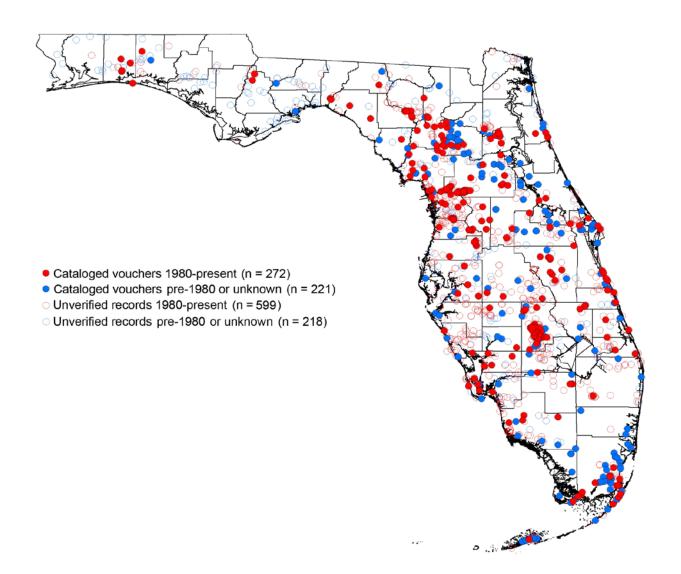
# Drymarchon couperi (Holbrook 1842)

#### **Eastern Indigo Snake**

Geographic Distribution: There are 493 vouchered records from 51 counties and unverified records from 15 additional counties. Most of the unverified records are from FNAI, which includes many pre-1980 records compiled by Moler (1985b). This species probably once occurred throughout the state, although no record exists from Union County. There are relatively few records from the panhandle, and the last vouchered specimen was collected in 1999 on Eglin Air Force Base, Okaloosa County (UF 151471; Gunzburger and Aresco 2007). Collection of voucher specimens was restricted after the species was listed as federally threatened in 1978; many of the recent records represent photographic vouchers or shed skins.

Earliest Recorded Voucher: 1879 (USNM 10379).

**Taxonomy:** Formerly the subspecies *Drymarchon corais couperi*, but Collins (1991) elevated it to full species status based upon allopatry and diagnosability, and Wüster et al. (2001) used morphology to support its specific status. Recent genetic analyses illustrate that *D. couperi* includes 2 distinct genetic lineages, Atlantic and Gulf clades (Krysko et al. 2010b), which can be viewed as cryptic species.





Photographs of juvenile (top) and adult (bottom) by Kenneth L. Krysko.

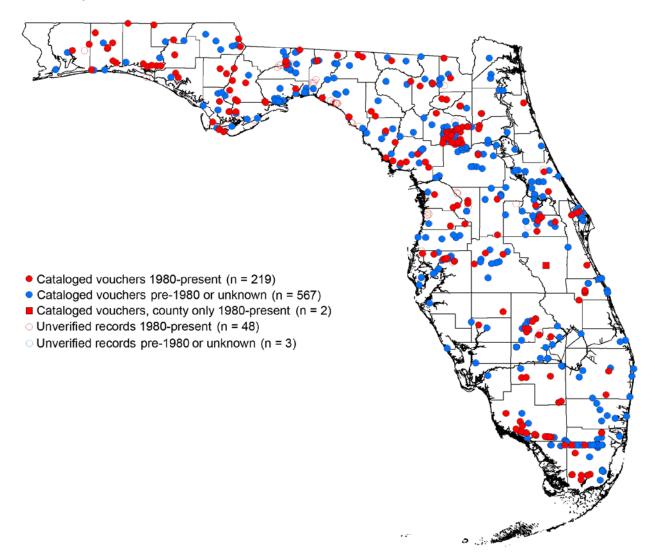
# Farancia abacura (Holbrook 1836)

#### **Eastern Mud Snake**

**Geographic Distribution**: There are 788 vouchered records from 66 counties. This species occurs throughout the state, although no record exists from St. Lucie County.

Earliest Recorded Voucher: 1880 (USNM 10455).

**Taxonomy:** Crother (2008) used the common name red-bellied mudsnake.





Photographs of juvenile by Christopher R. Gillette (top) and adult by Kenneth L. Krysko (bottom).

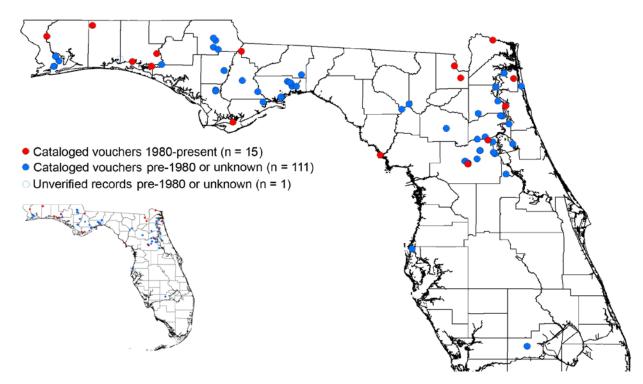
#### Farancia erytrogramma (Palisot de Beauvois in Sonnini and Latreille 1801)

#### **Rainbow Snake**

Geographic Distribution: There are 126 vouchered records from 27 counties. This species occurs in the panhandle and northern peninsula as far south as Marion and northern Lake counties. One 1952 voucher specimen exists from Fisheating Creek, Glades County (UF 19416), although Neill (1964) examined 3 specimens from there when describing the subspecies *Farancia erytrogramma seminola*. The voucher (unknown year) from Tarpon Springs, Pinellas County (UAZ 28838), may have been purchased from the Tarpon Zoo, an animal dealer that was located there. Within its apparent range, no records exist from Bay, Bradford, Flagler, Hamilton, Holmes, Jefferson, Lafayette, Levy, Madison, Pasco, Suwannee, Taylor, Union, and Volusia counties.

Earliest Recorded Voucher: 1878 (USNM 9584).

**Taxonomy:** Two subspecies occur in Florida: common (*erytrogramma* [Palisot de Beauvois *in* Sonnini and Latreille 1801]) and southern Florida (*seminola* Neill 1964) rainbow snakes.





Photographs of hatchling by Joseph P. Burgess (top) and adult by Dirk J. Stevenson (bottom).

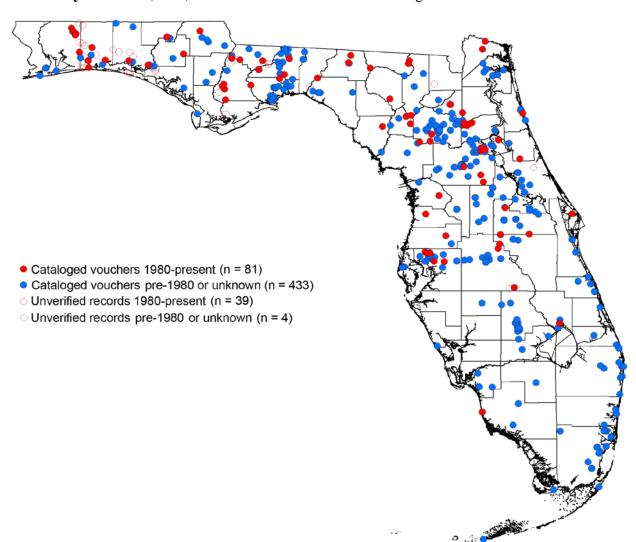
#### Heterodon platirhinos Latreille 1801

#### **Eastern Hognose Snake**

Geographic Distribution: There are 514 vouchered records from 61 counties and unverified records from 2 additional counties. The unverified records came from FWC surveys in Baker (Olustee Battlefield Historic State Park) and Franklin (Apalachicola River Wildlife and Environmental Area) counties. This species probably occurs throughout the state, although no records exist from Charlotte, DeSoto, Lafayette, and Manatee counties. The paucity of records from southern Florida since 1980 might indicate declining or extirpated populations.

Earliest Recorded Voucher: 1857 (USNM 1168).

**Taxonomy:** Crother (2008) used the common name eastern hog-nosed snake.





Photographs of juveniles by Dirk J. Stevenson (top left, center right) and adults by Kevin M. Enge (top right) and Kenneth L. Krysko (center left, bottom left & right).

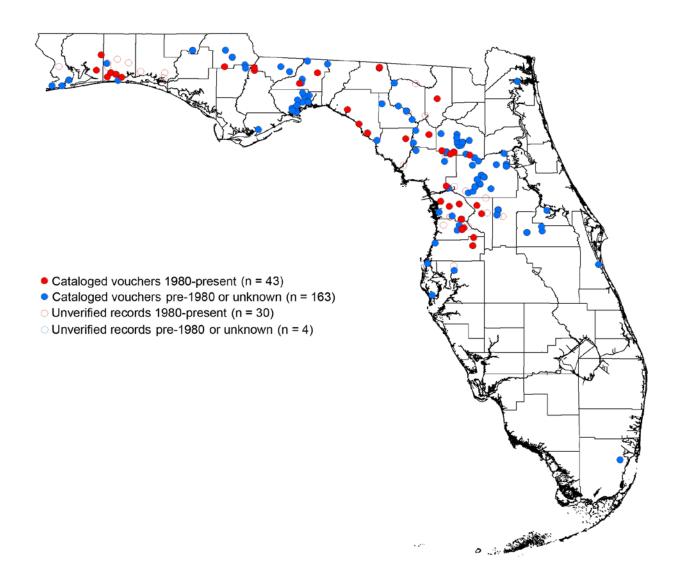
#### Heterodon simus (Linnaeus 1766)

#### **Southern Hognose Snake**

Geographic Distribution: There are 206 vouchered records from 35 counties and additional unverified FNAI records from Eglin Air Force Base and Nokuse Plantation in Walton County. This species occurs in the panhandle and northern half of the peninsula as far south as Pinellas, Hillsborough, Lake, Orange, and Brevard counties. The record (AMNH 6920) from Eau Gallie, Brevard County, is the only one east of the St. Johns River. This species has not been found elsewhere on the Atlantic Coastal Ridge, so its presence in Brevard County should be considered questionable. Within its anticipated range (assuming it does not occur east of the St. Johns River), records do not exist from Baker, Bay, Clay, Gulf, Hamilton, Nassau, Putnam, Union, and Washington counties. The species has apparently exhibited population declines (Tuberville et al. 2000), but it is still locally common on portions of the Brooksville Ridge (Enge and Wood 2003).

Earliest Recorded Voucher: 1880 (USNM 10447, 10691).

**Taxonomy:** Crother (2008) used the common name southern hog-nosed snake.





Photographs of juveniles by Kevin Stohlgren (top left) and Marisa Ishimatsu (top right), and adults by Kelly Jones (center left, bottom right) and Kevin M. Enge (center right, bottom left).

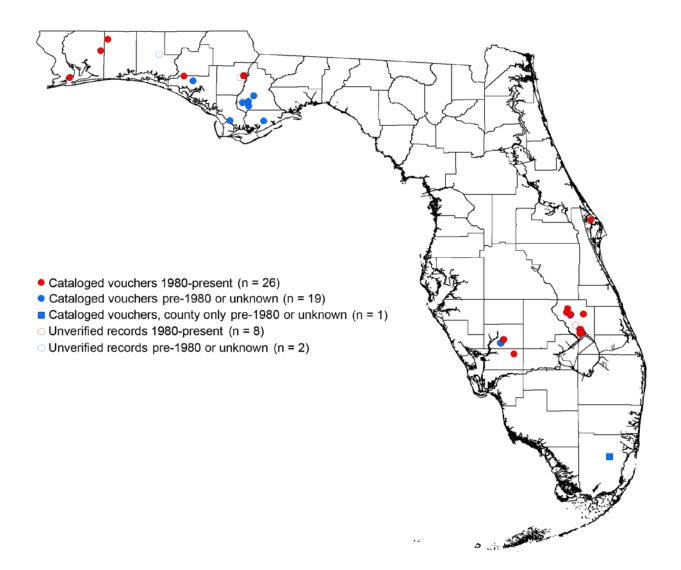
# Lampropeltis calligaster (Harlan 1827)

#### Prairie Kingsnake

Geographic Distribution: There are 45 vouchered records from 13 counties and additional unverified records from Walton County (Neill 1954). The subspecies *Lampropeltis calligaster rhombomaculata* occurs in the panhandle east to Liberty and Franklin counties, whereas *L. c. occipitolineata* occurs in southern central Florida (Layne et al. 1986, Price 1987). The latter subspecies has been documented from Charlotte, DeSoto, and Okeechobee counties, and a collector reported catching 2 specimens in 1992 in Glades County (E. Ingram, personal communication), which is not shown on the map. A voucher was collected in 1980 from Merritt Island National Wildlife Refuge, Brevard County (UF 48182). Carr (1940) reported a voucher specimen (UMMZ 77481) from Leesburg, Lake County, that is actually a *Pantherophis guttatus*, but we could not find a specimen (CM 1952) collected in 1899 from "St. Johns River." The 1968 record from Miami-Dade County (AUM 10605) should be considered dubious and might represent an escapee. Within its anticipated range, records do not exist from Glades, Hardee, Indian River, Osceola, and Washington counties.

Earliest Recorded Voucher: 1946 (UF 2200).

**Taxonomy:** Two subspecies occur in Florida: mole (*rhombomaculata* [Holbrook 1840]) and southern Florida mole (*occipitolineata* Price 1987) kingsnakes. Crother (2008) used the common name yellow-bellied kingsnake.





Photographs of *rhombomaculata* by Kevin M. Enge (top) and *occipitolineata* by Kenneth L. Krysko (bottom).

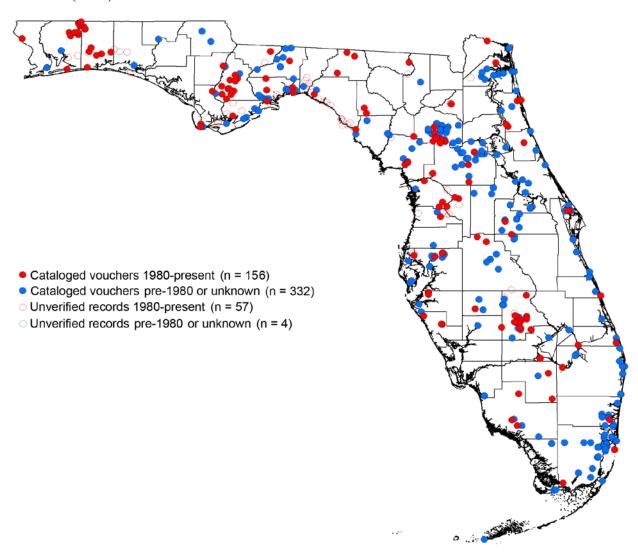
# Lampropeltis elapsoides (Holbrook 1838)

# Scarlet Kingsnake

**Geographic Distribution**: There are 488 vouchered records from 60 counties. This species occurs throughout most of the state, although records do not exist from Baker, Bay, Charlotte, Clay, Suwannee, Union, and Washington counties.

Earliest Recorded Voucher: 1878 (USNM 9689).

**Taxonomy:** Formerly the subspecies *Lampropeltis triangulum elapsoides*, but recent molecular data suggest recognition at the species level (Armstrong et al. 2001, Harper 2006, Pyron and Burbrink (2009).





Photographs of hatchlings by Kenneth L. Krysko (top left & right), adults by Christopher R. Gillete (center left) and Kevin M. Enge (center right, bottom left), and venter by Kenneth L. Krysko (bottom right).

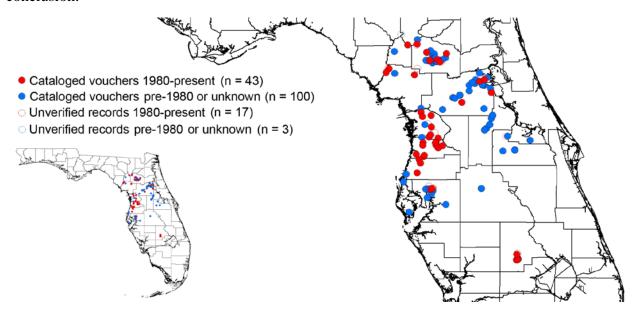
# Lampropeltis extenuata (Brown 1890)

#### **Short-tailed Snake**

**Geographic Distribution**: There are 143 vouchered records from 15 counties and an additional unverified FNAI record from Suwannee County (Ichetucknee Springs State Park). This species is endemic to peninsular Florida, occurring from southern Columbia and Suwannee counties south to Highlands County and west to the Gulf of Mexico from Citrus to Pinellas counties. Within its apparent range, records do not exist from Dixie and Osceola counties.

Earliest Recorded Voucher: 1892 (USNM 21327).

**Taxonomy:** This species was formerly *Stilosoma extenuatum*, a monotypic genus. Highton (1956) described 3 subspecies that are no longer recognized (Highton 1976). Dowling and Maxson (1990) found *Stilosoma* to fall within kingsnakes (*Lampropeltis*) based on immunological distance data; later, Keogh (1996) used morphological data and J. W. Fetzner, Jr. (unpublished data) and Pyron and Burbrink (2009) used mitochondrial DNA to reach the same conclusion.





Photographs by Kevin M. Enge (top) and Kenneth L. Krysko (bottom).

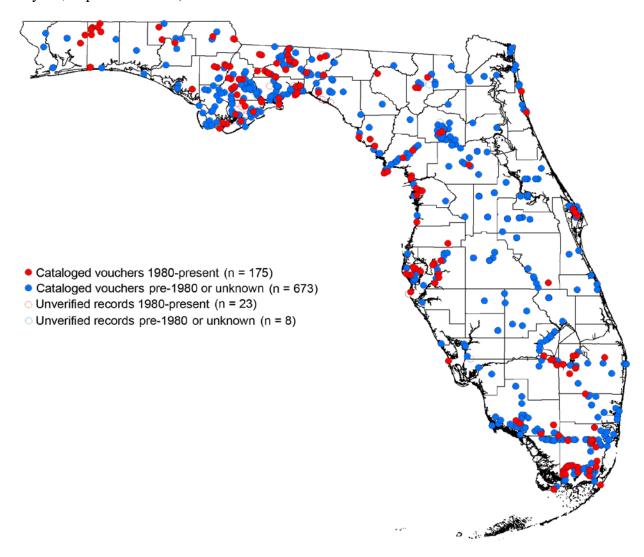
# Lampropeltis getula complex (Linnaeus 1766)

#### **Common Kingsnake**

Geographic Distribution: There are 848 vouchered records from 62 counties. This species occurs throughout the state, although records do not exist from Clay, Flagler, Martin, St. Lucie, and Union counties. Kingsnake populations in various parts of the state have apparently experienced declines (Krysko and Smith 2005, Stapleton et al. 2008), and the map suggests that peninsular populations have declined in the interior, except south of Lake Okeechobee.

Earliest Recorded Voucher: 1880 (USNM 10445).

**Taxonomy:** Three subspecies occur in Florida: Florida (*floridana* Blanchard 1919), eastern (*getula* [Linnaeus 1766]), and Eastern Apalachicola Lowlands (*meansi* Krysko and Judd 2006) kingsnakes. Based on both mitochondrial DNA sequence and morphological data, all 3 subspecies may be elevated to species status (Krysko 2001; Krysko and Judd 2006; K. L. Krysko, unpublished data).





Photographs of *meansi* by Kenneth L. Krysko (top left & right), *getula* by Kevin M. Enge (center left), hatchling *floridana* by Kevin M. Enge (center right), and adult *floridana* by Kenneth L. Krysko (bottom left & right).

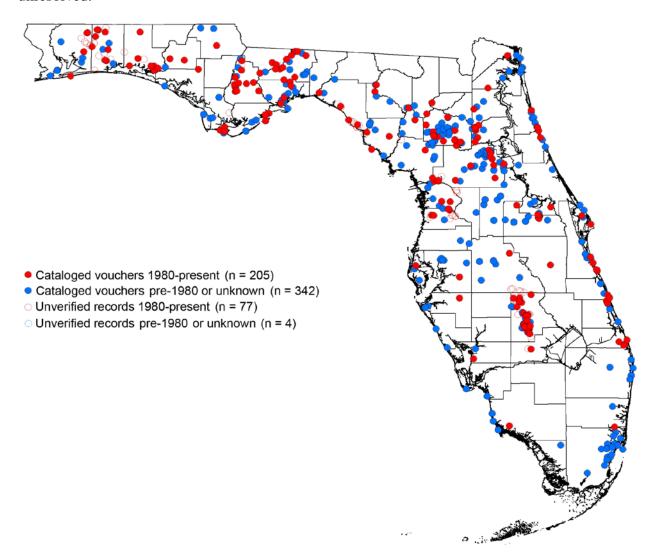
#### Masticophis flagellum Shaw 1802

#### **Eastern Coachwhip**

**Geographic Distribution**: There are 547 vouchered records from 58 counties. This species probably occurs throughout the state, although records do not exist from Baker, Calhoun, DeSoto, Hamilton, Hardee, Hendry, Holmes, Okeechobee, and Union counties. The species may not occur in the poorly drained area south of Lake Okeechobee.

