

Evidence & Credits

Companion to the student field guide, edition candidate-14. Student page numbers below refer to that matching edition.

Keep this audit record with the teaching files. It contains detailed claim sources, image identity and rights records, verification dates and transformation notes. The student guide retains image credits and license/source links so its attribution travels with it.

Print this companion separately: two-sided at Actual Size, flip on the long edge, with this page on the front. Keep its page order so alternating margins remain correct.

The full physical binder and actual student-pair checks remain pending. Digital source and layout reviews do not establish print quality, fit or learning effectiveness.

Science & rules source directory

Source numbers appear on the pages they support. Dates apply to the cited record, not every earlier project note.

S1 • NC State Plant Toolbox — American Beech

Recorded check date(s): 2026-09-28. Supports: identification, habitat, life cycle, ecological and human roles, leaf and reproductive traits. Used on student pp. 7, 106.

<https://plants.ces.ncsu.edu/plants/fagus-grandifolia/>

Plant author freshly checked the source and retained its HTML on September 28, 2026.

S2 • USDA Forest Service Woody Plant Seed Manual — Fagus seed anatomy

Recorded check date(s): 2026-09-28. Supports: fruit wall versus seed, published seed-section illustration. Used on student pp. 7.

https://www.fs.usda.gov/rm/pubs_series/wo/wo_ah727.pdf#page=534

S3 • NC State Plant Toolbox — Black Gum

Recorded check date(s): 2026-09-28. Supports: identification, habitat, life cycle, ecological and human roles, leaf and reproductive traits. Used on student pp. 9, 107.

<https://plants.ces.ncsu.edu/plants/nyssa-sylvatica/>

Plant author freshly checked the source and retained its HTML on September 28, 2026.

S4 • USDA Forest Service Woody Plant Seed Manual — Nyssa seed anatomy

Recorded check date(s): 2026-09-28. Supports: fruit stone versus seed, published seed-section illustration. Used on student pp. 9.

https://www.fs.usda.gov/rm/pubs_series/wo/wo_ah727.pdf#page=759

S5 • NC State Plant Toolbox — Bradford Pear / Callery Pear

Recorded check date(s): 2026-09-28. Supports: identification, habitat, life cycle, ecological and human roles, leaf and reproductive traits. Used on student pp. 11, 108.

<https://plants.ces.ncsu.edu/plants/pyrus-calleryana/>

Plant author freshly checked the source and retained its HTML on September 28, 2026.

S6 • NC State Plant Toolbox — Crepe Myrtle

Recorded check date(s): 2026-09-28. Supports: identification, habitat, life cycle, ecological and human roles, leaf and reproductive traits. Used on student pp. 13, 106, 108.

<https://plants.ces.ncsu.edu/plants/lagerstroemia-indica/>

Plant author freshly checked the source and retained its HTML on September 28, 2026.

S7 • NC State Plant Toolbox — Eastern White Pine

Recorded check date(s): 2026-09-28. Supports: identification, habitat, life cycle, ecological and human roles, leaf and reproductive traits. Used on student pp. 15, 99.

<https://plants.ces.ncsu.edu/plants/pinus-strobus/>

Plant author freshly checked the source and retained its HTML on September 28, 2026.

Science & rules sources · continued

S8 · NC State Plant Toolbox — Hickory

Recorded check date(s): 2026-09-28. Supports: identification, habitat, life cycle, ecological and human roles, leaf and reproductive traits. Used on student pp. 17, 108.

<https://plants.ces.ncsu.edu/plants/carya-glabra/>

Plant author freshly checked the source and retained its HTML on September 28, 2026.

S9 · NC State — Shagbark hickory

Recorded check date(s): 2026-09-28. Supports: species variation, husk and nut, shaggy bark. Used on student pp. 17.

<https://plants.ces.ncsu.edu/plants/carya-ovata/>

S10 · USDA Forest Service Woody Plant Seed Manual — Carya seed anatomy

Recorded check date(s): 2026-09-28. Supports: fruit wall versus seed, published seed-section illustration. Used on student pp. 17.

https://www.fs.usda.gov/rm/pubs_series/wo/wo_ah727.pdf#page=347

S11 · NC State Plant Toolbox — Loblolly Pine

Recorded check date(s): 2026-09-28. Supports: identification, habitat, life cycle, ecological and human roles, leaf and reproductive traits. Used on student pp. 20, 99.

<https://plants.ces.ncsu.edu/plants/pinus-taeda/>

Plant author freshly checked the source and retained its HTML on September 28, 2026.

S12 · NC State Plant Toolbox — Longleaf Pine

Recorded check date(s): 2026-09-28. Supports: identification, habitat, life cycle, ecological and human roles, leaf and reproductive traits. Used on student pp. 22, 99.

<https://plants.ces.ncsu.edu/plants/pinus-palustris/>

Plant author freshly checked the source and retained its HTML on September 28, 2026.

S13 · US Forest Service — Longleaf pine species review

Recorded check date(s): 2026-09-28. Supports: needle length, grass stage, fire ecology. Used on student pp. 22.

<https://research.fs.usda.gov/feis/species-reviews/pinpal>

S14 · Virginia Tech Dendrology — Longleaf pine

Recorded check date(s): 2026-09-28. Supports: needle and cone sizes, longleaf needle and cone dimensions. Used on student pp. 22, 99.

<https://dendro.cnre.vt.edu/dendrology/syllabus/factsheet.cfm?ID=107>

S15 · NC State Plant Toolbox — Magnolia

Recorded check date(s): 2026-09-28. Supports: identification, habitat, life cycle, ecological and human roles, leaf and reproductive traits. Used on student pp. 24, 108.

<https://plants.ces.ncsu.edu/plants/magnolia-grandiflora/>

Plant author freshly checked the source and retained its HTML on September 28, 2026.

S16 · NC State Plant Toolbox — Oak

Recorded check date(s): 2026-09-28. Supports: identification, habitat, life cycle, ecological and human roles. Used on student pp. 26.

<https://plants.ces.ncsu.edu/plants/quercus-alba/>

Science & rules sources · continued

S17 · NC State — Willow oak

Recorded check date(s): 2026-09-28. Supports: unlobed oak leaves, acorns, species variation. Used on student pp. 26.

<https://plants.ces.ncsu.edu/plants/quercus-phellos/>

S18 · USDA Forest Service Woody Plant Seed Manual — Quercus seed anatomy

Recorded check date(s): 2026-09-28. Supports: fruit wall versus seed, published seed-section illustration. Used on student pp. 26.

https://www.fs.usda.gov/rm/pubs_series/wo/wo_ah727.pdf#page=945

S19 · NC State Plant Toolbox — Red Maple

Recorded check date(s): 2026-09-28. Supports: identification, habitat, life cycle, ecological and human roles, leaf and reproductive traits. Used on student pp. 29, 107, 108.

<https://plants.ces.ncsu.edu/plants/acer-rubrum/>

Plant author freshly checked the source and retained its HTML on September 28, 2026.

S20 · The Silva of North America, vol. II (1895), plate XCIV and original legend

Recorded check date(s): 2026-09-28. Supports: published fruit, seed and embryo sections. Used on student pp. 29.

[https://commons.wikimedia.org/wiki/File:Silva_of_North_America._Volume_II,_Cyrillaceae_-_sapindaceae,_The_-_DPLA_-_96d7c6e80c6075e323cf6c3a7ea4cd74_\(page_155\).jpg](https://commons.wikimedia.org/wiki/File:Silva_of_North_America._Volume_II,_Cyrillaceae_-_sapindaceae,_The_-_DPLA_-_96d7c6e80c6075e323cf6c3a7ea4cd74_(page_155).jpg)

S21 · NC State Plant Toolbox — River Birch

Recorded check date(s): 2026-09-28. Supports: identification, habitat, life cycle, ecological and human roles, leaf and reproductive traits. Used on student pp. 31, 106.