Earliest Recorded Voucher: 1853 (USNM 4402).

**Taxonomy:** Utiger et al. (2005) synonymized *Masticophis* with *Coluber*, and Crother (2008) used the name *Coluber flagellum* while recognizing that the status of *Masticophis* is still unresolved.





Photographs of juvenile by Kevin M. Enge (top) and adult by Christopher R. Gillette (bottom).

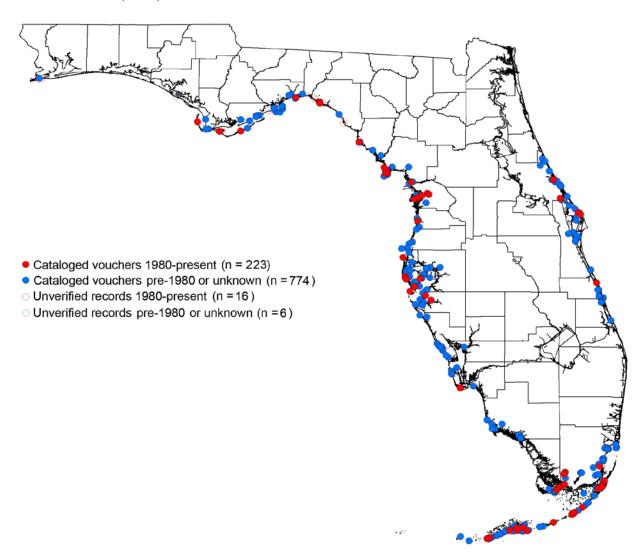
#### Nerodia clarkii (Baird and Girard 1853)

#### Salt Marsh Water Snake

**Geographic Distribution**: There are 997 vouchered records from 25 counties and an additional unverified FNAI record from Bay County. This species occurs along the Atlantic Coast south of Flagler County (there is no record from Martin County) and along the Gulf Coast, although records are lacking in the panhandle between Gulf and Escambia counties.

Earliest Recorded Voucher: 1879 (USNM 10681).

**Taxonomy:** Three subspecies occur in Florida: Gulf (*clarkii* [Baird and Girard 1853]), mangrove (*compressicauda* Kennicott 1860), and Atlantic (*taeniata* [Cope 1895]) salt marsh snakes. Crother (2008) used the common name saltmarsh watersnake.





Photographs of *clarkii* by Kevin M. Enge (top left), *taeniata* by Pierson Hill (top right), *compressicauda* by Moses Michelsohn (center left & right, bottom left), and venter of *clarkii* by Kenneth L. Krysko (bottom right).

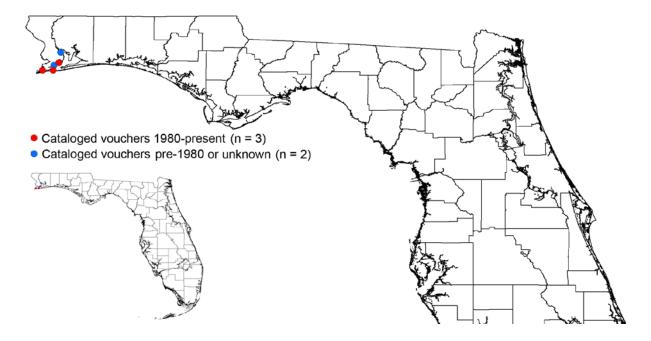
# Nerodia cyclopion (Duméril, Bibron, and Duméril 1854)

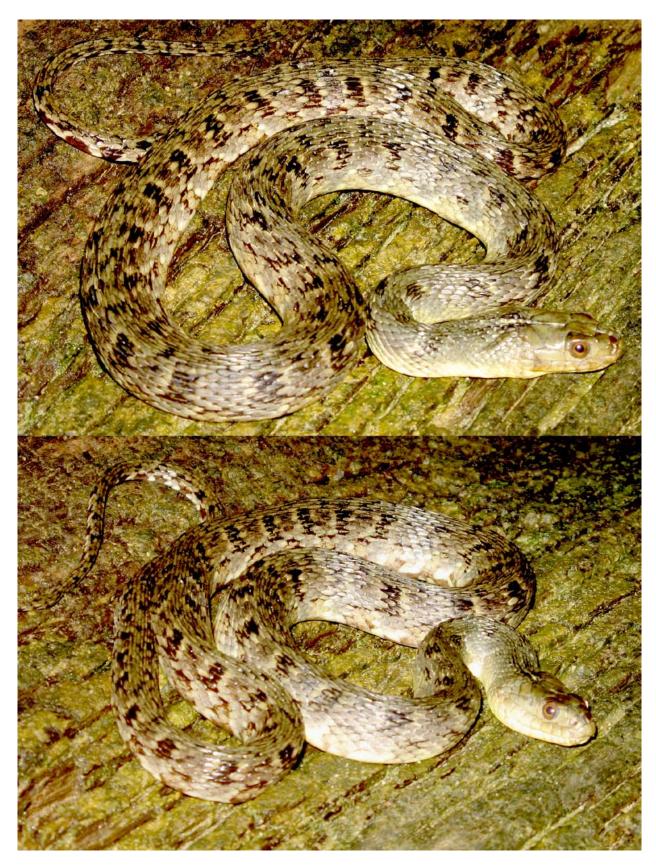
# Mississippi Green Water Snake

Geographic Distribution: There are 5 vouchered records from southern Escambia County.

Earliest Recorded Voucher: 1947 (FNMH 48891).

**Taxonomy:** Crother (2008) used the common name Mississippi green watersnake.





Photographs by John G. Himes.

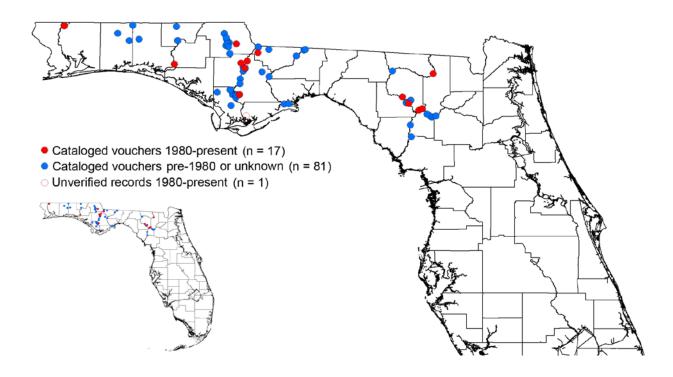
# Nerodia erythrogaster (Forster 1771)

#### **Plainbelly Water Snake**

Geographic Distribution: There are 98 vouchered records from 20 counties and an additional unverified record from Franklin County that came from an FWC survey of Apalachicola River Wildlife and Environmental Area. This species occurs in the panhandle and in the vicinity of the Suwannee and Santa Fe rivers in the northern peninsula. An apparent distributional gap exists between the Ochlockonee and Suwannee rivers. Within its apparent range, records do not exist from Bay, Dixie, Madison, and Union counties.

Earliest Recorded Voucher: 1938 (UF 1919).

**Taxonomy:** Two subspecies occur in Florida: redbelly (*erythrogaster* [Forster 1771]) and yellowbelly (*flavigaster* [Conant 1949]) water snakes. Crother (2008) used the common name plain-bellied watersnake.





Photographs by Dirk J. Stevenson (top) and D. Bruce Means (bottom).

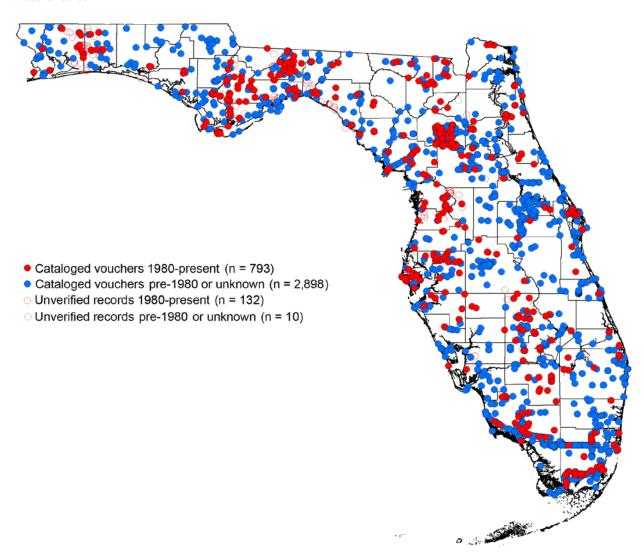
# Nerodia fasciata (Linnaeus 1766)

#### **Southern Water Snake**

**Geographic Distribution**: There are 3,691 vouchered records from 66 counties. This species occurs throughout the state except the Middle and Lower Keys, although no record exists from St. Lucie County.

Earliest Recorded Voucher: 1871 (USNM 31852).

**Taxonomy:** Two subspecies occur in Florida: banded (*fasciata* [Linnaeus 1766]) and Florida (*pictiventris* [Cope 1895]) water snakes. Crother (2008) used the common name southern watersnake.





Photographs of juvenile by Kenneth L. Krysko (top left) and adults by Dirk J. Stevenson (top right, bottom left), Aubrey M. Heupel (center left), Kenneth L. Krysko (center right), and Kevin M. Enge (bottom right).

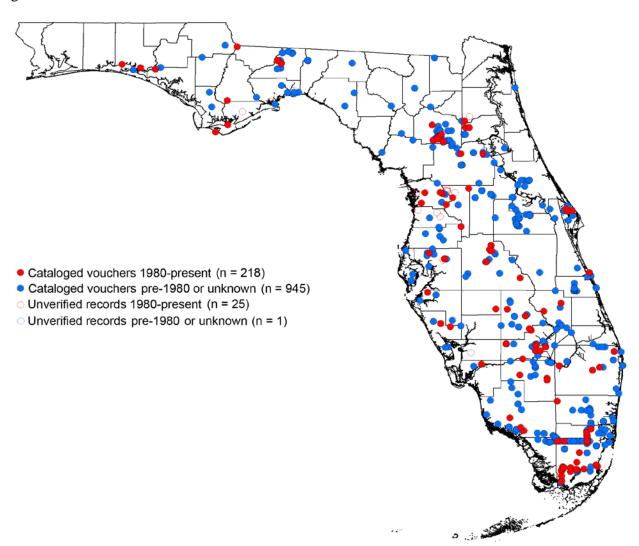
# Nerodia floridana (Goff 1936)

#### Florida Green Water Snake

**Geographic Distribution**: There are 1,163 vouchered records from 52 counties and an additional unverified record from Franklin County that came from an FWC survey of Tate's Hell State Forest. This species occurs throughout the state except apparently west of Choctawhatchee Bay in the panhandle. Within its apparent range, records do not exist from Bay, Calhoun, DeSoto, Dixie, Duval, Flagler, Gadsden, Holmes, Nassau, St. Lucie, and Suwannee counties.

Earliest Recorded Voucher: 1901 (USNM 30929).

**Taxonomy:** Formerly the subspecies *Nerodia cyclopion floridana* but now elevated to full species status (Lawson 1987, Sanderson 1993). Crother (2008) used the common name Florida green watersnake.





Photographs by John B. Jensen (top) and Kevin M. Enge (bottom).

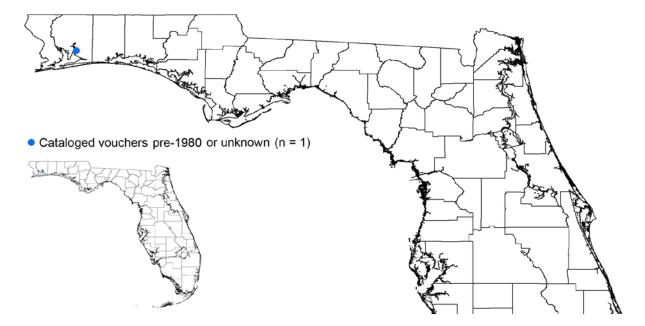
# Nerodia rhombifer (Hallowell 1852)

## **Diamondback Water Snake**

**Geographic Distribution**: There is 1 vouchered record from near the mouth of the Yellow River in Santa Rosa County (TU 18919).

Earliest Recorded Voucher: no date (TU 18919).

**Taxonomy:** Crother (2008) used the common name diamond-backed watersnake.





Photographs by Daniel Parker (top) and Todd W. Pierson (bottom).

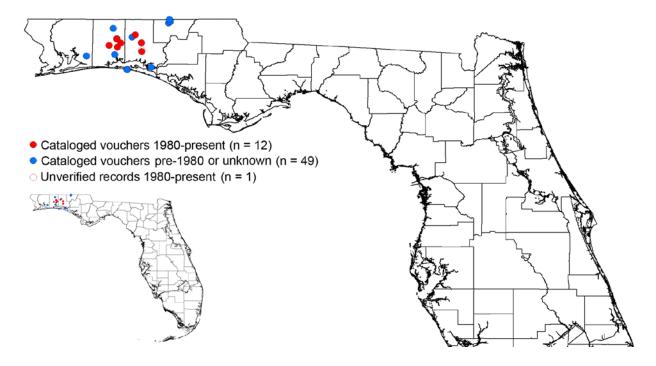
# Nerodia sipedon pleuralis (Cope 1892)

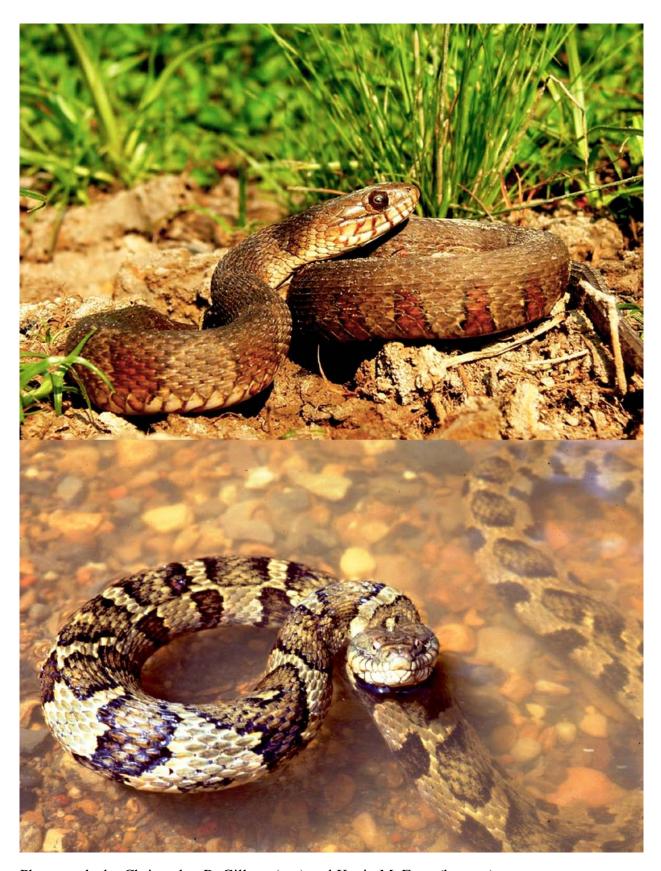
## **Midland Water Snake**

**Geographic Distribution**: There are 61 vouchered records from Holmes, Okaloosa, Santa Rosa, and Walton counties. This species occurs west of the Choctawhatchee River in the panhandle, although no record exists from Escambia County.

Earliest Recorded Voucher: 1968 (AUM 8815).

**Taxonomy:** Crother (2008) used the common name midland watersnake.





Photographs by Christopher R. Gillette (top) and Kevin M. Enge (bottom).

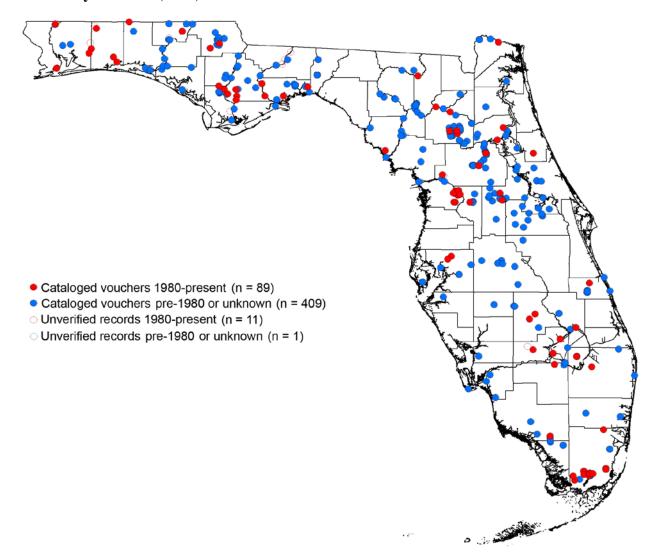
## Nerodia taxispilota (Holbrook 1838)

### **Brown Water Snake**

**Geographic Distribution**: There are 498 vouchered records from 56 counties. This species likely occurs throughout the state except the Keys, although no records exist from Baker, Brevard, DeSoto, Hernando, Madison, Martin, Pasco, Sarasota, St. Johns, St. Lucie, and Taylor counties.

Earliest Recorded Voucher: 1883 (USNM 12791).

**Taxonomy:** Crother (2008) used the common name brown watersnake.





Photographs by John B. Jensen (top) and Christopher R. Gillette (bottom).

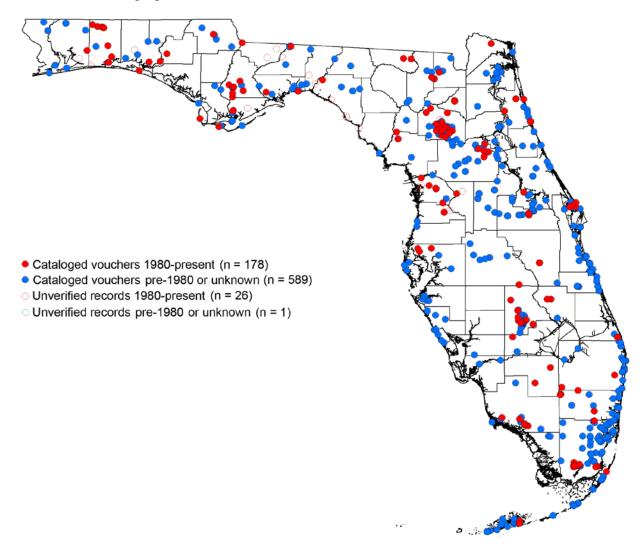
## Opheodrys aestivus (Linnaeus 1766)

## **Rough Green Snake**

**Geographic Distribution**: There are 767 vouchered records from 60 counties and additional unverified records from Gadsden County (Enge et al. 1996, Enge 1998). This species occurs throughout the state, although no records exist from Calhoun, DeSoto, Hardee, Lafayette, St. Lucie, and Suwannee counties.

Earliest Recorded Voucher: 1878 (USNM 9586).

**Taxonomy:** Two subspecies occur in Florida: northern (*aestivus* [Linnaeus 1766]) and Florida (*carinatus* Grobman 1984) green snakes. Recognition of *Opheodrys aestivus carinatus* was supported by Plummer (1987) and Walley and Plummer (2000). Crother (2008) used the common name rough greensnake.





Photographs by Moses Michelsohn (top) and Todd W. Pierson (bottom).