<https://plants.ces.ncsu.edu/plants/betula-nigra/>

Plant author freshly checked the source and retained its HTML on September 28, 2026.

S22 · USDA Forest Service Woody Plant Seed Manual — Betula seed anatomy

Recorded check date(s): 2026-09-28. Supports: fruit wall versus seed, published seed-section illustration. Used on student pp. 31.

https://www.fs.usda.gov/rm/pubs_series/wo/wo_ah727.pdf#page=319

S23 · NC State Plant Toolbox — Shortleaf Pine

Recorded check date(s): 2026-09-28. Supports: identification, habitat, life cycle, ecological and human roles, leaf and reproductive traits. Used on student pp. 33, 99.

<https://plants.ces.ncsu.edu/plants/pinus-echinata/>

Plant author freshly checked the source and retained its HTML on September 28, 2026.

S24 · NC State Plant Toolbox — Sweetgum

Recorded check date(s): 2026-09-28. Supports: identification, habitat, life cycle, ecological and human roles, leaf and reproductive traits. Used on student pp. 35, 107.

<https://plants.ces.ncsu.edu/plants/liquidambar-styraciflua/>

Plant author freshly checked the source and retained its HTML on September 28, 2026.

Science & rules sources · continued

S25 · NC State Plant Toolbox — Carolina Lily

Recorded check date(s): 2026-09-28. Supports: identification, habitat, life cycle, ecological and human roles. Used on student pp. 37.

<https://plants.ces.ncsu.edu/plants/lilium-michauxii/>

S26 · National Park Service — Showy Blooms

Recorded check date(s): 2026-09-28. Supports: Carolina lily versus Turks-cap lily. Used on student pp. 37.

<https://www.nps.gov/blri/learn/nature/showy-blooms.htm>

S27 · NC State Plant Toolbox — Eastern Poison Ivy

Recorded check date(s): 2026-09-28. Supports: identification, habitat, life cycle, ecological and human roles, leaf and reproductive traits. Used on student pp. 38, 98, 105, 108.

<https://plants.ces.ncsu.edu/plants/toxicodendron-radicans/>

Plant author freshly checked the source and retained its HTML on September 28, 2026.

S28 · NC State Plant Toolbox — English Ivy

Recorded check date(s): 2026-09-28. Supports: identification, habitat, life cycle, ecological and human roles, leaf and reproductive traits. Used on student pp. 39, 105, 108.

<https://plants.ces.ncsu.edu/plants/hedera-helix/>

Plant author freshly checked the source and retained its HTML on September 28, 2026.

S29 · NC State Plant Toolbox — Kudzu

Recorded check date(s): 2026-09-28. Supports: identification, habitat, life cycle, ecological and human roles, leaf and reproductive traits. Used on student pp. 41, 105, 108.

<https://plants.ces.ncsu.edu/plants/pueraria-montana-var-lobata/>

Plant author freshly checked the source and retained its HTML on September 28, 2026.

S30 · Alabama Cooperative Extension — History and Use of Kudzu

Recorded check date(s): 2026-09-28. Supports: twining, rooting nodes, nitrogen-fixing partnership, twining growth; young-stem hairs. Used on student pp. 41, 105.

<https://www.aces.edu/blog/topics/invasive-species/the-history-and-use-of-kudzu-in-the-southeastern-united-states/>

S31 · NC State Plant Toolbox — Scuppernong Grape

Recorded check date(s): 2026-09-28. Supports: identification, habitat, life cycle, ecological and human roles, leaf and reproductive traits. Used on student pp. 43, 105, 108.

<https://plants.ces.ncsu.edu/plants/vitis-rotundifolia/>

Plant author freshly checked the source and retained its HTML on September 28, 2026.

S32 · NC State Plant Toolbox — Venus Flytrap

Recorded check date(s): 2026-09-28. Supports: identification, habitat, life cycle, ecological and human roles, care, photosynthesis, prey nutrients. Used on student pp. 44, 86, 92, 94.

<https://plants.ces.ncsu.edu/plants/dionaea-muscipula/>

S33 · US Fish and Wildlife Service — Venus flytrap

Recorded check date(s): 2026-09-28. Supports: native habitat, ecology. Used on student pp. 44.

<https://www.fws.gov/species/venus-fly-trap-dionaea-muscipula>

Science & rules sources · continued

S34 · NC State — Five Things about Venus Flytraps

Recorded check date(s): 2026-09-28. Supports: native versus introduced populations, photosynthesis, fire. Used on student pp. 44.

<https://cnr.ncsu.edu/news/2021/01/five-things-about-venus-flytraps/>

S35 · Fasbender et al. 2017 — Prey-derived carbon fuels respiration

Recorded check date(s): 2026-09-28. Supports: why not energy was too absolute. Used on student pp. 44.

<https://nph.onlinelibrary.wiley.com/doi/10.1111/nph.14404>

S36 · American Alligator species account

Recorded check date(s): 2026-09-28. Supports: identification, habitat, diet, life cycle, regional context. Used on student pp. 46.

<https://www.ncwildlife.gov/species/alligator-american>

Reopened for the Codex revision and checked for the supported claims; does not certify every statement on the external page. Earlier project-wide research was September 18, 2026.

S37 · Smithsonian National Zoo — American alligator

Recorded check date(s): 2026-09-28. Supports: snout and teeth, diet, gator holes, reproduction. Used on student pp. 46.

<https://nationalzoo.si.edu/animals/american-alligator>

S38 · Eastern Fence Lizard species account

Recorded check date(s): 2026-09-28. Supports: identification, habitat, NC context, diet, life cycle, regional context. Used on student pp. 47, 104.

<https://www.ncwildlife.gov/species/eastern-fence-lizard>

Reopened for the Codex revision and checked for the supported claims; does not certify every statement on the external page. Earlier project-wide research was September 18, 2026.

S39 · University of Georgia SREL — Eastern Fence Lizard

Recorded check date(s): 2026-09-28. Supports: diet, egg laying, hatchlings, regional habitats. Used on student pp. 47.

<https://srelherp.uga.edu/lizards/eastern-fence-lizard/>

S40 · Eastern Glass Lizard species account

Recorded check date(s): 2026-09-28. Supports: identification, habitat, diet, life cycle, regional context. Used on student pp. 49, 104, 109.

<https://www.ncwildlife.gov/species/eastern-glass-lizard>

Reopened for the Codex revision and checked for the supported claims; does not certify every statement on the external page. Earlier project-wide research was September 18, 2026.

S41 · Green Anole species account

Recorded check date(s): 2026-09-28. Supports: identification, habitat, diet, life cycle, regional context, insect diet, color change, toe pads. Used on student pp. 51, 91, 104.

<https://www.ncwildlife.gov/species/green-anole>

Reopened for the Codex revision and checked for the supported claims; does not certify every statement on the external page. Earlier project-wide research was September 18, 2026.

Science & rules sources · continued

S42 · Southeastern Five-lined Skink species account

Recorded check date(s): 2026-09-28. Supports: identification, habitat, diet, life cycle, regional context. Used on student pp. 52, 104.

<https://www.ncwildlife.gov/species/southeastern-five-lined-skink>

Reopened for the Codex revision and checked for the supported claims; does not certify every statement on the external page. Earlier project-wide research was September 18, 2026.

S43 · Virginia Herpetological Society — Southeastern Five-lined Skink

Recorded check date(s): 2026-09-28. Supports: tail-underside scale comparison, age and sex variation. Used on student pp. 52.

<https://www.virginiaherpetologicalsociety.com/reptiles/lizards/southeastern-five-lined-skink/index.php>

S44 · Banded Water Snake species account

Recorded check date(s): 2026-09-28. Supports: identification, habitat, diet, life cycle, regional context. Used on student pp. 54, 100.