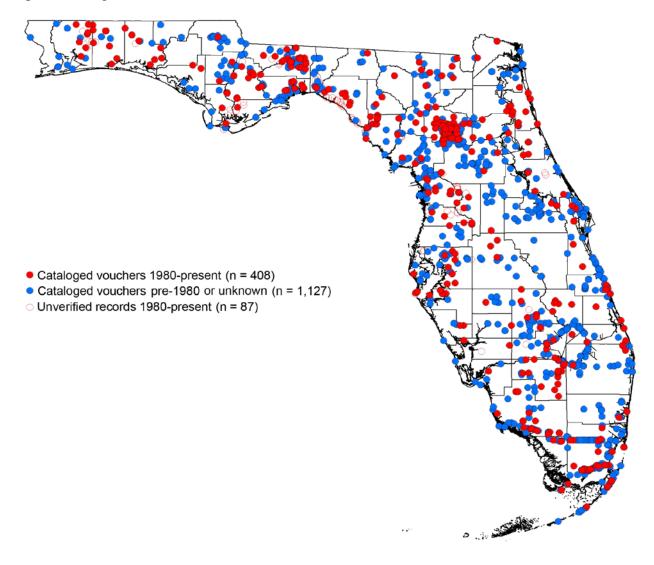
## Pantherophis alleghaniensis and P. spiloides

#### Rat Snake

**Geographic Distribution**: There are 1,535 vouchered records from all 67 counties. These species occur throughout the state except the Lower Keys.

Earliest Recorded Voucher: 1862 (TNHC 35768).

**Taxonomy:** The rat snake (formerly *Elaphe obsoleta*) included 3 subspecies in Florida, the gray (*spiloides*), yellow (*quadrivittata*), and Everglades (*rossalleni*). Utiger et al. (2002) used molecular data and resurrected the name *Pantherophis* Fitzinger 1843 for North American members of *Elaphe*. The species *P. obsoletus* was divided into 3 species based upon morphological and mitochondrial DNA data (Burbrink et al. 2000, Burbrink 2001), with Florida having 2 species, the eastern (*P. alleghaniensis* [Holbrook 1836]) and gray (*P. spiloides* [Duméril, Bibron and Duméril 1854]), with ranges historically separated by the Apalachicola River. We believe the taxonomy and ranges are still unresolved and have opted to combine the 2 species lineages in the same account. Crother (2008) used the common name ratsnake.





Photographs of hatchling *alleghaniensis* by Kevin M. Enge (top left), adult *spiloides* by Kevin M. Enge (top right) and Kenneth L. Krysko (center left), and adult *alleghaniensis* by Kenneth L. Krysko (center right) and Christopher R. Gillette (bottom left & right).

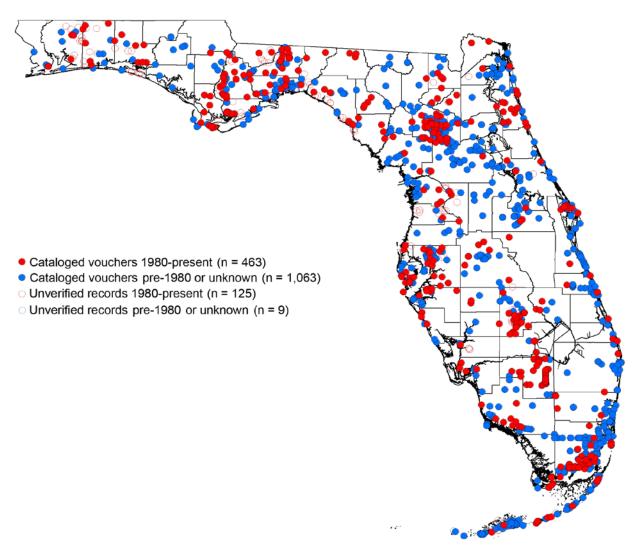
## Pantherophis guttatus (Linnaeus 1766)

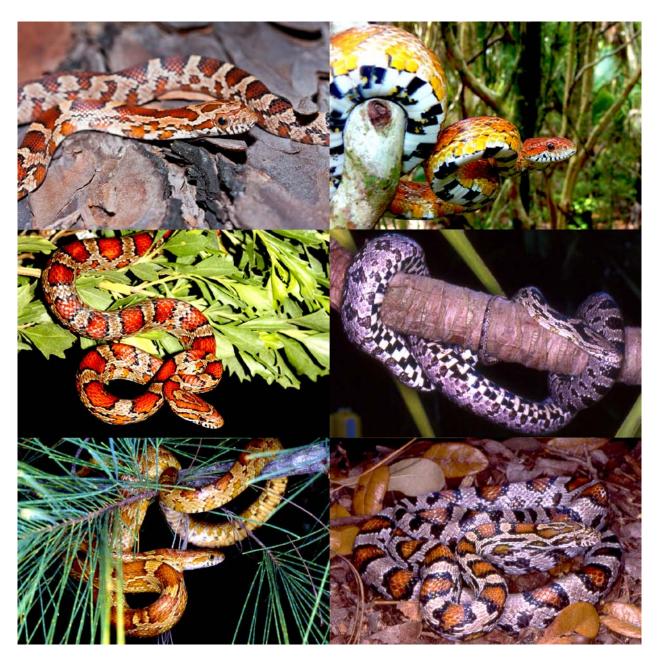
## Corn or Red Rat Snake

**Geographic Distribution**: There are 1,526 vouchered records from all 67 counties. This species occurs throughout the state.

Earliest Recorded Voucher: 1875 (USNM 8366).

**Taxonomy:** Formerly named *Elaphe guttata*. Utiger et al. (2002) used molecular data and resurrected the name *Pantherophis* Fitzinger 1843 for North American members of the genus *Elaphe*. Crother (2008) used the common name red cornsnake.





Photographs of juvenile by Kenneth L. Krysko (top left) and adults by Kenneth L. Krysko (center right, bottom left & right) and Christopher R. Gillette (top right, center left).

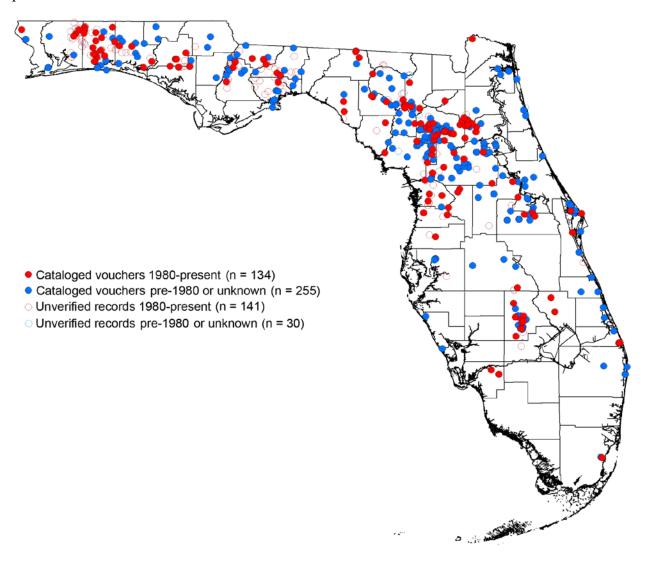
## Pituophis melanoleucus (Daudin 1803)

#### Pine Snake

Geographic Distribution: There are 389 vouchered records from 52 counties and additional unverified FNAI records from Glades and Hamilton counties. No records exist from Baker, Broward, Collier, DeSoto, Flagler, Gulf, Hardee, Hendry, Jefferson, Manatee, Monroe, Osceola, and Pinellas counties. This species probably occurs throughout the state except for the poorly drained area south of Lake Okeechobee. The most recent record (UF 54970) from Miami-Dade County came from Cutler Ridge in 1980, and the species may no longer occur on much of the highly urbanized Atlantic Coast Ridge in southeastern Florida.

Earliest Recorded Voucher: 1881 (USNM 10930).

**Taxonomy:** Two subspecies occur in Florida: black (*lodingi* Blanchard 1924) and Florida (*mugitus* Barbour 1921) pine snakes. The dark-colored phenotype of many specimens from Escambia County shows the influence of *lodingi*. Crother (2008) used the common name pinesnake.





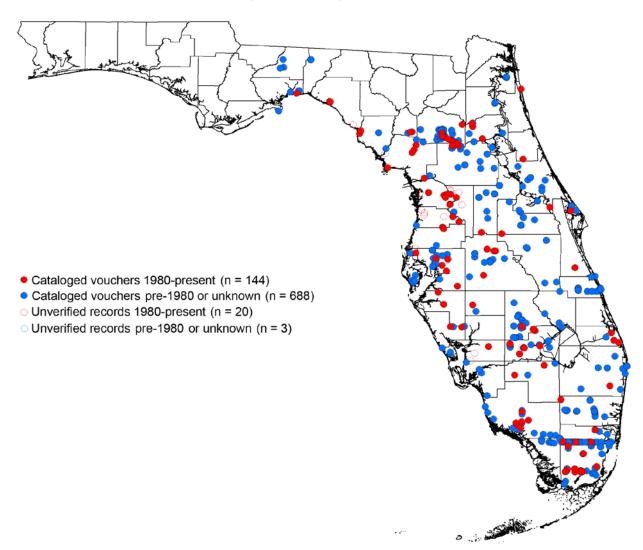
Photographs by Kevin M. Enge (top) and Christopher R. Gillette (bottom).

## Regina alleni (Garman 1874)

## **Striped Crayfish Snake**

**Geographic Distribution**: There are 832 vouchered records from 44 counties. A Franklin County record is the only record west of the Ochlockonee River in the panhandle. The lack of records in the extreme northern peninsula may be an artifact of limited sampling of those counties, because the species occurs farther north in southern Georgia (Jensen et al. 2008). In the southern peninsula, no records exist from DeSoto and St. Lucie counties.

Earliest Recorded Voucher: 1857 (MSU SH.300).





Photographs by Kenneth L. Krysko.

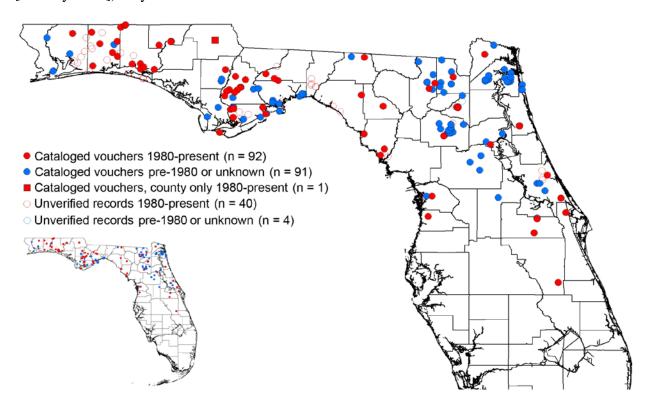
## Regina rigida (Duméril and Bibron 1836)

## **Glossy Crayfish Snake**

Geographic Distribution: There are 184 vouchered records from 33 counties and unverified records from 3 additional counties. The unverified record from Levy County came from the Lower Suwannee National Wildlife Refuge (Dodd et al. 2004), and the unverified records from Gadsden and Jefferson counties were found during FWC surveys of Joe Budd and Aucilla WMAs. This species occurs in the panhandle and northern half of the peninsula, with the southernmost record (UF 65351) from near Kenansville, Osceola County. Within its apparent range, no records exist from Bay, Clay, Flagler, Gilchrist, Hamilton, Seminole, Sumter, Suwannee, and Union counties.

Earliest Recorded Voucher: 1889 (USNM 17389).

**Taxonomy**: Two subspecies occur in Florida: glossy (*rigida* [Say 1825]) and Gulf (*sinicola* [Huheey 1959]) crayfish snakes.





Photographs by Aubrey M. Heupel (top) and Kenneth L. Krysko (bottom).

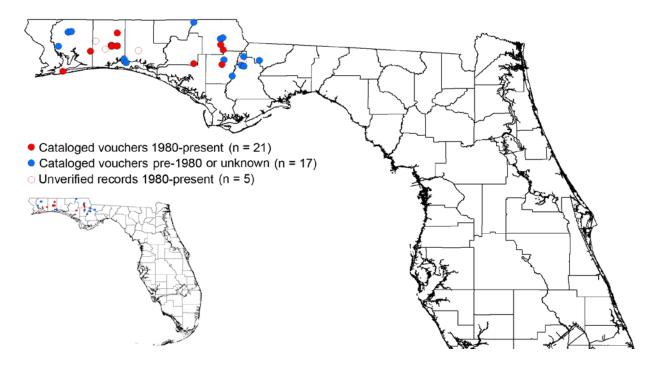
## Regina septemvittata (Say 1825)

## **Queen Snake**

**Geographic Distribution**: There are 38 vouchered records from 9 counties. This species occurs west of the Ochlockonee River in the panhandle. Within its apparent range, no records exist from Bay, Escambia, Gulf, and Franklin counties. It probably also occurs in Leon and Wakulla counties.

Earliest Recorded Voucher: 1932 (AMNH 63368).

**Taxonomy:** Crother (2008) used the common name queensnake.





Photographs by Pierson Hill (top) and Daniel Parker (bottom).

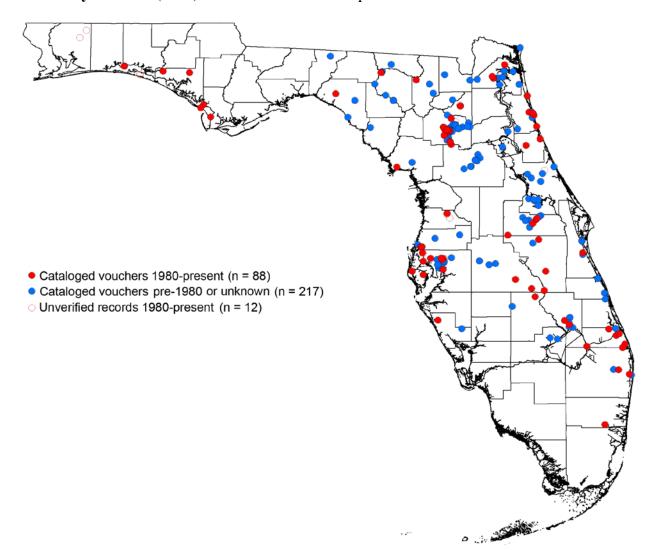
## Rhadinaea flavilata (Cope 1871)

### **Pine Woods Snake**

Geographic Distribution: There are 305 vouchered records from 41 counties and additional unverified records from Blackwater River State Forest, Santa Rosa County (Lorenz and Yates 2006). This species is apparently absent from the southwestern peninsula, and records from the panhandle are scattered. Within its apparent range, records do not exist from Calhoun, Charlotte, Citrus, DeSoto, Escambia, Franklin, Gadsden, Gilchrist, Hardee, Hendry, Holmes, Jackson, Lake, Leon, Liberty, Manatee, Okaloosa, St. Lucie, Sumter, Wakulla, and Washington counties.

Earliest Recorded Voucher: 1883 (USNM 13642).

**Taxonomy:** Crother (2008) used the common name pine woods littersnake.





Photographs by Kenneth L. Krysko (top) and Kevin M. Enge (bottom).

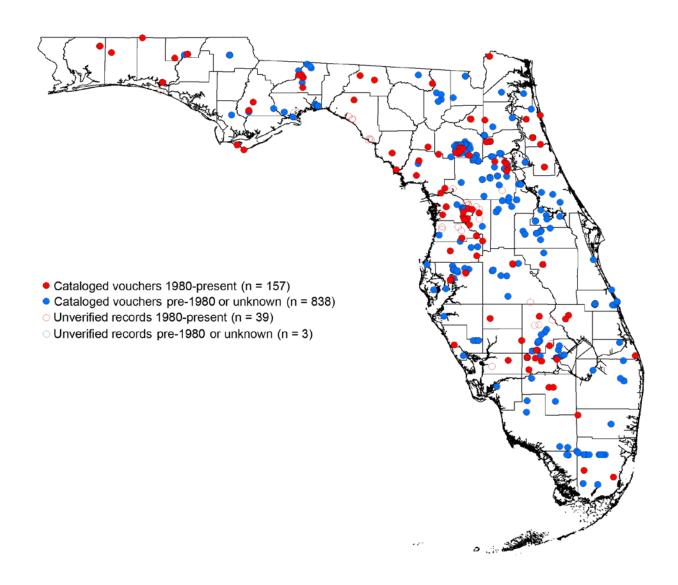
## Seminatrix pygaea (Cope 1871)

### **Black Swamp Snake**

**Geographic Distribution**: There are 995 vouchered records from 58 counties. This species occurs throughout most of Florida except the Keys, but the farthest west it has been recorded in the panhandle is Goose Pond, Blackwater River State Forest, Santa Rosa County (UF 57755, 155277). Within its apparent range, records do not exist from Bay, Calhoun, Gadsden, Jefferson, Lafayette, St. Lucie, Suwannee, and Union counties.

Earliest Recorded Voucher: 1891 (MPM 105).

**Taxonomy:** Two subspecies occur in Florida: southern Florida (*cyclas* Dowling 1950) and northern Florida (*pygaea* [Cope 1871]) swamp snakes. Crother (2008) used the common name black swampsnake.





Photographs by Dirk J. Stevenson (top) and Kevin M. Enge (bottom).

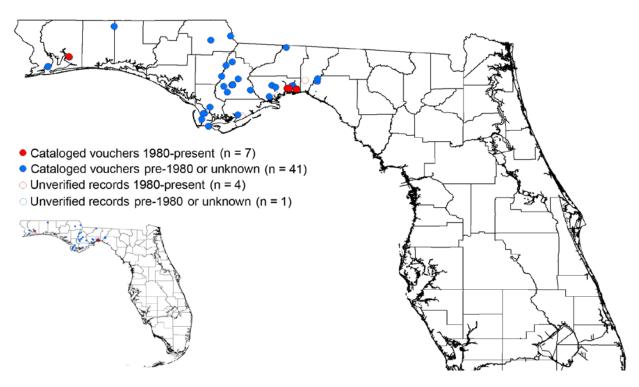
## Storeria dekayi (Holbrook 1836)

#### **Brown Snake**

**Geographic Distribution**: There are 47 vouchered records from 10 counties and an additional unverified record from Jefferson County that was found during an FWC survey of Aucilla WMA. This species is known to occur as far east as Taylor County. Within its apparent range, records do not exist from Bay, Calhoun, Gadsden, Holmes, Walton, and Washington counties.

Earliest Recorded Voucher: 1932 (UMMZ 72809).

**Taxonomy:** Two subspecies have been reported from Florida: marsh (*limnetes* Anderson 1961) and midland (*wrightorum* Trapido 1944) brown snakes. However, we do not believe that *limnetes* has been documented from Florida. Conant and Collins (1991) show the range of *limnetes* extending into Escambia County, but the 2 specimens from Pensacola (MCZ 15713, USNM 2222) appear as *wrightorum* in the museum databases. Crother (2008) used the common name DeKay's brownsnake.





Photographs of wrightorum by Dirk J. Stevenson.

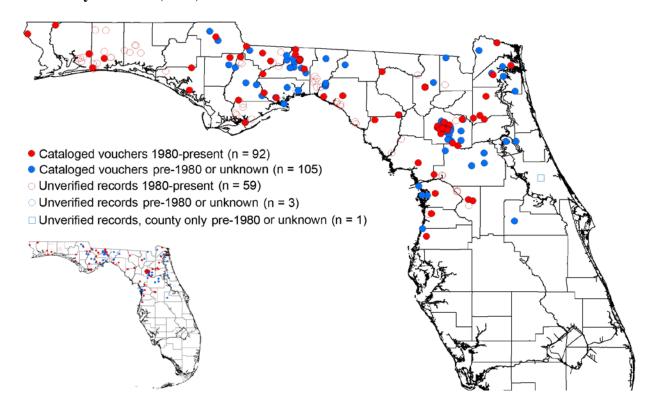
## Storeria occipitomaculata obscura Trapido 1944

### Florida Redbelly Snake

Geographic Distribution: There are 196 vouchered records from 31 counties and additional unverified records from Hamilton (FWC survey of Big Shoals State Park), Volusia (Cope 1988), and Walton (Printiss and Hipes 1999) counties. This species occurs in the northern peninsula and panhandle, with the southernmost records being from Gotha, Orange County (MPM 457), and Argo, Pasco County (ANSP 12308). Within its apparent range, records do not exist from Bradford, Gilchrist, Gulf, Holmes, Lake, Seminole, Suwannee, Union, and Washington counties.

Earliest Recorded Voucher: 1887 (AMNH 3397).

**Taxonomy:** Crother (2008) used the common name Florida red-bellied snake.





Photographs by Kenneth L. Krysko (top) and Kevin M. Enge (bottom).