<https://srelherp.uga.edu/snakes/banded-watersnake/>

Reopened for the Codex revision and checked for the supported claims; does not certify every statement on the external page. Earlier project-wide research was September 18, 2026.

S45 · Florida Museum — Southern (Banded) Watersnake

Recorded check date(s): 2026-09-28. Supports: shared eye stripe, defensive head flattening, absence of facial pit. Used on student pp. 54.

<https://www.floridamuseum.ufl.edu/florida-snake-id/snake/southern-watersnake/>

S46 · Black Rat Snake species account

Recorded check date(s): 2026-09-28. Supports: identification, habitat, diet, life cycle, regional context. Used on student pp. 56, 100.

<https://www.ncwildlife.gov/species/rat-snake>

Reopened for the Codex revision and checked for the supported claims; does not certify every statement on the external page. Earlier project-wide research was September 18, 2026.

S47 · NC Wildlife — Racer

Recorded check date(s): 2026-09-28. Supports: shared pale chin, smooth scales in racer. Used on student pp. 56.

<https://www.ncwildlife.gov/species/racer>

S48 · SSAR 2025 North American standard names, ninth edition, pp.48-49

Recorded check date(s): 2026-09-28. Supports: dated ratsnake naming note, competing taxonomic treatments. Used on student pp. 56.

<https://webapps.fhsu.edu/ksHerp/bibFiles/32018.pdf>

S49 · Copperhead species account

Recorded check date(s): 2026-09-28. Supports: identification, habitat, diet, life cycle, regional context. Used on student pp. 57, 100.

<https://www.ncwildlife.gov/species/copperhead>

Reopened for the Codex revision and checked for the supported claims; does not certify every statement on the external page. Earlier project-wide research was September 18, 2026.

Science & rules sources · continued

S50 · Cottonmouth species account

Recorded check date(s): 2026-09-28. Supports: identification, habitat, diet, life cycle, regional context. Used on student pp. 59, 100.

<https://www.ncwildlife.gov/species/cottonmouth>

Reopened for the Codex revision and checked for the supported claims; does not certify every statement on the external page. Earlier project-wide research was September 18, 2026.

S51 · NC State Parks — Dekay’s Brownsnake species account

Recorded check date(s): 2026-09-28. Supports: identification, habitat, diet, life cycle, regional context. Used on student pp. 61, 100.

https://auth1.dpr.ncparks.gov/reptiles/view.php?sort_order_num=155.0

Reopened for the Codex revision and checked for the supported claims; does not certify every statement on the external page. Earlier project-wide research was September 18, 2026.

S52 · Eastern Diamondback Rattlesnake species account

Recorded check date(s): 2026-09-29, 2026-09-28. Supports: identification, habitat, diet, NC regional context, current NC conservation status, life cycle, regional context. Used on student pp. 62, 100.

<https://www.ncwildlife.gov/species/eastern-diamondback-rattlesnake>

NC regional range and state Endangered classification rechecked September 29, 2026. Identification, habitat and diet were checked September 28, 2026; earlier project-wide research was September 18, 2026. These checks do not certify every statement on the external page.

Reopened for the Codex revision and checked for the supported claims; does not certify every statement on the external page. Earlier project-wide research was September 18, 2026.

S53 · Florida Museum — Eastern Diamond-backed Rattlesnake

Recorded check date(s): 2026-09-28. Supports: diamond pattern and tail correction, head stripe, live birth, diet, timber comparison. Used on student pp. 62.

<https://www.floridamuseum.ufl.edu/florida-snake-id/snake/eastern-diamond-backed-rattlesnake/>

S54 · Eastern Garter Snake species account

Recorded check date(s): 2026-09-28. Supports: identification, habitat, diet, life cycle, regional context. Used on student pp. 63, 100.

<https://www.ncwildlife.gov/species/eastern-garter-snake>

Reopened for the Codex revision and checked for the supported claims; does not certify every statement on the external page. Earlier project-wide research was September 18, 2026.

S55 · Eastern Hognose Snake species account

Recorded check date(s): 2026-09-28. Supports: identification, habitat, diet, NC regional context, life cycle, regional context. Used on student pp. 64, 100.

<https://www.ncwildlife.gov/species/eastern-hognose-snake>

Reopened for the Codex revision and checked for the supported claims; does not certify every statement on the external page. Earlier project-wide research was September 18, 2026.

S56 · University of Georgia SREL — Eastern Hognose Snake

Recorded check date(s): 2026-09-28. Supports: egg laying, variable color, sandy habitat, toad-focused diet, rear-fanged nuance. Used on student pp. 64.

<https://srelherp.uga.edu/snakes/eastern-hognose-snake/>

Science & rules sources · continued

S57 · Eastern Kingsnake species account

Recorded check date(s): 2026-09-28. Supports: identification, habitat, diet, NC regional context, life cycle, regional context. Used on student pp. 65, 100.

<https://www.ncwildlife.gov/species/eastern-kingsnake>

Reopened for the Codex revision and checked for the supported claims; does not certify every statement on the external page. Earlier project-wide research was September 18, 2026.

S58 · University of Georgia SREL — Eastern Kingsnake

Recorded check date(s): 2026-09-28. Supports: chain pattern, constriction, diet, egg laying. Used on student pp. 65.

<https://srelherp.uga.edu/snakes/eastern-kingsnake/>

S59 · Painted Turtle species account

Recorded check date(s): 2026-09-28. Supports: identification, habitat, diet, life cycle, regional context. Used on student pp. 66, 101.

<https://www.ncwildlife.gov/species/eastern-painted-turtle>

Reopened for the Codex revision and checked for the supported claims; does not certify every statement on the external page. Earlier project-wide research was September 18, 2026.

S60 · University of Georgia SREL — Painted Turtle

Recorded check date(s): 2026-09-28. Supports: egg laying, hatchlings may overwinter in nest, diet. Used on student pp. 66.

<https://srelherp.uga.edu/turtles/painted-turtle/>

S61 · Snapping Turtle species account

Recorded check date(s): 2026-09-28. Supports: identification, habitat, diet, life cycle, regional context. Used on student pp. 68, 101.

<https://www.ncwildlife.gov/species/common-snapping-turtle>

Reopened for the Codex revision and checked for the supported claims; does not certify every statement on the external page. Earlier project-wide research was September 18, 2026.

S62 · University of Georgia SREL — Common Snapping Turtle

Recorded check date(s): 2026-09-28. Supports: diet, egg laying, shell and tail, habitat. Used on student pp. 68.

<https://srelherp.uga.edu/turtles/common-snapping-turtle/>

S63 · NC Zoo — Caring for Alligator Snapping Turtles

Recorded check date(s): 2026-09-28. Supports: alligator snapping turtle is not native to NC. Used on student pp. 68.

<https://www.nczoo.org/blog/oh-snap-caring-alligator-snapping-turtles>

S64 · Spotted Turtle species account

Recorded check date(s): 2026-09-28. Supports: identification, habitat, diet, NC regional context, life cycle, regional context. Used on student pp. 70, 101.

<https://www.ncwildlife.gov/species/spotted-turtle>

Reopened for the Codex revision and checked for the supported claims; does not certify every statement on the external page. Earlier project-wide research was September 18, 2026.

Science & rules sources · continued

S65 · University of Georgia SREL — Spotted Turtle

Recorded check date(s): 2026-09-28. Supports: slow maturation, diet, wetland habitat, variable spots. Used on student pp. 70.

<https://srelherp.uga.edu/turtles/spotted-turtle/>

S66 · Eastern Box Turtle species account

Recorded check date(s): 2026-09-28. Supports: identification, habitat, diet, life cycle, regional context. Used on student pp. 71, 101.

<https://www.ncwildlife.gov/species/eastern-box-turtle>

Reopened for the Codex revision and checked for the supported claims; does not certify every statement on the external page. Earlier project-wide research was September 18, 2026.