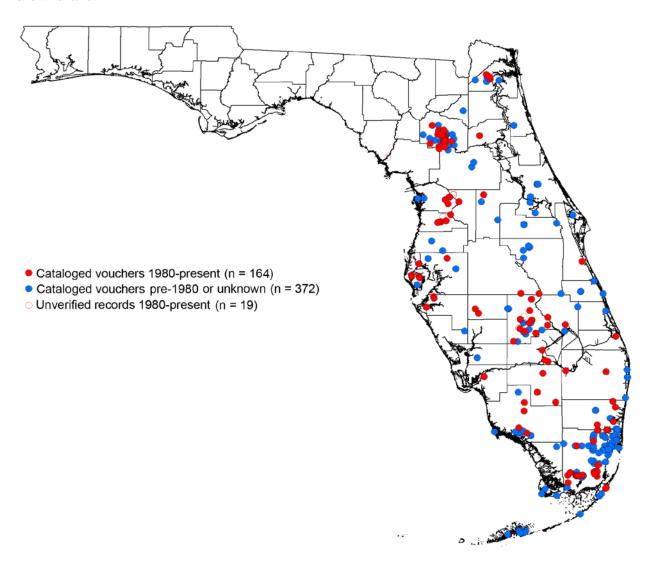
## Storeria victa Hay 1892

#### Florida Brown Snake

**Geographic Distribution**: There are 536 vouchered records from 37 counties. This species occurs throughout most of the peninsula, but no records are known northwest of Alachua County. Within its apparent range, records do not exist from Clay, DeSoto, and Flagler counties. This species probably also occurs in Baker, Columbia, Dixie, Gilchrist, Nassau, and Union counties.

Earliest Recorded Voucher: 1895 (ANSP 30108).

**Taxonomy:** Previously considered a subspecies of the brown snake (*Storeria dekayi*). Christman (1980) presented morphological data suggesting that it is a distinct species, and Crother (2000) recognized it as such. Crother (2008) used the common name Florida brownsnake.





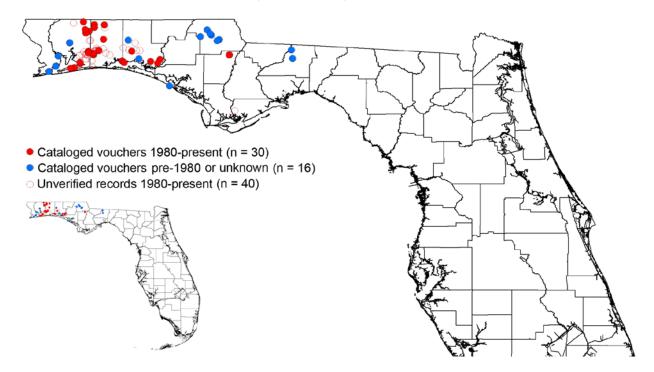
Photographs of juvenile by Kenneth L. Krysko (top) and adult by Kevin M. Enge (bottom).

## Tantilla coronata Baird and Girard 1853

### **Southeastern Crowned Snake**

**Geographic Distribution**: There are 46 vouchered records from Bay, Calhoun, Escambia, Jackson, Leon, Okaloosa, Santa Rosa, and Walton counties. There is an additional unverified record from Franklin County (FWC 2008). This species occurs as far east as Leon County in the panhandle. Within its apparent range, no records exist from Gadsden, Gulf, Holmes, Liberty, and Washington counties.

Earliest Recorded Voucher: 1900 (ANSP 15649).





Photographs by Kelly Jones (top) and Todd W. Pierson (bottom).

### Tantilla oolitica Telford 1966

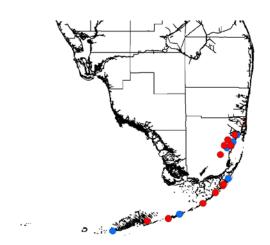
### **Rim Rock Crowned Snake**

Geographic Distribution: There are 28 vouchered records from Miami-Dade and Monroe counties. The northernmost record (unverified from FNAI) is from Arch Creek Memorial Park, Miami, and the southernmost record is from Key West in 1938 (MPM 2596). This species has also been found on Key Largo, Upper and Lower Matecumbe keys, Grassy Key, Vaca Key, and Big Pine Key. The voucher found on Big Pine Key in 2007 (Yirka et al. 2010) represented the first record from the Lower Keys since the 1938 record from Key West.

Earliest Recorded Voucher: 1938 (MPM 2596).

- Cataloged vouchers 1980-present
- Cataloged vouchers pre-1980 or unknown
- Ounverified records 1980-present







Photographs by Kenneth L. Krysko (top) and Dustin C. Smith (bottom).

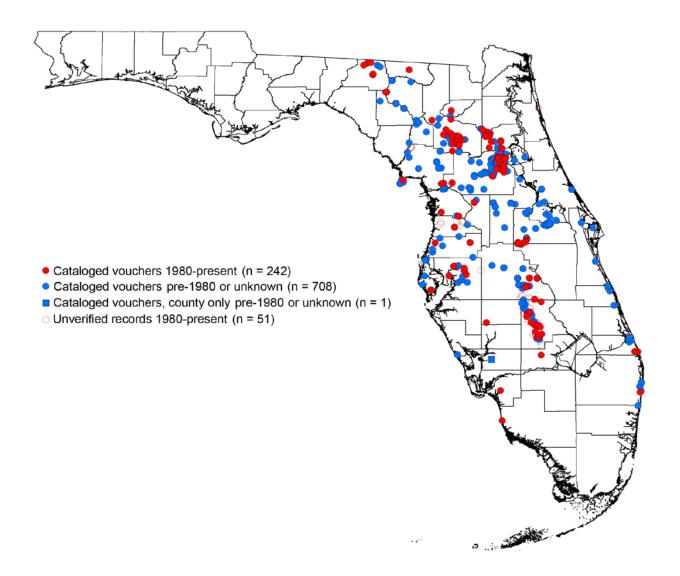
#### Tantilla relicta Telford 1966

#### Florida Crowned Snake

Geographic Distribution: There are 951 vouchered records from 36 counties and an additional unverified record from St. Johns County found during an FWC survey of Guana River WMA. This species occurs in the interior of the peninsula from Madison and Hamilton counties south to Palmdale, Glades County (UF 151271). The *pamlica* subspecies occurs along the Atlantic Coastal Ridge from St. Johns County south to Deerfield Beach, Palm Beach County (UF 12423). Along the Gulf Coast, the species occurs from Levy County south to Naples, Collier County (UF 69550). Within its apparent range, records do not exist from Broward, Manatee, and St. Lucie counties.

Earliest Recorded Voucher: 1896 (USNM 24358).

**Taxonomy:** Three subspecies occur in Florida: Central Florida (*neilli* Telford 1966), coastal dunes (*pamlica* Telford 1966), and peninsula (*relicta* Telford 1966) crowned snakes. Based on allopatry and diagnosability, Collins (1991) suggested that the coastal dunes crowned snake be recognized as a separate species, *Tantilla pamlica*.





Photographs of pamlica by Moses Michelsohn (top) and relicta by Kevin M. Enge (bottom).

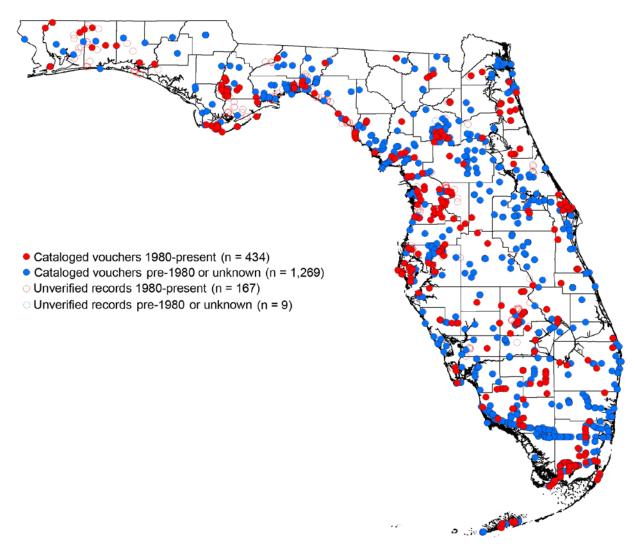
## Thamnophis sauritus (Linnaeus 1766)

### **Eastern Ribbon Snake**

**Geographic Distribution**: There are 1,703 vouchered records from 64 counties. This species likely occurs throughout the state, although records do not exist from Nassau, Suwannee, and Union counties.

Earliest Recorded Voucher: 1853 (USNM 7220).

**Taxonomy:** Three subspecies occur in Florida: bluestripe (*nitae* Rossman 1963), peninsula (*sackenii* [Kennicott 1859]), and common (*sauritus* [Linnaeus 1766]). Crother (2008) used the common names blue-striped, peninsula, and common ribbonsnakes.





Photographs by Kenneth L. Krysko (top) and Moses Michelsohn (bottom).

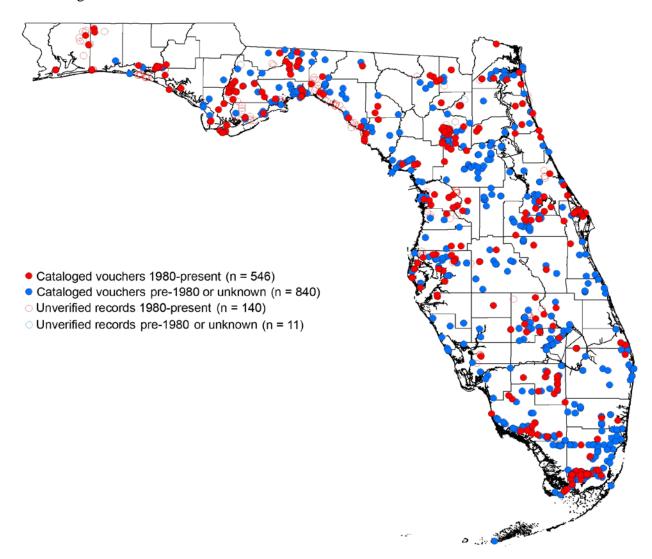
## Thamnophis sirtalis (Linnaeus 1758)

#### **Common Garter Snake**

Geographic Distribution: There are 1,386 vouchered records from 63 counties and an additional unverified record from Hamilton County that was found during an FWC survey of Big Shoals State Park. This species likely occurs throughout the state, although records do not exist from Holmes, Jackson, St. Lucie, and Suwannee counties. The 1972 voucher (MSB 25127) from Key West, Monroe County, was likely introduced, and the species probably does not occur in the Middle and Lower Keys.

Earliest Recorded Voucher: 1878 (USNM 9696).

**Taxonomy:** Two subspecies occur in Florida: bluestripe (*similis* Rossman 1965) and eastern *sirtalis* [Linnaeus 1758]) garter snakes. Crother (2008) used the common names blue-striped and common gartersnakes.





Photographs of sirtalis by Dirk J. Stevenson (top) and similis by Daniel Parker (bottom).

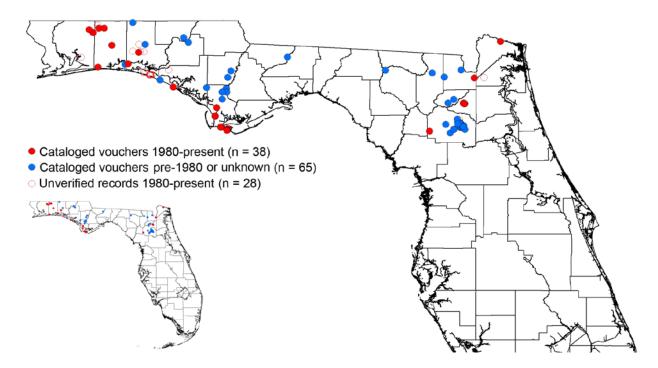
## Virginia striatula (Linnaeus 1766)

## **Rough Earth Snake**

Geographic Distribution: There are 103 vouchered records from 17 counties and an additional unverified record from Duval County (White 1983). This species occurs in the panhandle east as far as Gadsden County and in the northern peninsula from Alachua County northwards to the Georgia state line. An apparent distributional gap exists between the Ochlockonee and Suwannee rivers. Within its apparent range, records do not exist from Clay, Dixie, Escambia, Gadsden, Gilchrist, Hamilton, Jackson, Lafayette, Levy, Liberty, Putnam, Suwannee, Taylor, and Wakulla counties.

Earliest Recorded Voucher: 1916 (UF 458).

**Taxonomy:** Crother (2008) used the common name rough earthsnake.





Photographs by Dirk J. Stevenson (top) and Todd W. Pierson (bottom).

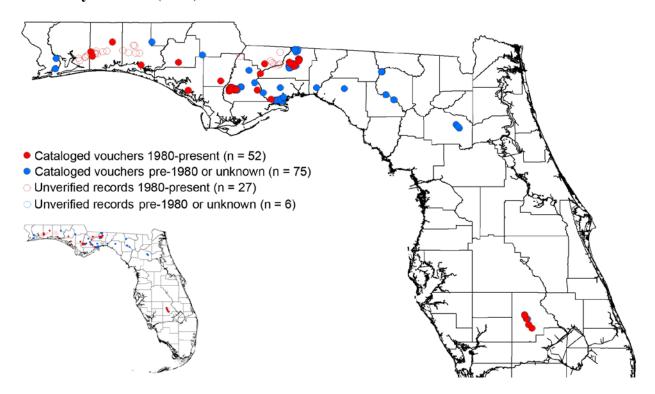
## Virginia valeriae Baird and Girard 1853

### **Eastern Smooth Earth Snake**

Geographic Distribution: There are 127 vouchered records from 18 counties and additional unverified records from Eglin Air Force Base, Santa Rosa County (Printiss and Hipes 1999, Enge 2005c). This species occurs throughout the panhandle east to Alachua County in the peninsula. A disjunct population in Highlands County (Campbell 1962) is represented by 6 vouchers, one as recently as 2007. Within its apparent range, records do not exist from Bradford, Columbia, Franklin, Gilchrist, Gulf, Hamilton, and Union counties.

Earliest Recorded Voucher: 1912 (USNM 307940).

**Taxonomy:** Crother (2008) used the common name eastern smooth earthsnake.





Photographs by Dirk J. Stevenson (top) and John B. Jensen (bottom).

#### **FAMILY ELAPIDAE**

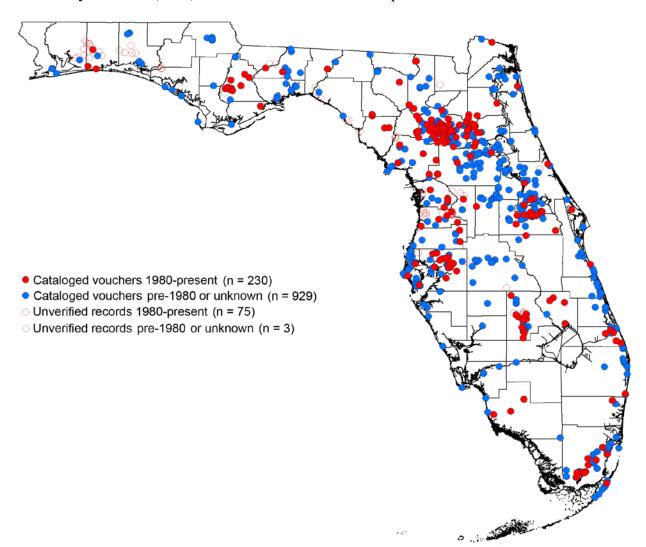
# Micrurus fulvius (Linnaeus 1766)

### **Eastern Coral Snake**

**Geographic Distribution**: There are 959 vouchered records from 60 counties and additional unverified records from Baker and Gadsden counties found during FWC surveys of Olustee Battlefield Historic State Park and Joe Budd WMA. This species likely occurs throughout the state, although there are no records from Charlotte, Glades, Hamilton, Holmes, and Washington counties.

Earliest Recorded Voucher: 1876 (USNM 8783).

**Taxonomy:** Crother (2008) used the common name harlequin coralsnake.





Photographs by Kenneth L. Krysko.

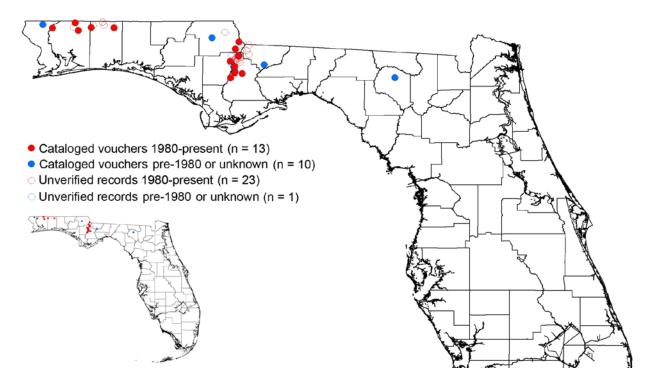
#### **FAMILY CROTALIDAE**

### Agkistrodon contortrix (Linnaeus 1766)

# **Southern Copperhead**

Geographic Distribution: There are 22 vouchered records from Calhoun, Escambia, Gadsden, Jackson, Liberty, Okaloosa, Santa Rosa, and Suwannee counties. This species occurs in the Apalachicola River drainage as far south as Sumatra and in the northern portion of the 3 westernmost counties in the panhandle. There is 1 specimen from the Ochlockonee River drainage in Gadsden County, a 1967 voucher (UF 66442) from McIntosh Branch south of Quincy on the north side of Lake Talquin. The voucher specimen (AMNH 126566) from Suwannee County (AMNH 126566) is purportedly from Live Oak and was purchased by Wilfred T. Neill; this collection locality should be considered dubious.

Earliest Recorded Voucher: 1952 (UF 19672).





Photographs of juvenile by Kenneth L. Krysko (top) and adult by Todd W. Pierson (bottom).

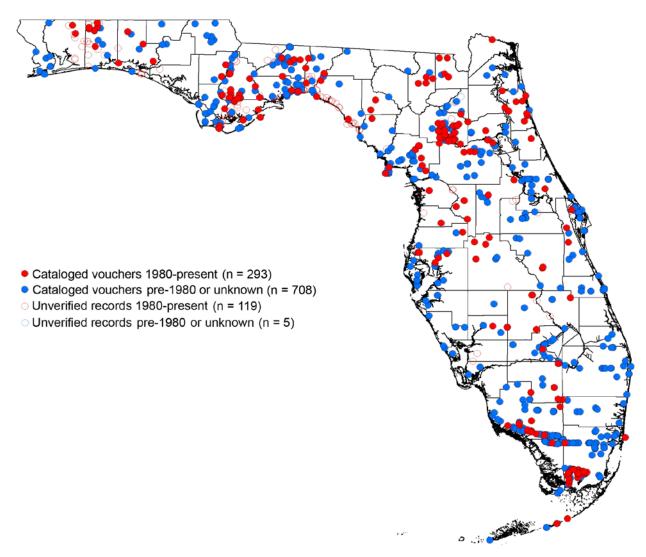
## Agkistrodon piscivorus (Lacépéde 1789)

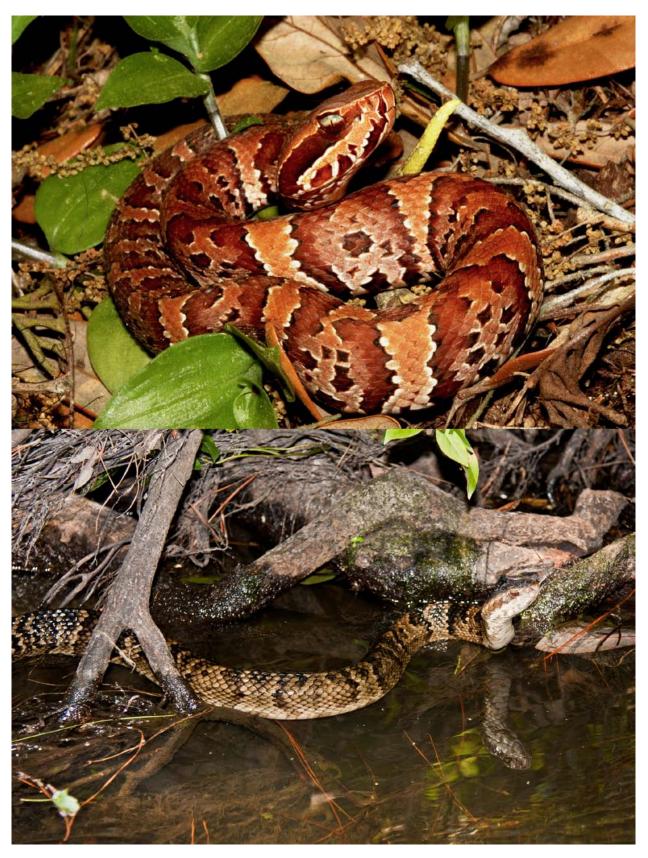
### **Cottonmouth or Moccasin**

**Geographic Distribution**: There are 1,001 vouchered records from 60 counties and an additional unverified record from Bay County (Hecht and Drayer 2007). This species likely occurs throughout the state, although there are no records from Broward, Clay, Gilchrist, St. Lucie, Suwannee, and Union counties.

Earliest Recorded Voucher: 1879 (USNM 10734).

**Taxonomy:** Crother (2008) recognized 2 subspecies in Florida, the Florida (*conanti* Gloyd 1969) and eastern (*piscivorus* [Lacépéde 1789]) cottonmouths. However, Guiher and Burbrink (2008) used mitochondrial DNA to illustrate that Florida specimens exist in a single lineage and suggested that they should be recognized as a single species with no subspecies.





Photographs of juvenile by Kevin M. Enge (top) and adult by Kenneth L. Krysko (bottom).

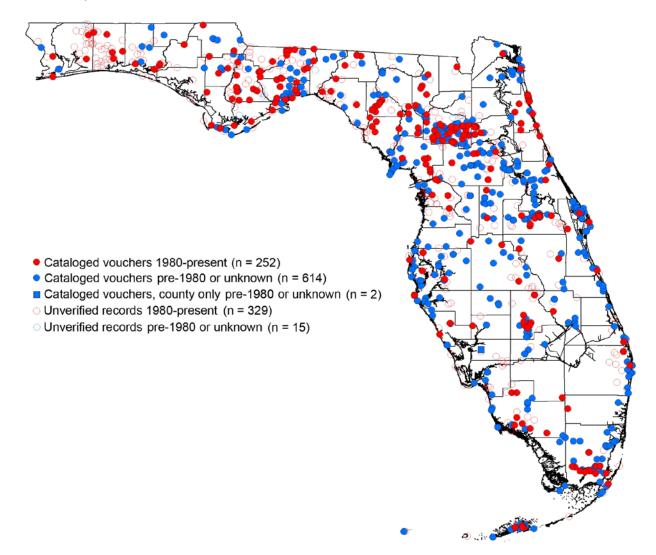
### Crotalus adamanteus Palisot de Beauvois 1799

### **Eastern Diamondback Rattlesnake**

**Geographic Distribution**: There are 866 vouchered records from 66 counties. This species occurs throughout the state, but there is no record from Union County.

Earliest Recorded Voucher: 1877 (USNM 9501).

**Taxonomy:** Crother (2008) used the common name eastern diamond-backed rattlesnake.





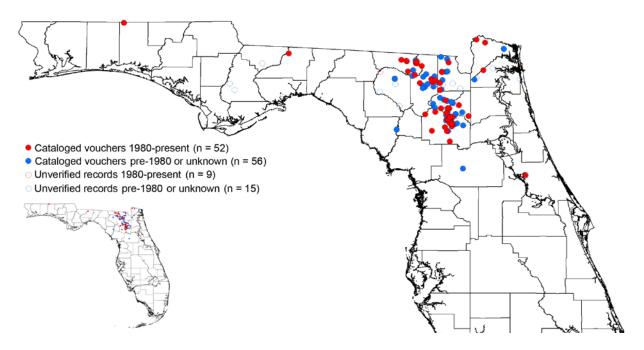
Photographs by Christopher R. Gillette (top) and Kevin M. Enge (bottom).

#### Crotalus horridus Linnaeus 1758

#### **Timber Rattlesnake**

Geographic Distribution: There are 108 vouchered records from 14 counties, and there are additional unverified records from near Wetumpka, Gadsden County, and at Orange and near Wilma, Liberty County (Allen 1949). Other records from the panhandle are from the south side of Lake Jackson in Walton County, 1 km south of the Alabama state line (UF 91594; Jensen et al. 1994), and north of Tallahassee in Leon County (UF 165528). The latter specimen shared mitochondrial DNA haplotypes with the nearest population in southern Georgia, but it might have been a released individual. Two specimens (AMNH 4078, 4079) were collected (year unknown) along the Suwannee River in Dixie County, 8 km upstream from Old Town. A 1938 record from Ocala in Marion County (OUVC 1261) may be invalid, although a specimen (UF 124967) was collected in 2001 in southern Alachua County, 3 km NW of Micanopy. It is unknown whether the specimen collected in 2009 from Lake Woodruff National Wildlife Refuge, Volusia County (Blihovde and Brady 2010) represents an extension of the natural range of the species. This species probably also occurs in Clay, Holmes, Madison, Okaloosa, and Putnam counties.

Earliest Recorded Voucher: 1937 (UF 1184).





Photographs by Kevin M. Enge (top) and Todd W. Pierson (bottom).

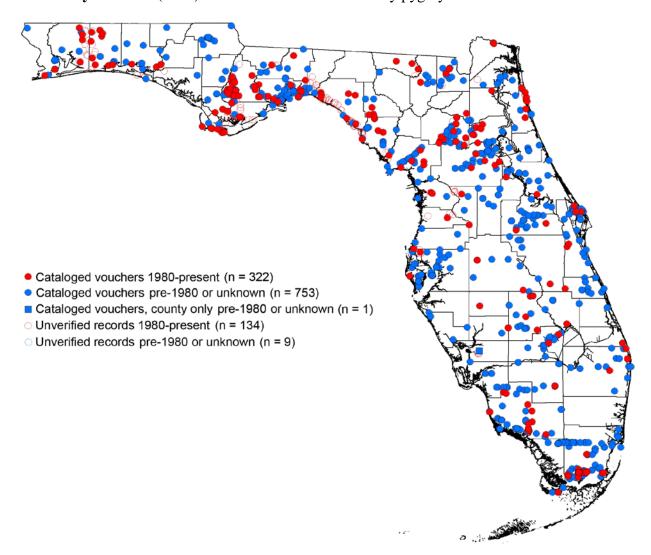
# Sistrurus miliarius barbouri Gloyd 1935

# **Dusky Pigmy Rattlesnake**

**Geographic Distribution**: There are 1,076 vouchered records from 62 counties. This species likely occurs throughout the state except for the Keys, although there are no records from Broward, Gilchrist, Manatee, Suwannee, and Union counties.

Earliest Recorded Voucher: 1876 (USNM 8784).

**Taxonomy:** Crother (2008) used the common name dusky pygmy rattlesnake.





Photographs by Moses Michelsohn (top) and Kenneth L. Krysko (bottom).

#### FAMILY TYPHLOPIDAE

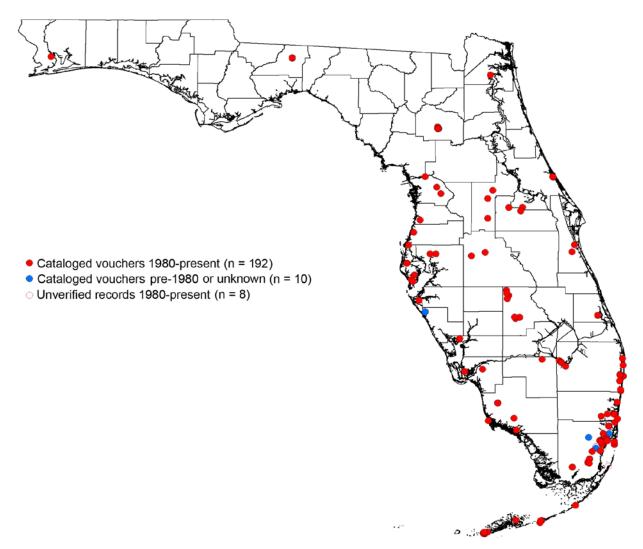
# Ramphotyphlops braminus (Daudin 1803)

## **Brahminy Blind Snake (Non-native)**

Geographic Distribution: There are 202 vouchered records of this non-native species from 27 counties. Because it is parthenogenetic (all female species), every locality possibly represents an established population, and the species undoubtedly occurs in many more locations than indicated. The 10 blue dots on the map represent specimens with no year given. This is the most widely distributed species of snake in the world, and it originated in Southeast Asia (Lever 2003).

Earliest Recorded Voucher: 1984 (AUM 32681).

**Taxonomy:** Crother (2008) used the common name Brahminy blindsnake.





Photographs by Kevin M. Enge (top) and Kenneth L. Krysko (bottom).

#### **ACKNOWLEDGMENTS**

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Southern, 19, 21, <b>370–372</b>	Common, <b>179–180</b>
Horned Lizard, Texas, 234–235	Loggerhead, <b>176–178</b>
Iguana:	Narrowmouth Toad, Eastern, 108-109

Newt:	Leatherback, 20, <b>164–166</b>
Eastern, 3, <b>44–45</b>	Loggerhead, 20, <b>150–152</b>
Striped, 5, 14, 19, 20, <b>42–43</b>	Olive Ridley, 20, <b>162–163</b>
Python:	Siren:
Northern African Rock, 351–352	Eastern Lesser, 36–37
Burmese, <b>349–350</b>	Greater, <b>38–39</b>
Racer, Eastern, 1, 4, 357–258	Northern Dwarf, 1, 3, 5, 14, 20, 31,
Racerunner:	34–35
Eastern Six-lined, 308-309	Southern Dwarf, 1, 3, 5, 14, <b>31–33</b> , 34
Rainbow, 311–312	Skink:
Rat Snake:	African Five-lined, 333–334
Eastern, 3, <b>402–403</b>	Broadhead, <b>327–328</b>
Gray, <b>402–403</b>	Five-lined, <b>323–324</b>
Red, 19, 22, <b>404–405</b>	Ground, <b>331–332</b>
Rattlesnake:	Little Brown, <b>331–332</b>
Canebrake, 22, <b>447–448</b>	Mabuya <b>, 317–318</b>
Dusky Pygmy, <b>449–450</b>	Many-lined Sun, <b>316–317</b>
Eastern Diamondback, 22, 445–446	Mole, 1, 13, 21, <b>321–322</b>
Timber, 22, <b>447–448</b>	Ocellated, <b>315–316</b>
Ridley:	Sand, 1, 13, 21, <b>329–330</b>
Atlantic, 20, <b>159–161</b>	Southeastern Five-lined, 325–326
Olive, 20, <b>162–163</b>	Southern Coal, 21, <b>319–320</b>
Salamander:	Slider:
Apalachicola Dusky, 5, 20, <b>56–57</b>	Red-eared, <b>205–206</b> , 207
Dwarf, 20, <b>68–70</b>	Yellowbelly, 205, <b>207–208</b>
Eastern Tiger, 20, 28, <b>54–55</b>	Snake:
Frosted Flatwoods, 13, 20, 46, <b>48–49</b>	Black, 1, 4, <b>357–358</b>
Four-toed, 20, <b>73–74</b>	Black Swamp, 1, 22, <b>416–417</b>
Georgia Blind, 3, 20, <b>71–72</b>	Brahminy Blind, <b>451–452</b>
Many-lined, 14, 20, <b>81–82</b>	Brown, 13, 22, <b>418–419</b>
Marbled, <b>50–51</b>	Corn, 19, 22, <b>404–405</b>
Mole, 52–53	Dekay's Brown, 13, 22, <b>418–419</b>
Mud, 77–78	Eastern Earth, 22, <b>437–438</b>
Reticulated Flatwoods, 3, 20, <b>46–47</b> , 48	Eastern Hognose, 19, 21, <b>368–369</b>
Seal, 19, <b>62–63</b>	Eastern Indigo, 14, 19, 21, <b>361–363</b>
Southeastern Slimy, <b>75–76</b>	Eastern Mud, <b>364–365</b>
Southern Dusky, 19, 20, <b>58–59</b>	Florida Brown, 22, <b>422–423</b>
Southern Red, <b>79–80</b>	Florida Crowned, 1, 4, 22, <b>428–430</b>
Southern Two-lined, <b>64–65</b>	Florida Pine, 22, <b>406–407</b>
Spotted, 1, 54	Florida Redbelly, <b>420–421</b>
Spotted, 1, 5 1 Spotted Dusky, 20, <b>60–61</b>	Garter, 1, 433–434
Three-lined, <b>66–67</b>	Glossy Crayfish, 410–411
Sea Turtle:	Javan File, <b>345–346</b>
Atlantic Green, 20, <b>153–155</b>	Pine Woods, 4, <b>414–415</b>
Atlantic Hawksbill, 20, <b>156–158</b>	Queen, 412–413
Atlantic or Kemp's Ridley, <b>20, 159–161</b>	Rainbow, 1, 13, 21, <b>366–367</b>
Addition Noting 8 Kidley, 20, 137-101	Kamoow, 1, 13, 21, 300-307

Rat, <b>402–403</b>	Cope's Gray, <b>128–129</b>
Ribbon, 1, 19, 22, <b>431–432</b>	Cuban, <b>138–139</b>
Rim Rock Crowned, 1, 4, 22, <b>426–427</b>	Green, 130–131
Ringneck, 1, 21, <b>359–360</b>	Pine Barrens, 19, 20, <b>124–125</b>
Rough Earth, <b>435–436</b>	Pine Woods, <b>132–133</b>
Rough Green, 400–401	Squirrel, <b>136–137</b>
Salt Marsh, 1, 21, <b>84–385</b>	Turtle:
Scarlet, 21, <b>355–356</b>	Alligator Snapping, 5, 19, 20, <b>169–171</b>
Short-tailed, 1, 21, <b>378–379</b>	Barbour's Map, 3, 21, <b>187–188</b>
Southeastern Crowned, 424–425	Box, 21, <b>203–204</b>
Southern Hognose, 19, 21, <b>370–372</b>	Chicken, 1, 21, <b>185–186</b>
Striped Crayfish, <b>408–409</b>	Common Musk, <b>179–180</b>
Worm, 28, <b>353–354</b>	Common Snapping, 167–168
Yellow-lipped, 4, <b>414–415</b>	East African Black Mud, 30
Snapping Turtle:	Eastern Mud, 174–175
Alligator, 5, 19, 20, <b>169–171</b>	Escambia Map, 21, <b>189–190</b>
Common, <b>167–168</b>	Gopher, 21, <b>209–210</b>
Softshell:	Loggerhead Musk, <b>176–178</b>
Florida, <b>211–212</b>	Spotted, 20, <b>183–184</b>
Gulf Coast Smooth, 21, <b>213–214</b>	Stinkpot, <b>179–180</b>
Gulf Coast Shiooth, 21, 213–214 Gulf Coast Spiny, 21, 215–216	Striped Mud, 20, <b>172–173</b>
- ·	Wall Gecko:
Spadefoot, Eastern, <b>88–89</b> Spinytail Iguana:	Moorish, 302–303
Black, 230–231	Ringed, 301–302
Gray's, 230–231	White-spotted Wall, 301–302
Mexican, 228–229	Water Moccasin, 443–444
Spring Peeper, <b>140–141</b>	Water Snake:
Stinkpot, <b>179–180</b>	Brown, <b>398–399</b>
Swamp Snake:	Florida Green, <b>392–393</b>
Black, 1, 22, <b>416–417</b>	Glossy, <b>410–411</b>
Striped, 408–409	Mangrove, 1, 21, <b>384–385</b>
Tegu, Argentine Giant, 312–313	Midland, 396–397
Terrapin, Diamondback, 1, 3, 21, <b>193–194</b>	Mississippi Green, 22, <b>386–387</b>
Toad:	Plainbelly, <b>388–389</b>
Cane, 116–117	Southern, 390–391
Eastern Narrowmouth, 108–109	Waterdog, Loding's, 40–41
Eastern Spadefoot, 88–89	Whiptail:
Fowler's, 13, 110–111	Giant, 306–307
Giant, <b>116–117</b>	Rainbow, 310–311
Oak, <b>112–113</b>	Wood Slave, 291–292
Southern, 114–115	Worm Lizard, Florida, 21, <b>223–225</b>
Tortoise, Gopher, 21, <b>209–210</b>	
Treefrog:	
Australian Green, 30	
Barking, <b>134–135</b>	
Bird-voiced, <b>126–127</b>	

APPENDIX A. Native and non-native (denoted by \* after species name) amphibian and reptile species in Florida and their county presence based on voucher specimen or photograph (V), unverified/unvouchered record (U), or potential based upon range and habitats (P).

	Alachua	Baker	Bay	Bradford	Brevard	Broward	Calhoun	Charlotte	Citrus	Clay	Collier	Columbia	DeSoto	Dixie	Duval	Escambia	Flagler	Franklin
Scientific Name	A	В	В	В	В	В	O	O	O	O	O	O	Д	Д	Д	田	T,	压
ORDER CAUDATA																		
FAMILY SIRENIDAE																		
Pseudobranchus axanthus	V				P	P		U	V	P	P		P				P	
Pseudobranchus striatus	V	V	V	V	P		P		V	P		V		V	V	P	P	V
Siren intermedia complex	V	V	V	V	V	V	V	P	V	P		V	P	P	V	V	P	U
Siren lacertina complex	V	V	P	U	V	V	V	V	V	P	V	V	P	U	P	V	V	V
FAMILY PROTEIDAE																		
Necturus sp. cf. beyeri			V				V									V		P
FAMILY SALAMANDRIDAE																		
Notophthalmus perstriatus	V			P					V	V		V		V	V		P	
Notophthalmus viridescens	V	V	V	V	U	V	V	V	V	P	V	V	P	V	V	P	P	V
FAMILY AMBYSTOMATIDAE																		
Ambystoma bishopi			P				V									V		
Ambystoma cingulatum	V	V		U											V			V
Ambystoma opacum			P				V							V				
Ambystoma talpoideum	V	P	V				V			P		V		V	V	P		P
Ambystoma tigrinum	V		P				V		U			V		V		P		
FAMILY PLETHODONTIDAE																		
Desmognathus apalachicolae							V											<u> </u>
Desmognathus auriculatus	V	V	V	U			V		V	V		V		V	V	V		V
Desmognathus cf. conanti			P													V		
Desmognathus monticola																V		
Eurycea cirrigera			V				V							V		V		V
Eurycea guttolineata			V				V									V		P
Eurycea quadridigitata complex	V	V	V	V	V	P	V	P	V	V		V	P	V	V	V	P	V
Eurycea wallacei			P				V											
Hemidactylium scutatum																		

Scientific Name	Alachua	Baker	Bay	Bradford	Brevard	Broward	Calhoun	Charlotte	Citrus	Clay	Collier	Columbia	DeSoto	Dixie	Duval	Escambia	Flagler	Franklin
Plethodon grobmani	V	U	V	P			V		P	V		V		V	V	V	V	V
Pseudotriton montanus	V	V	V	V			V			V		V			V	V		P
Pseudotriton ruber	V		V				V									V		
Stereochilus marginatus		V										V			P			
FAMILY AMPHIUMIDAE																		
Amphiuma means	V	V	V	V	V	V	V	U	V	V	V	V	P	V	V	V	P	V
Amphiuma pholeter			V				V		P					P		V		P
ORDER ANURA																		
FAMILY SCAPHIOPODIDAE																		
Scaphiopus holbrookii	V	V	P	V	V	V	V	P	V	V	V	V	V	V	V	V	V	P
FAMILY RANIDAE																		
Lithobates capito	V	U	P	U	V	V	V	V	V	V	V	V	V	P	V	P	P	V
Lithobates catesbeianus	V	V	P	V	V		V	V	V	V		V	V	V	V	V	P	V
Lithobates clamitans	V	V	V	V			V		P	V		V		U	V	V	P	V
Lithobates grylio	V	V	V	U	V	V	V	V	V	V	V	V	P	V	V	V	V	V
Lithobates heckscheri	V	V	V	V			V			V		V		P	V	V	V	V
Lithobates okaloosae																		
Lithobates palustris																V		
Lithobates sphenocephalus	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	P	V
Lithobates virgatipes		V										V						
FAMILY MICROHYLIDAE																		
Gastrophryne carolinensis	V	V	V	V	V	V	V	V	V	V	V	V	P	V	V	V	V	V
FAMILY BUFONIDAE																		<u> </u>
Anaxyrus fowleri			V				V					P				V		P
Anaxyrus quercicus	V	V	V	V	V	V	V	V	V	V	V	V	P	V	V	V	P	V
Anaxyrus terrestris	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V
Rhinella marina*			V		V	V			U	V	V	V						

Scientific Name	Alachua	Baker	Bay	Bradford	Brevard	Broward	Calhoun	Charlotte	Citrus	Clay	Collier	Columbia	DeSoto	Dixie	Duval	Escambia	Flagler	Franklin
FAMILY ELEUTHERODACTYLIDAE																		
Eleutherodactylus planirostris*	V		V	V	V	V		V	V	V	V	V		V	V		V	V
FAMILY HYLIDAE																		
Acris crepitans			P				P									V		V
Acris gryllus	V	V	V	V	V	V	V	V	V	V	V	V	P	V	V	V	V	V
Hyla andersonii																		
Hyla avivoca			V				V									V		U
Hyla chrysoscelis	V	P	P	V			V		V	V		V		V	V	V		U
Hyla cinerea	V	V	V	V	V	V	V	V	V	V	V	V	P	V	V	V	V	V
Hyla femoralis	V	V	V	V	V	V	V	V	V	V	V	V	V	U	V	V	P	V
Hyla gratiosa	V	V	V	V	V	V	V	V	V	U	V	V	V	V	V	V	V	V
Hyla squirella	V	V	V	V	V	V	V	V	V	P	V	V	V	V	V	V	V	V
Osteopilus septentrionalis*	V		V	V	V	V		V	V	V	V	V	V		V		V	V
Pseudacris crucifer	V	P	P	P			V		V	V		V		V	V	V	V	P
Pseudacris feriarum							V											
Pseudacris nigrita	V	V	V	V	V	V	V	P	V	V	V	V	P	V	V	V	V	V
Pseudacris ocularis	V	V	P	V	V	V	V	P	V	V	V	V	P	V	V		V	V
Pseudacris ornata	V	P	V	V			V			V	V	V		P	V	P	V	V
ORDER TESTUDINES																		
FAMILY CHELONIIDAE																		
Caretta caretta			V		V	V		U	V	V	V			U	U	V	V	V
Chelonia mydas			V		V	P		P	V		P			U	P	U	P	V
Eretmochelys imbricata			U		V	V		U	P		U			P	V	P	U	U
Lepidochelys kempii			P		V	P		P	V		V			U	V	U	V	V
Lepidochelys olivacea																		
FAMILY DERMOCHELIDAE																		
Dermochelys coriacea			U		V	V		U	P		U			P	V	P	V	U

Scientific Name	Alachua	Baker	Bay	Bradford	Brevard	Broward	Calhoun	Charlotte	Citrus	Clay	Collier	Columbia	DeSoto	Dixie	Duval	Escambia	Flagler	Franklin
FAMILY CHELYDRIDAE																		
Chelydra serpentina	V	V	P	U	V	V	V	V	V	V	V	V	P	V	V	V	P	V
Macrochelys temminckii complex	V		V	V			V					V		V	V	V		V
FAMILY KINOSTERNIDAE																		
Kinosternon baurii	V	V		V	V	V	P	P	V	V	V	V	P	V	V		P	V
Kinosternon subrubrum	V	V	V	V	V	V	V	V	V	V	V	V	P	V	V	V	P	V
Sternotherus minor	V	P	V	V			V		V	V		V		V	V	V	P	V
Sternotherus odoratus	V	V	P	V	P	P	V	V	V	P	V	V	P	V	V	V	P	V
FAMILY EMYDIDAE																		
Chrysemys dorsalis*	V																	
Clemmys guttata	V	V		P						P		P		P	V		P	
Deirochelys reticularia	V	V	V	V	V	V	V	V	V	V	V	V	P	V	V	V	V	V
Graptemys barbouri							V											V
Graptemys ernsti																V		
Graptemys pseudogeographica*					V							V						
Malaclemys terrapin			P		V	P		V	V	V	V			V	V	V	P	V
Pseudemys concinna	V		V	P			V		V			V		V		V		V
Pseudemys floridana	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	P	V
Pseudemys nelsoni	V	V		V	V	V	V	P	V	V	V	P	P	V	V		P	V
Terrapene carolina	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V
Trachemys scripta elegans*	V				V	V	V				V	V						
Trachemys scripta scripta	V	V	V	V		V	V		P	P		V		V	P	V		V
FAMILY TESTUDINIDAE																		
Gopherus polyphemus	V	U	V	U	V	V	V	V	V	V	V	V	V	V	V	V	V	U
FAMILY TRIONYCHIDAE																		
Apalone ferox	V	V	V	P	V	V	V	V	V	V	V	V	P	V	V	P	P	V
Apalone mutica																V		
Apalone spinifera		V	V				V					P				V		V

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ORDER CROCODYLIA																		
FAMILY ALLIGATORIDAE																		
Alligator mississippiensis	V	V	U	U	V	V	U	V	V	V	V	V	U	U	V	V	U	V
Caiman crocodilus*					V	U												
FAMILY CROCODYLIDAE																		
Crocodylus acutus					P	V		U			V							
ORDER SQUAMATA																		
SUBORDER SAURIA																		
FAMILY CORYTOPHANIDAE																		
Basiliscus vittatus*						V					V							
FAMILY IGUANIDAE																		
Ctenosaura pectinata*						V												
Ctenosaura similis*						V		V			V							
Iguana iguana*	V		V			V					V							
FAMILY PHRYNOSOMATIDAE																		
Phrynosoma cornutum*	V														V	V		
Sceloporus undulatus	V	V	V	V			V		V	V		V		V	V	V	P	V
Sceloporus woodi					V	V					V							
FAMILY POLYCHROTIDAE																		
Anolis carolinensis	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V
Anolis chlorocyanus*						V												
Anolis cristatellus*						V												
Anolis cybotes*						V												
Anolis distichus*						V					V							
Anolis equestris*					V	V					V							
Anolis garmani*																		
Anolis porcatus*																		

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Anolis sagrei*	V	V	V	V	V	V		V	V	V	V	V	V	V	V		V	V
Anolis trinitatis*																		
FAMILY TROPIDURIDAE																		
Leiocephalus carinatus*	V				V	V					V				V			
Leiocephalus schreibersii*						V		V										
FAMILY AGAMIDAE																		
Agama agama*						V		V							V			
Calotes sp. cf. versicolor*						V												
Leiolepis bellinana*																		
FAMILY CHAMAELEONIDAE																		
Chamaeleo calyptratus*	V										V							
Furcifer oustaleti*																		
FAMILY SPHAERODACTYLIDAE																		
Gonatodes albogularis*						U												
Sphaerodactylus argus*																		
Sphaerodactylus elegans*																		
Sphaerodactylus notatus						V												
FAMILY GEKKONIDAE																		
Gekko badenii*						V												
Gekko gecko*	V				V	V					U							
Hemidactylus frenatus*						V												
Hemidactylus garnotti*	V	V	V	V	V	V		V	V	V	V		V		V		V	V
Hemidactylus mabouia*	V				V	V		V			V							
Hemidactylus platyurus*	V					V												
Hemidactylus turcicus*	V	V	U	V	U	V		U	V	V	V	V			V	V	V	V
Lepidodactylus lugubris*																		
Phelsuma grandis*						U												

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	<del>  </del>																	
FAMILY PHYLLODACTYLIDAE  Tarentola annularis*						* 7												<del>                                     </del>
Tarentola annutaris*  Tarentola mauritanica*						V												$\vdash$
						V												
FAMILY TEIIDAE  Ameiva ameiva*																		
						V					V							
Aspidoscelis motaguae*	<u> </u>																	
Aspidoscelis sexlineata	V	V	V	V	V	V	V	V	V	V	V	V	P	V	V	V	V	V
"Cnemidophorus" lemniscatus*																		
Tupinambis merianae*			V					V										
FAMILY SCINCIDAE																		
Chalcides ocellatus*						V												
Eutropis multifasciata*																		
Plestiodon anthracinus			V				P									P		V
Plestiodon egregius	V		V	P	V	V	V	P	V	V		V		V	V	V	P	V
Plestiodon fasciatus	V		P	U			V		V	V		V		V	P	V		U
Plestiodon inexpectatus	V	V	P	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V
Plestiodon laticeps	V	V	V	V	V		V		V	V		V		V	V	V	P	V
Plestiodon reynoldsi																		
Scincella lateralis	V	V	V	V	V	V	V	U	V	V	V	V	V	V	V	V	P	V
Trachylepis quinquetaeniata*																		
FAMILY ANGUIDAE																		
Ophisaurus attenuatus	V	V	V	Р	V		V	V	V	P	V	P		V	V	V	P	P
Ophisaurus compressus	V	V		P	V	V		V	V	P	V	V	V	V	V		V	V
Ophisaurus mimicus			V				P								V	P		V
Ophisaurus ventralis	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V
FAMILY VARANIDAE		,	, ·				i i	i i	<u> </u>	, ·	i i	,	•	† †	†	<u> </u>		
Varanus niloticus*	U					V					U		U					
varanus muoneus.	1 U					V					U		U					ı

Scientific Name	Alachua	Baker	Bay	Bradford	Brevard	Broward	Calhoun	Charlotte	Citrus	Clay	Collier	Columbia	DeSoto	Dixie	Duval	Escambia	Flagler	Franklin
SUBORDER AMPHISBAENIA																		
FAMILY RHINEURIDAE																		
Rhineura floridana	V			P					V	V		V		V			V	
SUBORDER SERPENTES																		
FAMILY ACROCHORDIDAE																		
Acrochordus javanicus*						V												
FAMILY BOIDAE																		
Boa constrictor*	V				V	V		V			V				V			
FAMILY PYTHONIDAE																		
Python bivittatus*	V					V					V				V			
Python sebae*																		
FAMILY COLUBRIDAE																		
Carphophis amoenus																		
Cemophora coccinea	V	V	V	V	V	V	V	V	V	V	V	V	P	V	V	V	P	V
Coluber constrictor	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V
Diadophis punctatus	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V
Drymarchon couperi	V	U	U	V	V	V	U	V	V	V	V	V	V	V	V	U	U	U
Farancia abacura	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V
Farancia erytrogramma	V	V	P	P			V			V		V		V	V	V	P	V
Heterodon platirhinos	V	U	V	V	V	V	V	P	V	V	V	V	P	V	V	V	V	U
Heterodon simus	V		P	P	V		V		V	P		V		V	V	V		V
Lampropeltis calligaster			V		V		V	V					V			V		V
Lampropeltis elapsoides	V	P	P	V	V	V	V	P	V	P	V	V	V	V	V	V	V	V
Lampropeltis extenuata	V								V			V		P				
Lampropeltis getula complex	V	V	V	V	V	V	V	V	V	P	V	V	V	V	V	V	P	V
Masticophis flagellum	V	P	V	V	V	V	P	V	V	V	V	V	P	V	V	V	V	V

Scientific Name	Alachua	Baker	Bay	Bradford	Brevard	Broward	Calhoun	Charlotte	Citrus	Clay	Collier	Columbia	DeSoto	Dixie	Duval	Escambia	Flagler	Franklin
Nerodia clarkii			U		V	V		V	V		V			V		V		V
Nerodia cyclopion																V		
Nerodia erythrogaster	V		P				V					V		P		V		U
Nerodia fasciata	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V
Nerodia floridana	V	V	P	V	V	V	P	V	V	V	V	V	P	P	P		P	U
Nerodia rhombifer																P		
Nerodia sipedon			P													P		
Nerodia taxispilota	V	P	V	V	P	V	V	V	V	V	V	V	P	V	V	V	V	V
Opheodrys aestivus	V	V	V	V	V	V	P	V	V	V	V	V	P	V	V	V	V	V
Pantherophis alleghaniensis and spiloides	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V
Pantherophis guttatus	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V
Pituophis melanoleucus	V	P	V	V	V	P	V	V	V	V	P	V	P	V	V	V	P	V
Regina alleni	V	P		P	V	V		V	V	V	V	P	P	V	V		V	V
Regina rigida	V	V	P	V	V		V		V	P		V		V	V	V	P	V
Regina septemvittata			P				V									P		P
Rhadinaea flavilata	V	V	V	V	V	V	P	P	P	V		V	P	V	V	P	V	P
Seminatrix pygaea	V	V	P	V	V	V	P	V	V	V	V	V	V	V	V		V	V
Storeria dekayi			P				P									V		V
Storeria occipitomaculata	V	V	V	P			V		V	V		V		V	V	V	V	V
Storeria victa	V	P		V	V	V		V	V	P	V	P	P	P	V	V	P	
Tantilla coronata			V				V									V		U
Tantilla oolitica																		
Tantilla relicta	V			V	V	P		V	V	V	V	V						
Thamnophis sauritus	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V
Thamnophis sirtalis	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V
Virginia striatula	V	V	V	V			V			P		V		P	U	P		V
Virginia valeriae	V		V	P			V					P				V		P

Scientific Name	Alachua	Baker	Bay	Bradford	Brevard	Broward	Calhoun	Charlotte	Citrus	Clay	Collier	Columbia	DeSoto	Dixie	Duval	Escambia	Flagler	Franklin
FAMILY ELAPIDAE																		
Micrurus fulvius	V	U	V	V	V	V	V	P	V	V	V	V	V	V	V	V	V	V
FAMILY CROTALIDAE																		
Agkistrodon contortrix							V									V		
Agkistrodon piscivorus	V	V	U	V	P	P	V	V	V	P	V	V	V	V	V	V	V	V
Crotalus adamanteus	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V
Crotalus horridus	V	V		V						P		V		V	V			
Sistrurus miliarius	V	V	V	V	V	P	V	V	V	V	V	V	V	V	V	V	V	V
FAMILY TYPHLOPIDAE																		
Ramphotyphlops braminus*	V				V	V		V	V		V					V		

Scientific Name	Gadsden	Gilchrist	Glades	Gulf	Hamilton	Hardee	Hendry	Hernando	Highlands	Hillsborough	Holmes	Indian River	Jackson	Jefferson	Lafayette	Lake	Lee	Leon
ORDER CAUDATA																		
FAMILY SIRENIDAE																		
Pseudobranchus axanthus			V			V	V	V	V	V		V				P	P	
Pseudobranchus striatus	P	V		P	P			V			V		V	V	P			V
Siren intermedia complex	V	V	V	V	P	P	P	V	V	V	V	P	V	V	P	V		V
Siren lacertina complex	V	P	V	V	V	V	V	V	V	V	V	V	V	V	P	V	V	V
FAMILY PROTEIDAE																		
Necturus sp. cf. beyeri	V			V							V		V					V
FAMILY SALAMANDRIDAE																		
Notophthalmus perstriatus		V														V		V
Notophthalmus viridescens	V	V	V	V	U	P	V	V	V	V	V	V	V	V	P	V	P	V
FAMILY AMBYSTOMATIDAE																		
Ambystoma bishopi				V							V		V					
Ambystoma cingulatum														V				
Ambystoma opacum	V	P		V	P					U	V		V	V	V			V
Ambystoma talpoideum	U	U		V	P						P		V	V	P			V
Ambystoma tigrinum	P	V			P			V		P	P		V	V	P			V
FAMILY PLETHODONTIDAE																		
Desmognathus apalachicolae	V			V														V
Desmognathus auriculatus	V	P		V	P			P		V	V		V	V	P	V		V
Desmognathus cf. conanti											V							
Desmognathus monticola																		
Eurycea cirrigera	V			V							V		V	V				V
Eurycea guttolineata	V			P							V		V					V
Eurycea quadridigitata complex	V	V	V	V	U	U	V	U	V	V	V	V	V	V	P	V	P	V
Eurycea wallacei	* 7		-		-				-				V					17
Hemidactylium scutatum	V																	V

Scientific Name	Gadsden	Gilchrist	Glades	Gulf	Hamilton	Hardee	Hendry	Hernando	Highlands	Hillsborough	Holmes	Indian River	Jackson	Jefferson	Lafayette	Lake	Lee	Leon
Plethodon grobmani	V	Р		V	V			V		V	V		V	V	Р	V		V
Pseudotriton montanus	V			P	P						P		V	V		V		V
Pseudotriton ruber	V			V	V						V		V					V
Stereochilus marginatus																		
FAMILY AMPHIUMIDAE																		
Amphiuma means	V	Р	V	V	V	V	V	V	V	V	V	V	V	V	Р	V	V	V
Amphiuma pholeter	V			P				V			P		V	V				V
ORDER ANURA																		
FAMILY SCAPHIOPODIDAE																		
Scaphiopus holbrookii	V	V	P	P	U	V	P	V	V	V	V	V	V	V	V	V	P	V
FAMILY RANIDAE																		
Lithobates capito	P	V	V	V	U	U		V	V	V	P	V	P	V	P	V	P	V
Lithobates catesbeianus	V	V	V	V	V	V		V	V	V	V		V	V	V	V		V
Lithobates clamitans	V	V		V	V			P		V	V		V	V	P	V		V
Lithobates grylio	V	P	V	V	V	V	V	V	V	V	V	V	V	V	P	V	V	V
Lithobates heckscheri	V	V		V	V						V		V	P				V
Lithobates okaloosae																		
Lithobates palustris																		
Lithobates sphenocephalus	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V
Lithobates virgatipes																		
FAMILY MICROHYLIDAE																		
Gastrophryne carolinensis	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V
FAMILY BUFONIDAE																		
Anaxyrus fowleri	V			P	V						V		V					V
Anaxyrus quercicus	P	V	V	V	V	V	P	V	V	V	V	V	V	V	V	V	V	V
Anaxyrus terrestris	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V
Rhinella marina*							U		V	V							V	

Scientific Name	Gadsden	Gilchrist	Glades	Gulf	Hamilton	Hardee	Hendry	Hernando	Highlands	Hillsborough	Holmes	Indian River	Jackson	Jefferson	Lafayette	Lake	Lee	Leon
FAMILY ELEUTHERODACTYLIDAE																		
Eleutherodactylus planirostris*	U	V	V			V	V	U	V	V		V				V	V	V
FAMILY HYLIDAE																		
Acris crepitans	V			P							P		V	V				V
Acris gryllus	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V
Hyla andersonii											V							
Hyla avivoca	V			V							P		V					V
Hyla chrysoscelis	V	V		U	V			V			P		V	V	V			V
Hyla cinerea	V	V	V	V	V	V	V	V	V	V	V	V	V	V	P	V	V	V
Hyla femoralis	U	V	V	V	V	V	P	U	V	V	V	V	V	V	V	V	V	V
Hyla gratiosa	V	V	V	P	V	U	V	V	V	V	V	V	V	V	V	V	V	V
Hyla squirella	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V
Osteopilus septentrionalis*	V		V			V	V	V	V	V		V				V	V	U
Pseudacris crucifer	V	P		U	U			P			P		V	V	V	V		V
Pseudacris feriarum	V			V									V					
Pseudacris nigrita	V	P	V	V	V	U	V	P	V	V	P	P	V	V	V	V	V	V
Pseudacris ocularis	V	V	V	V	V	V	V	U	V	V	V	V	V	V	P	V	V	V
Pseudacris ornata	V	P		P	P						V		V	V	P	V		V
ORDER TESTUDINES																		
FAMILY CHELONIIDAE																		
Caretta caretta				U				U		V		V		P			V	
Chelonia mydas				V				P		P		P		P			P	
Eretmochelys imbricata				U				P		U		V		P			U	
Lepidochelys kempii				V				U		P		P		P			V	
Lepidochelys olivacea																		
FAMILY DERMOCHELIDAE																		
Dermochelys coriacea				V				P		P		V		P			U	

Scientific Name	Gadsden	Gilchrist	Glades	Gulf	Hamilton	Hardee	Hendry	Hernando	Highlands	Hillsborough	Holmes	Indian River	Jackson	Jefferson	Lafayette	Lake	Lee	Leon
FAMILY CHELYDRIDAE																		
Chelydra serpentina	V	P	V	V	U	V	V	V	V	V	P	V	V	V	V	V	V	V
Macrochelys temminckii complex	V	P		V	V						P		V	U	V			V
FAMILY KINOSTERNIDAE																		
Kinosternon baurii	P	V	V	V	V	V	V	V	V	V		V	V	V	V	V	V	V
Kinosternon subrubrum	V	V	V	V	V	P	V	V	V	V	V	V	V	V	V	V	V	V
Sternotherus minor	V	V		V	V			V			V		V	V	V	V		V
Sternotherus odoratus	V	V	V	V	P	V	P	V	V	V	V	V	V	V	P	V	V	V
FAMILY EMYDIDAE																		
Chrysemys dorsalis*																		
Clemmys guttata					V									U	V	P		
Deirochelys reticularia	V	V	V	V	V	V	V	V	V	V	V	V	V	V	P	V	V	V
Graptemys barbouri	V			V							V		V	V				V
Graptemys ernsti											V							
Graptemys pseudogeographica*		V																
Malaclemys terrapin				V				V		V		V					V	
Pseudemys concinna	V	V		V	U			V		V	V		V	V	P	V		V
Pseudemys floridana	V	V	V	V	P	P	V	V	V	V	V	V	V	V	V	V	V	V
Pseudemys nelsoni	P	V	V	V	V	P	V	V	V	V	V	V	V	V	P	V	P	V
Terrapene carolina	V	V	V	V	V	P	V	V	V	V	V	V	V	V	V	V	V	V
Trachemys scripta elegans*	V	V														V		V
Trachemys scripta scripta	V	V		V	V						V		V	V	V			V
FAMILY TESTUDINIDAE																		
Gopherus polyphemus	V	V	V	V	V	V	U	V	V	V	V	V	U	V	V	V	V	V
FAMILY TRIONYCHIDAE																		
Apalone ferox	V	V	V	P	P	V	V	V	V	V	V	V	V	V	V	V	V	V
Apalone mutica																		
Apalone spinifera	V			P	P						V		V					V

Scientific Name	Gadsden	Gilchrist	Glades	Gulf	Hamilton	Hardee	Hendry	Hernando	Highlands	Hillsborough	Holmes	Indian River	Jackson	Jefferson	Lafayette	Lake	Lee	Leon
ORDER CROCODYLIA																		
FAMILY ALLIGATORIDAE																		
Alligator mississippiensis	U	V	V	U	U	U	V	V	V	V	U	V	U	V	U	V	V	V
Caiman crocodilus*																	V	
FAMILY CROCODYLIDAE																		
Crocodylus acutus			V							P		U					V	
ORDER SQUAMATA																		
SUBORDER SAURIA																		
FAMILY CORYTOPHANIDAE																		
Basiliscus vittatus*							V					V					V	
FAMILY IGUANIDAE																		
Ctenosaura pectinata*																		
Ctenosaura similis*																	V	
Iguana iguana*							V		U	U		U					V	
FAMILY PHRYNOSOMATIDAE																		
Phrynosoma cornutum*												U				V		
Sceloporus undulatus	V	V		V	V	V		V		V	V		V	V	V	V		V
Sceloporus woodi									V			V				V	V	
FAMILY POLYCHROTIDAE																		
Anolis carolinensis	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V
Anolis chlorocyanus*																		
Anolis cristatellus*																		
Anolis cybotes*																		
Anolis distichus*																	U	
Anolis equestris*									V								V	
Anolis garmani*																	U	
Anolis porcatus*																		

Scientific Name	Gadsden	Gilchrist	Glades	Gulf	Hamilton	Hardee	Hendry	Hernando	Highlands	Hillsborough	Holmes	Indian River	Jackson	Jefferson	Lafayette	Lake	Lee	Leon
Anolis sagrei*		V	V	V	V	V	V	V	V			V				V	V	V
Anolis trinitatis*			•	•		•	•	•				•						
FAMILY TROPIDURIDAE																		
Leiocephalus carinatus*									V								V	
Leiocephalus schreibersii*																		
FAMILY AGAMIDAE																		
Agama agama*										V							V	
Calotes sp. cf. versicolor*																		
Leiolepis bellinana*																		
FAMILY CHAMAELEONIDAE																		
Chamaeleo calyptratus*							V										V	
Furcifer oustaleti*																		
FAMILY SPHAERODACTYLIDAE																		
Gonatodes albogularis*																		
Sphaerodactylus argus*																		
Sphaerodactylus elegans*																		
Sphaerodactylus notatus																		
FAMILY GEKKONIDAE																		
Gekko badenii*																		
Gekko gecko*			V					V	U	V							V	V
Hemidactylus frenatus*																	V	
Hemidactylus garnotti*			V			V	V	V	V	V		V				V	V	
Hemidactylus mabouia*			V				V		V	V		V					V	
Hemidactylus platyurus*																	V	
Hemidactylus turcicus*			V			V		V	V	V		V				V	V	V
Lepidodactylus lugubris*																		
Phelsuma grandis*																	U	

	Gadsden	Gilchrist	Glades	Gulf	Hamilton	Hardee	Hendry	Hernando	Highlands	Hillsborough	Holmes	Indian River	Jackson	Jefferson	Lafayette	Lake	Lee	Leon
Scientific Name		0	0	0	F	H	I	H	E	F	I	I	J	J	T	T	I	Τ
FAMILY PHYLLODACTYLIDAE																		
Tarentola annularis*																	V	U
Tarentola mauritanica*																		
FAMILY TEIIDAE																		
Ameiva ameiva*																		
Aspidoscelis motaguae*																		
Aspidoscelis sexlineata	U	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V
"Cnemidophorus" lemniscatus*																		
Tupinambis merianae*										V							V	
FAMILY SCINCIDAE																		
Chalcides ocellatus*																		
Eutropis multifasciata*																		
Plestiodon anthracinus				V							V							
Plestiodon egregius	U	V			P			V	V	V	P	V	V	V	V	V		V
Plestiodon fasciatus	V	V		V	V			V			V		V	V	P	P		V
Plestiodon inexpectatus	U	V	V	V	V	V	V	V	V	V	P	V	V	V	V	V	V	V
Plestiodon laticeps	V	V		V	V			V			V		V	V	V	V		V
Plestiodon reynoldsi									V							V		
Scincella lateralis	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V
Trachylepis quinquetaeniata*																		
FAMILY ANGUIDAE																		
Ophisaurus attenuatus	P	V		P	P			V	V	V	P		P	V	V	V		V
Ophisaurus compressus		P	V	V	P	P	V	P	V	V		V		P	P	V	V	
Ophisaurus mimicus				P							P		P					
Ophisaurus ventralis	V	V	V	V	V	V	V	U	V	V	V	V	V	V	V	V	V	V
FAMILY VARANIDAE					-													
Varanus niloticus*																	V	

Scientific Name	Gadsden	Gilchrist	Glades	Gulf	Hamilton	Hardee	Hendry	Hernando	Highlands	Hillsborough	Holmes	Indian River	Jackson	Jefferson	Lafayette	Lake	Lee	Leon
SUBORDER AMPHISBAENIA																		
FAMILY RHINEURIDAE																		
Rhineura floridana		V			V			V	V	V					V	V		
SUBORDER SERPENTES																		
FAMILY ACROCHORDIDAE																		
Acrochordus javanicus*																		
FAMILY BOIDAE																		
Boa constrictor*		V						V	V									V
FAMILY PYTHONIDAE																		
Python bivittatus*							V			V								
Python sebae*																		
FAMILY COLUBRIDAE																		
Carphophis amoenus																		
Cemophora coccinea	V	P	V	V	P	V	V	V	V	V	P	V	V	V	V	V	V	V
Coluber constrictor	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V
Diadophis punctatus	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V
Drymarchon couperi	U	V	V	U	U	V	V	V	V	V	U	V	U	V	U	V	V	V
Farancia abacura	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V
Farancia erytrogramma	V	V	V	V	P						P		V	P	P	V		V
Heterodon platirhinos	V	V	V	V	V	V	V	V	V	V	V	V	V	V	P	V	V	V
Heterodon simus	V	V		P	P		V	V		V	V	V	V	V	V	V		V
Lampropeltis calligaster			P	V		P						P						
Lampropeltis elapsoides	U	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V
Lampropeltis extenuata		V						V	V	V						V		
Lampropeltis getula complex	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V
Masticophis flagellum	V	V	V	V	P	P	P	V	V	V	P	V	V	V	V	V	V	V

Scientific Name	Gadsden	Gilchrist	Glades	Gulf	Hamilton	Hardee	Hendry	Hernando	Highlands	Hillsborough	Holmes	Indian River	Jackson	Jefferson	Lafayette	Lake	Lee	Leon
Nerodia clarkii				V				V		V		V					V	
Nerodia cyclopion																		
Nerodia erythrogaster	V	V		V	V						V		V		V			V
Nerodia fasciata	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V
Nerodia floridana	P	V	V	V	U	V	V	V	V	V	P	V	V	V	V	V	V	V
Nerodia rhombifer																		
Nerodia sipedon											V		P					
Nerodia taxispilota	V	V	V	V	V	V	V	P	V	V	V	V	V	V	V	V	V	V
Opheodrys aestivus	U	V	V	V	V	P	V	V	V	V	V	V	V	V	P	V	V	V
Pantherophis alleghaniensis and spiloides	v	V	V	V	V	V	V	V	V	V	V	V	v	v	V	V	V	V
Pantherophis guttatus	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V
Pituophis melanoleucus	V	V	U	P	U	P	P	V	V	V	V	V	V	P	V	V	V	V
Regina alleni		V	V		P	V	V	V	V	V		V		V	P	V	V	V
Regina rigida	U	P		V	P			V			V		V	U	V	V		V
Regina septemvittata	V			P							V		V					P
Rhadinaea flavilata	P	P	V	V	V	P	P	V	V	V	P	V	P	V	V	P		P
Seminatrix pygaea	P	V	V	V	V	V	V	V	V	V	V	V	V	P	P	V	V	V
Storeria dekayi	P			V							P		V	U				V
Storeria occipitomaculata	V	P		P	U			V			P		V	V	V	P		V
Storeria victa		P	V			V	V	V	V	V		V				V	V	
Tantilla coronata	P			P							P		V					V
Tantilla oolitica																		
Tantilla relicta		V	V		V	V		V	V	V		V			V	V	V	
Thamnophis sauritus	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V
Thamnophis sirtalis	V	V	V	V	U	V	V	V	V	V	P	V	P	V	V	V	V	V
Virginia striatula	P	P		V	P						V		P	P	P			V
Virginia valeriae	V	P		P	P				V		V		V	V	V			V

Scientific Name	Gadsden	Gilchrist	Glades	Gulf	Hamilton	Hardee	Hendry	Hernando	Highlands	Hillsborough	Holmes	Indian River	Jackson	Jefferson	Lafayette	Lake	Lee	Leon
FAMILY ELAPIDAE																		
Micrurus fulvius	U	V	P	V	P	V	V	V	V	V	P	V	V	V	V	V	V	V
FAMILY CROTALIDAE																		
Agkistrodon contortrix	V										P		V					
Agkistrodon piscivorus	V	P	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V
Crotalus adamanteus	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V
Crotalus horridus	U				V						P							V
Sistrurus miliarius	V	P	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V
FAMILY TYPHLOPIDAE																		
Ramphotyphlops braminus*							V	V	V	V						V	V	V

Scientific Name	Levy	Liberty	Madison	Manatee	Marion	Martin	Miami-Dade	Monroe	Nassau	Okaloosa	Okeechobee	Orange	Osceola	Palm Beach	Pasco	Pinellas	Polk	Putnam
ORDER CAUDATA																		
FAMILY SIRENIDAE																		
Pseudobranchus axanthus	P			V	V	P	V	V			V	V	V	P	V	P	V	V
Pseudobranchus striatus	V	V	V		V				P	P					P		P	V
Siren intermedia complex	V	V	P	P	V	V			V	V	P	V	P	V	V	V	V	V
Siren lacertina complex	V	V	V	V	V	P	V	V	P	V	V	V	P	V	V	V	V	V
FAMILY PROTEIDAE																		
Necturus sp. cf. beyeri		V								V								
FAMILY SALAMANDRIDAE																		
Notophthalmus perstriatus	V				V				P			V						V
Notophthalmus viridescens	V	V	V	P	V	P	V	V	V	V	V	V	V	V	V	V	V	V
FAMILY AMBYSTOMATIDAE																		
Ambystoma bishopi										V								
Ambystoma cingulatum		V			U													
Ambystoma opacum		V	V							V						V		
Ambystoma talpoideum	V	V	V		V				V	V								P
Ambystoma tigrinum	V	P	V		V					V								
FAMILY PLETHODONTIDAE																		
Desmognathus apalachicolae		V																
Desmognathus auriculatus	V	V	V		V				V	V		V			P		V	V
Desmognathus cf. conanti										V								
Desmognathus monticola																		
Eurycea cirrigera		V	P							V								
Eurycea guttolineata		V								V								
Eurycea quadridigitata complex	V	V	V	V	V	P	V	P	V	V	V	V	P	V	P	V	V	V
Eurycea wallacei																		
Hemidactylium scutatum																		

Scientific Name	Levy	Liberty	Madison	Manatee	Marion	Martin	Miami-Dade	Monroe	Nassau	Okaloosa	Okeechobee	Orange	Osceola	Palm Beach	Pasco	Pinellas	Polk	Putnam
Plethodon grobmani	V	V	V	V	V				V	V		V			P	V	V	V
Pseudotriton montanus		V	P		V				V	V		V						V
Pseudotriton ruber		V								V								·
Stereochilus marginatus									V									
FAMILY AMPHIUMIDAE									,									
Amphiuma means	V	V	V	V	V	V	V	V	V	V	V	V	V	V	Р	V	V	V
Amphiuma pholeter	V	V	,		,	,	i i	,	,	V	,	•	,	,		•		
r ····· r	<b>'</b>	,								,								
ORDER ANURA																		
FAMILY SCAPHIOPODIDAE																		
Scaphiopus holbrookii	V	V	V	V	V	V	V	V	V	V	P	V	P	V	V	V	V	V
FAMILY RANIDAE																		
Lithobates capito	V	P	P	V	V	V			V	V	V	V	V	V	V	V	V	V
Lithobates catesbeianus	V	V	V	V	V				P	V	V	V	V		V	V	V	V
Lithobates clamitans	V	V	P		V				V	V		V			P			V
Lithobates grylio	V	V	V	P	V	V	V	V	V	V	V	V	V	V	V	V	V	V
Lithobates heckscheri		V	V		V				V	V								V
Lithobates okaloosae										V								
Lithobates palustris																		
Lithobates sphenocephalus	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V
Lithobates virgatipes																		
FAMILY MICROHYLIDAE																		
Gastrophryne carolinensis	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V
FAMILY BUFONIDAE																		
Anaxyrus fowleri		V					V			V								
Anaxyrus quercicus	V	V	U	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V
Anaxyrus terrestris	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V
Rhinella marina*						V	V	V			V	V		V	V	V	V	1

Scientific Name	Levy	Liberty	Madison	Manatee	Marion	Martin	Miami-Dade	Monroe	Nassau	Okaloosa	Okeechobee	Orange	Osceola	Palm Beach	Pasco	Pinellas	Polk	Putnam
FAMILY ELEUTHERODACTYLIDAE																		
Eleutherodactylus planirostris*	V			V	V	V	V	V	V	V	V	V	V	V	V	V	V	V
FAMILY HYLIDAE																		
Acris crepitans		V								V								
Acris gryllus	V	V	V	P	V	V	V	V	V	V	V	V	V	V	V	V	V	V
Hyla andersonii										V								
Hyla avivoca		V								V								
Hyla chrysoscelis	V	V	V		V				V	V								U
Hyla cinerea	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V
Hyla femoralis	V	V	V	P	V	V	V	P	V	V	V	V	V	V	V	V	V	V
Hyla gratiosa	V	V	V	P	V	V			V	V	V	V	V	V	V	V	V	V
Hyla squirella	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V
Osteopilus septentrionalis*	V			V	V	V	V	V	V		V	V	V	V	V	V	V	V
Pseudacris crucifer	V	V	V		V				V	V		V						V
Pseudacris feriarum		V								V								
Pseudacris nigrita	V	V	P	P	V	V	V	P	V	V	V	V	V	V	V	V	V	V
Pseudacris ocularis	V	V	P	V	V	V	V	V	V	V	V	V	V	V	P	V	V	V
Pseudacris ornata	V	V	V		V				V	V								V
ORDER TESTUDINES																		
FAMILY CHELONIIDAE																		
Caretta caretta	U			V		V	V	V	U	V				V	U	V		
Chelonia mydas	V			P		V	P	V	P	V				V	P	P		
Eretmochelys imbricata	V			U		V	V	V	U	U				V	P	V		
Lepidochelys kempii	V			P		P	P	V	P	V				P	U	V		
Lepidochelys olivacea							U	V										
FAMILY DERMOCHELIDAE																		
Dermochelys coriacea	P			U		V	V	V	V	U				V	P	U		

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FAMILY CHELYDRIDAE																		
Chelydra serpentina	V	V	V	V	V	P	V	V	V	V	V	V	V	V	V	V	V	V
Macrochelys temminckii complex	V	V	P		V					V								
FAMILY KINOSTERNIDAE																		
Kinosternon baurii	V	V	P	V	V	V	V	V	P		V	V	V	V	V	V	V	V
Kinosternon subrubrum	V	V	V	V	V	V	V	V	V	V	V	V	V	V	P	V	V	V
Sternotherus minor	V	V	V		V				V	V		V	V			V		V
Sternotherus odoratus	V	V	V	P	V	V	V	V	V	P	V	V	V	V	V	V	V	V
FAMILY EMYDIDAE																		
Chrysemys dorsalis*							V											
Clemmys guttata			P		V				U			U					V	V
Deirochelys reticularia	V	V	V	V	V	P	V	V	V	V	V	V	V	V	V	V	V	V
Graptemys barbouri		V																
Graptemys ernsti										V								
Graptemys pseudogeographica*							V											
Malaclemys terrapin	V			V		P	V	V	V	V				V	V	V		
Pseudemys concinna	V	V	P		V					V					P			V
Pseudemys floridana	V	V	V	V	V	P	V	V	V	V	V	V	V	V	V	V	V	V
Pseudemys nelsoni	V	P	P	P	V	P	V	V	P		V	V	P	V	V	V	V	V
Terrapene carolina	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V
Trachemys scripta elegans*				V	V		V	V				V		V		V	V	V
Trachemys scripta scripta	V	V	V		P		V		V	V								P
FAMILY TESTUDINIDAE																		
Gopherus polyphemus	V	V	V	V	V	V	V	V	V	V	V	V	U	V	V	V	V	V
FAMILY TRIONYCHIDAE																		
Apalone ferox	V	V	V	V	V	V	V	V	P	V	V	V	V	V	V	V	V	V
Apalone mutica																		
Apalone spinifera		V	P				V		V	V								

Scientific Name	Levy	Liberty	Madison	Manatee	Marion	Martin	Miami-Dade	Monroe	Nassau	Okaloosa	Okeechobee	Orange	Osceola	Palm Beach	Pasco	Pinellas	Polk	Putnam
ORDER CROCODYLIA																		
FAMILY ALLIGATORIDAE																		
Alligator mississippiensis	V	V	P	U	V	U	V	V	U	U	V	V	V	V	V	V	V	V
Caiman crocodilus*							V	V						U				
FAMILY CROCODYLIDAE																		
Crocodylus acutus				P		P	V	V						V		V		
ORDER SQUAMATA																		
SUBORDER SAURIA																		
FAMILY CORYTOPHANIDAE																		
Basiliscus vittatus*						V	V							V				
FAMILY IGUANIDAE																		
Ctenosaura pectinata*							V											
Ctenosaura similis*				V		V	V	V										
Iguana iguana*						V	V	V						V	V			
FAMILY PHRYNOSOMATIDAE																		
Phrynosoma cornutum*	V				U		U			V		U		V			V	U
Sceloporus undulatus	V	V	V	V	V				V	V	V	V	P		V	V	V	V
Sceloporus woodi					V	V	V					V	V	V			V	V
FAMILY POLYCHROTIDAE																		
Anolis carolinensis	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V
Anolis chlorocyanus*						U								V				
Anolis cristatellus*							V											
Anolis cybotes*						V	V											
Anolis distichus*						U	V	V						V				
Anolis equestris*						V	V	V				U		V			V	
Anolis garmani*						U	V											
Anolis porcatus*																		

Scientific Name	Levy	Liberty	Madison	Manatee	Marion	Martin	Miami-Dade	Monroe	Nassau	Okaloosa	Okeechobee	Orange	Osceola	Palm Beach	Pasco	Pinellas	Polk	Putnam
Anolis sagrei*	V			V	V	V	V	V	V	V	V	V	V	V	V	V	V	V
Anolis trinitatis*							V											
FAMILY TROPIDURIDAE																		
Leiocephalus carinatus*						V	V	V				V	V	V	V	V		
Leiocephalus schreibersii*							V											
FAMILY AGAMIDAE																		
Agama agama*						V	V	V										
Calotes sp. cf. versicolor*																		
Leiolepis bellinana*							V											
FAMILY CHAMAELEONIDAE																		
Chamaeleo calyptratus*																		
Furcifer oustaleti*							V											
FAMILY SPHAERODACTYLIDAE																		
Gonatodes albogularis*							V	V										
Sphaerodactylus argus*								V										
Sphaerodactylus elegans*								V										
Sphaerodactylus notatus							V	V										
FAMILY GEKKONIDAE																		
Gekko badenii*																		
Gekko gecko*						U	V	V						U		V	V	
Hemidactylus frenatus*							V	V										
Hemidactylus garnotti*	V			V	V	V	V	V			V	V	V	V	V	V	V	V
Hemidactylus mabouia*						V	V	V			V	V	V	V		V	V	
Hemidactylus platyurus*							V									V		
Hemidactylus turcicus*	V				V	U	V	V		V	U	V	V		V	V	V	V
Lepidodactylus lugubris*																		
Phelsuma grandis*								V						V				

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FAMILY PHYLLODACTYLIDAE																		
Tarentola annularis*							V											
Tarentola mauritanica*																		
FAMILY TEIIDAE																		
Ameiva ameiva*							V	V										
Aspidoscelis motaguae*							V											
Aspidoscelis sexlineata	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V
"Cnemidophorus" lemniscatus*							V											
Tupinambis merianae*					V		V				V	V		V		V	V	
FAMILY SCINCIDAE																		
Chalcides ocellatus*															V			
Eutropis multifasciata*							V											
Plestiodon anthracinus		V								V								
Plestiodon egregius	V	U	V	P	V	V	V	V	V	V	V	V	V	V	V	V	V	V
Plestiodon fasciatus	V	V	V		V				P	V		V	P				V	P
Plestiodon inexpectatus	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V
Plestiodon laticeps	V	V	V		V				V	V		V			V		V	V
Plestiodon reynoldsi					V		V					V	V				V	
Scincella lateralis	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V
Trachylepis quinquetaeniata*																		
FAMILY ANGUIDAE																		
Ophisaurus attenuatus	V	V	P	V	V		V		P	V		V			V	V	V	V
Ophisaurus compressus	V			V	V	V	V	V	P		V	V	V	V	V	V	V	V
Ophisaurus mimicus		V								V								
Ophisaurus ventralis	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V
FAMILY VARANIDAE																		
Varanus niloticus*							V	V				V	V	V				

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Scientific Name	Levy	Liberty	Madison	Manatee	Marion	Martin	Miami-Dade	Monroe	Nassau	Okaloosa	Okeechobee	Orange	Osceola	Palm Beach	Pasco	Pinellas	Polk	Putnam
SUBORDER AMPHISBAENIA																		
FAMILY RHINEURIDAE																		
Rhineura floridana	V	V	V	V	V							V	V		V	V	V	V
SUBORDER SERPENTES	<u> </u>	,	,	,	•							•	•		•		•	<u> </u>
FAMILY ACROCHORDIDAE																		
Acrochordus javanicus*																		
FAMILY BOIDAE																		
Boa constrictor*							V	V						V		V		
FAMILY PYTHONIDAE																		
Python bivittatus*				V			V	V			V			V				
Python sebae*							V											
FAMILY COLUBRIDAE																		
Carphophis amoenus																V		
Cemophora coccinea	V	V	V	V	V	V	V	V	V	V	P	V	V	V	V	V	V	V
Coluber constrictor	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V
Diadophis punctatus	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V
Drymarchon couperi	V	V	V	V	V	V	V	V	U	V	V	V	V	V	V	V	V	V
Farancia abacura	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V
Farancia erytrogramma	P	V	P		V				V	V					P	V		V
Heterodon platirhinos	V	V	V	P	V	V	V	V	V	V	V	V	V	V	V	V	V	V
Heterodon simus	V	V	V		V				P	V		V			V	V		P
Lampropeltis calligaster		V					V			V	V		P					
Lampropeltis elapsoides	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V
Lampropeltis extenuata	V				V							V	P		V	V	V	
Lampropeltis getula complex	V	V	V	V	V	P	V	V	V	V	V	V	V	V	V	V	V	V
Masticophis flagellum	V	V	V	V	V	V	V	V	V	V	P	V	V	V	V	V	V	V

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Nerodia clarkii	V			V		P	V	V						V	V	V		
Nerodia cyclopion																		
Nerodia erythrogaster	V	V	P							V								
Nerodia fasciata	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V
Nerodia floridana	V	V	V	V	V	V	V	V	P	V	V	V	V	V	V	V	V	V
Nerodia rhombifer																		
Nerodia sipedon										V								
Nerodia taxispilota	V	V	P	V	V	P	V	V	V	V	V	V	V	V	P	V	V	V
Opheodrys aestivus	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V
Pantherophis alleghaniensis and spiloides	V	V	v	v	V	V	V	V	V	V	V	V	v	V	v	V	V	v
Pantherophis guttatus	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V
Pituophis melanoleucus	V	V	V	P	V	V	V		V	V	V	V	P	V	V	P	V	V
Regina alleni	V		P	V	V	V	V	V	P		V	V	V	V	V	V	V	V
Regina rigida	U	V	V		V				V	V		V	V					V
Regina septemvittata		V								V								
Rhadinaea flavilata	V	P	V	P	V	V			V	P	V	V	V	V	V	V	V	V
Seminatrix pygaea	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V
Storeria dekayi		V								V								
Storeria occipitomaculata	V	V	V		V				V	V		V			V			V
Storeria victa	V			V	V	V	V	V	P		V	V	V	V	V	V	V	V
Tantilla coronata		P								V								
Tantilla oolitica							V	V										
Tantilla relicta	V		V	P	V	V						V	V	V	V	V	V	V
Thamnophis sauritus	V	V	V	V	V	V	V	V	P	V	V	V	V	V	V	V	V	V
Thamnophis sirtalis	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V
Virginia striatula	P	P	V		P				V	V								P
Virginia valeriae		V	V							V								

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FAMILY ELAPIDAE																		
Micrurus fulvius	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V
FAMILY CROTALIDAE																		
Agkistrodon contortrix		V								V								
Agkistrodon piscivorus	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V
Crotalus adamanteus	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V
Crotalus horridus		U	P		V				V	P								P
Sistrurus miliarius	V	V	V	P	V	V	V	V	V	V	V	V	V	V	V	V	V	V
FAMILY TYPHLOPIDAE																		
Ramphotyphlops braminus*				V			V	V				V		V	V	V	V	

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ORDER CAUDATA													
FAMILY SIRENIDAE													
Pseudobranchus axanthus	P	V		V	V	V				V			
Pseudobranchus striatus	P		V			V	P	V	P	V	V	V	V
Siren intermedia complex	U	P	V	P	V	V	V	V	V	V	V	V	V
Siren lacertina complex	V	P	P	V	V	V	P	V	P	V	V	V	V
FAMILY PROTEIDAE													
Necturus sp. cf. beyeri			V								V	V	V
FAMILY SALAMANDRIDAE													
Notophthalmus perstriatus	V				V	V	P				V		
Notophthalmus viridescens	V	P	V	V	V	V	V	V	V	V	V	V	V
FAMILY AMBYSTOMATIDAE													
Ambystoma bishopi			V									V	V
Ambystoma cingulatum									P		V		
Ambystoma opacum			V				V	U			P	P	P
Ambystoma talpoideum	U		P				P	V	P		V	U	V
Ambystoma tigrinum			V			V	V	V	U		P	P	P
FAMILY PLETHODONTIDAE													
Desmognathus apalachicolae													
Desmognathus auriculatus			V		V	P	V	V	V	V	V	V	V
Desmognathus cf. conanti			V									V	V
Desmognathus monticola													
Eurycea cirrigera			V					P			V	V	V
Eurycea guttolineata			V								V	V	V
Eurycea quadridigitata complex	V	P	V	P	V	V	P	V	V	V	V	V	V
Eurycea wallacei												P	V
Hemidactylium scutatum												V	P

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Plethodon grobmani			V		V	U	V	U	P	V	V	V	V
Pseudotriton montanus			V		V				P		V	V	P
Pseudotriton ruber			V									V	V
Stereochilus marginatus									V				
FAMILY AMPHIUMIDAE													
Amphiuma means	V	V	V	V	V	V	P	V	V	V	V	V	V
Amphiuma pholeter		,	V	•	Ţ		-	v	Ţ	,	V	v	P
r r			,					,			,	,	
ORDER ANURA													
FAMILY SCAPHIOPODIDAE													
Scaphiopus holbrookii	V	V	V	V	V	V	V	V	V	V	V	V	V
FAMILY RANIDAE													
Lithobates capito	U	U	V	V	V	V	U	V	P	V	V	V	U
Lithobates catesbeianus	V		V	P	V	V	V	V	V	V	V	U	V
Lithobates clamitans	V		V		V	P	V	U	V	V	V	V	V
Lithobates grylio	V	V	V	V	V	V	P	V	P	V	V	V	V
Lithobates heckscheri	V		V				P	P	V	V	V	V	V
Lithobates okaloosae			V				1	1	,	,		V	
Lithobates palustris			•									,	
Lithobates sphenocephalus	V	V	V	V	V	V	V	V	V	V	V	V	V
Lithobates virgatipes		,	•	,	,	,		,	,	,	,	,	
FAMILY MICROHYLIDAE													
Gastrophryne carolinensis	V	V	V	V	V	V	V	V	V	V	V	V	V
FAMILY BUFONIDAE													
Anaxyrus fowleri			V				P				P	V	V
Anaxyrus quercicus	V	V	V	V	V	V	V	V	V	V	V	V	V
Anaxyrus terrestris	V	V	V	V	V	V	V	V	V	V	V	V	V
Rhinella marina*		V		U									

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FAMILY ELEUTHERODACTYLIDAE													
Eleutherodactylus planirostris*	V	V		V	V	V				V	V	V	
FAMILY HYLIDAE													
Acris crepitans			V								V	P	P
Acris gryllus	V	V	V	V	V	V	V	V	V	V	V	V	V
Hyla andersonii			V									V	
Hyla avivoca			V								V	V	V
Hyla chrysoscelis			V			V	V	V	P		V	V	V
Hyla cinerea	V	V	V	V	V	V	P	V	V	V	V	V	V
Hyla femoralis	V	P	V	V	V	V	V	V	V	V	V	V	V
Hyla gratiosa	V	V	V	V	V	V	P	V	P	V	V	V	V
Hyla squirella	V	P	V	V	V	V	V	V	V	V	V	V	V
Osteopilus septentrionalis*	V	V		V	V	V				V			U
Pseudacris crucifer	V		V		V	U	P	V	P	V	V	U	P
Pseudacris feriarum													
Pseudacris nigrita	V	V	V	V	V	U	P	V	V	V	V	V	P
Pseudacris ocularis	U	P		V	V	V	P	V	V	V	V	V	V
Pseudacris ornata	V		V				P	V	P		V	V	U
ORDER TESTUDINES													
FAMILY CHELONIIDAE													
Caretta caretta	V	V	V	V				U		V	V	U	
Chelonia mydas	V	V	V	P				P		V	V	U	
Eretmochelys imbricata	V	V	P	V				P		U	P	P	
Lepidochelys kempii	V	P	U	V				V		V	V	U	
Lepidochelys olivacea													
FAMILY DERMOCHELIDAE													
Dermochelys coriacea	V	V	U	U				U		U	P	U	

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Scientific Name	<b>O</b> 1	01	01	01	01	01	01		1				
FAMILY CHELYDRIDAE													
Chelydra serpentina	P	P	V	V	V	V	P	V	P	V	V	V	P
Macrochelys temminckii complex			V				V		V		V	U	V
FAMILY KINOSTERNIDAE													
Kinosternon baurii	V	P		V	V	V	P	V	P	V	V		
Kinosternon subrubrum	V	P	V	V	V	V	V	V	V	V	V	V	V
Sternotherus minor	V		V		V	V	V	V	V	V	V	V	V
Sternotherus odoratus	V	P	V	P	V	V	P	V	V	V	V	V	V
FAMILY EMYDIDAE													
Chrysemys dorsalis*													
Clemmys guttata	V				V		V	V	V	U	V		
Deirochelys reticularia	V	V	V	V	V	V	V	V	V	V	V	V	V
Graptemys barbouri											P	U	V
Graptemys ernsti			V									P	
Graptemys pseudogeographica*													
Malaclemys terrapin	V	P	P	V				V		V	V	P	
Pseudemys concinna			V			U	V	V	P	V	V	V	V
Pseudemys floridana	V	P	V	V	V	V	V	V	P	V	V	V	V
Pseudemys nelsoni	V	P		P	V	V	P	P	P	V	P		
Terrapene carolina	V	V	V	V	V	V	V	V	P	V	V	V	V
Trachemys scripta elegans*	V						V			V			
Trachemys scripta scripta			V				V	V	V		V	V	V
FAMILY TESTUDINIDAE													
Gopherus polyphemus	V	V	V	V	V	V	V	V	U	V	V	V	V
FAMILY TRIONYCHIDAE													
Apalone ferox	V	V	P	V	V	V	V	V	P	V	V	V	V
Apalone mutica			V										
Apalone spinifera			V								V	V	V

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ORDER CROCODYLIA													
FAMILY ALLIGATORIDAE													
Alligator mississippiensis	V	U	V	U	V	V	V	U	U	V	V	U	U
Caiman crocodilus*					U								
FAMILY CROCODYLIDAE													
Crocodylus acutus		P		U									
ORDER SQUAMATA													
SUBORDER SAURIA													
FAMILY CORYTOPHANIDAE													
Basiliscus vittatus*		V											
FAMILY IGUANIDAE													
Ctenosaura pectinata*													
Ctenosaura similis*				V									
Iguana iguana*													
FAMILY PHRYNOSOMATIDAE													
Phrynosoma cornutum*			V										
Sceloporus undulatus	P		V		V	V	V	V	P	V	V	V	V
Sceloporus woodi		V											
FAMILY POLYCHROTIDAE													
Anolis carolinensis	V	V	V	V	V	V	V	V	P	V	V	V	V
Anolis chlorocyanus*													
Anolis cristatellus*													
Anolis cybotes*													
Anolis distichus*													
Anolis equestris*	V	V								U			
Anolis garmani*													
Anolis porcatus*													

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Anolis sagrei*	V	V	V	V	V	V	V	V	V	V		V	
Anolis trinitatis*													
FAMILY TROPIDURIDAE													
Leiocephalus carinatus*		V											
Leiocephalus schreibersii*													
FAMILY AGAMIDAE													
Agama agama*		V			V								
Calotes sp. cf. versicolor*		V											
Leiolepis bellinana*													
FAMILY CHAMAELEONIDAE													
Chamaeleo calyptratus*													
Furcifer oustaleti*													
FAMILY SPHAERODACTYLIDAE													
Gonatodes albogularis*		V											
Sphaerodactylus argus*													
Sphaerodactylus elegans*													
Sphaerodactylus notatus													
FAMILY GEKKONIDAE													
Gekko badenii*													
Gekko gecko*				V						V			
Hemidactylus frenatus*													
Hemidactylus garnotti*	V	V		V	V		V			V			
Hemidactylus mabouia*		V											
Hemidactylus platyurus*													
Hemidactylus turcicus*	V	V			V					V	V	V	
Lepidodactylus lugubris*		V											
Phelsuma grandis*													

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FAMILY PHYLLODACTYLIDAE													
Tarentola annularis*													
Tarentola mauritanica*													
FAMILY TEIIDAE													
Ameiva ameiva*													
Aspidoscelis motaguae*													
Aspidoscelis sexlineata	V	V	V	V	V	V	V	V	V	V	V	V	V
"Cnemidophorus" lemniscatus*													
Tupinambis merianae*													
FAMILY SCINCIDAE													
Chalcides ocellatus*													
Eutropis multifasciata*													
Plestiodon anthracinus			V								P	V	P
Plestiodon egregius	U	V	V	V	V	V	V	V		V	V	V	P
Plestiodon fasciatus			V		V	P	V	U	P	V	V	V	P
Plestiodon inexpectatus	V	V	P	V	V	V	V	V	V	V	V	V	P
Plestiodon laticeps	V		V		V	V	P	V	V	V	V	V	V
Plestiodon reynoldsi													
Scincella lateralis	V	P	V	V	V	V	V	V	V	V	V	V	U
Trachylepis quinquetaeniata*	V												
FAMILY ANGUIDAE													
Ophisaurus attenuatus	V		P	P	P	P	V	P	P	V	V	V	P
Ophisaurus compressus	V	P		V	P	P	P	V	P	V	V		
Ophisaurus mimicus			V								V	V	P
Ophisaurus ventralis	V	P	V	V	V	V	P	V	V	V	V	V	V
FAMILY VARANIDAE													
Varanus niloticus*				V						U			

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SUBORDER AMPHISBAENIA													
FAMILY RHINEURIDAE													
Rhineura floridana	P			V	V	V	V	V	V	V			
SUBORDER SERPENTES FAMILY ACROCHORDIDAE													
Acrochordus javanicus*													
FAMILY BOIDAE													
Boa constrictor*		V		V									V
FAMILY PYTHONIDAE													,
Python bivittatus*				V	V								
Python sebae*				V									
FAMILY COLUBRIDAE													
Carphophis amoenus										U			
Cemophora coccinea	V	P	V	V	V	V	V	V	P	V	V	V	V
Coluber constrictor	V	V	V	V	V	V	V	V	V	V	V	V	V
Diadophis punctatus	V	P	V	V	V	V	V	V	P	V	V	V	V
Drymarchon couperi	V	V	U	V	V	V	V	V	P	V	V	V	U
Farancia abacura	V	P	V	V	V	V	V	V	V	V	V	V	V
Farancia erytrogramma	V		V				P	P	P	P	V	V	V
Heterodon platirhinos	V	V	V	V	V	V	V	V	V	V	V	V	V
Heterodon simus			V		V	V	V	V	P		V	U	P
Lampropeltis calligaster			V									U	P
Lampropeltis elapsoides	V	V	V	V	V	V	P	V	P	V	V	V	P
Lampropeltis extenuata					V		U						
Lampropeltis getula complex	V	P	V	V	V	V	V	V	P	V	V	V	V
Masticophis flagellum	V	V	V	V	V	V	V	V	P	V	V	V	V

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Nerodia clarkii		V	Р	V				V		V	V		
Nerodia cyclopion			P							,	,		
Nerodia erythrogaster			V				V		P		V	V	V
Nerodia fasciata	V	Р	V	V	V	V	V	V	V	V	V	V	V
Nerodia floridana	V	Р		V	V	V	P	V	V	V	V	V	V
Nerodia rhombifer			V										
Nerodia sipedon			V									V	P
Nerodia taxispilota	P	Р	V	P	V	V	V	P	V	V	V	V	V
Opheodrys aestivus	V	Р	V	V	V	V	P	V	V	V	V	V	V
Pantherophis alleghaniensis and spiloides	V	V	v	v	v	V	V	v	V	V	V	v	V
Pantherophis guttatus	V	V	V	V	V	V	V	V	V	V	V	V	V
Pituophis melanoleucus	V	V	V	V	V	V	V	V	V	V	V	V	V
Regina alleni	V	P		V	V	V	P	V	P	V	V		
Regina rigida	V		V		P	P	P	V	P	V	V	V	V
Regina septemvittata			V								P	V	V
Rhadinaea flavilata	V	P	U	V	V	P	V	V	V	V	P	V	P
Seminatrix pygaea	V	Р	V	V	V	V	P	V	P	V	V	V	V
Storeria dekayi			V					V			V	P	P
Storeria occipitomaculata			V		P	V	P	V	P	U	V	U	P
Storeria victa	V	V		V	V	V			P	V			
Tantilla coronata			V									V	P
Tantilla oolitica													
Tantilla relicta	U	P		V	V	V	V		V	V			
Thamnophis sauritus	V	V	V	V	V	V	P	V	P	V	V	V	V
Thamnophis sirtalis	V	P	V	V	V	V	P	V	V	V	V	V	V
Virginia striatula			V				P	P	V		P	V	V
Virginia valeriae			U				V	V	P		V	V	V

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FAMILY ELAPIDAE													
Micrurus fulvius	V	V	V	V	V	V	V	V	V	V	V	V	P
FAMILY CROTALIDAE													
Agkistrodon contortrix			V				V					P	
Agkistrodon piscivorus	V	P	V	V	V	V	P	V	P	V	V	V	V
Crotalus adamanteus	V	V	V	V	V	V	V	V	P	V	V	V	V
Crotalus horridus							V		V	V		V	
Sistrurus miliarius	V	V	V	V	V	V	P	V	P	V	V	V	V
FAMILY TYPHLOPIDAE													
Ramphotyphlops braminus*		V		V	V					V			