S67 · North Carolina G.S.145-9 — State reptile

Recorded check date(s): 2026-09-28. Supports: turtle designation and eastern box turtle emblem. Used on student pp. 71.

https://www.ncleg.gov/EnactedLegislation/Statutes/HTML/BySection/Chapter_145/GS_145-9.html

S68 · Yellow-bellied Slider species account

Recorded check date(s): 2026-09-28. Supports: identification, NC regional context, habitat, diet, life cycle, regional context. Used on student pp. 73, 94, 101, 109.

<https://www.ncwildlife.gov/species/yellow-bellied-slider>

Reopened for the Codex revision and checked for the supported claims; does not certify every statement on the external page. Earlier project-wide research was September 18, 2026.

S69 · Georgia Aquarium — Yellow-Bellied Slider

Recorded check date(s): 2026-09-28. Supports: omnivorous adults, age-related markings, diet change with age, egg laying. Used on student pp. 73.

<https://www.georgiaaquarium.org/animal/yellowbelly-slider/>

S70 · American Toad species account

Recorded check date(s): 2026-09-28. Supports: identification, habitat, NC context, diet, life cycle, regional context. Used on student pp. 74, 102.

<https://www.ncwildlife.gov/species/american-toad>

Reopened for the Codex revision and checked for the supported claims; does not certify every statement on the external page. Earlier project-wide research was September 18, 2026.

S71 · University of Georgia SREL — American Toad

Recorded check date(s): 2026-09-28. Supports: glands, variable color, egg strings, tadpole diet and development. Used on student pp. 74.

<https://srelherp.uga.edu/frogs-and-toads/american-toad/>

S72 · NC State Parks — American Toad

Recorded check date(s): 2026-09-29. Supports: NC regional range, Fowler's and Southern Toad comparisons, hybrid identification limits. Used on student pp. 74.

https://auth1.dpr.ncparks.gov/amphibians/view.php?checklist_number=1.0

Read the NC distribution and similar-species sections for this revision. Herps of NC returned an access challenge on September 29, so its live contents were not treated as verified.

Science & rules sources · continued

S73 · NC Wildlife — Southern Toad

Recorded check date(s): 2026-09-29. Supports: Southern Toad Coastal Plain range, large knobs on cranial crests, American Toad comparison. Used on student pp. 74.

<https://www.ncwildlife.gov/species/southern-toad>

Southern Toad is a lookalike comparison, not an added event-roster entry. The source says it is the only large toad in many portions of the lower Coastal Plain; that qualified statement is not generalized to the entire region.

S74 · Bullfrog species account

Recorded check date(s): 2026-09-28. Supports: identification, habitat, diet, life cycle, regional context. Used on student pp. 75, 102.

<https://www.ncwildlife.gov/education/american-bullfrog-species-profile/open>

Reopened for the Codex revision and checked for the supported claims; does not certify every statement on the external page. Earlier project-wide research was September 18, 2026.

S75 · Pine Barrens Treefrog species account

Recorded check date(s): 2026-09-28. Supports: identification, habitat, diet, life cycle, regional context. Used on student pp. 77, 102.

<https://www.ncwildlife.gov/species/pine-barrens-treefrog>

Reopened for the Codex revision and checked for the supported claims; does not certify every statement on the external page. Earlier project-wide research was September 18, 2026.

S76 · NC General Statutes, Chapter 145

Recorded check date(s): 2026-09-28. Supports: state symbols; generic tree/reptile and emblem distinctions. Used on student pp. 77, 5.

https://www.ncleg.gov/EnactedLegislation/Statutes/HTML/ByChapter/Chapter_145.html

S77 · Southern Leopard Frog species account

Recorded check date(s): 2026-09-28. Supports: identification, comparison with pickerel frog, habitat, diet, life cycle, regional context. Used on student pp. 78, 102.

<https://www.ncwildlife.gov/species/southern-leopard-frog>

Reopened for the Codex revision and checked for the supported claims; does not certify every statement on the external page. Earlier project-wide research was September 18, 2026.

S78 · NC Wildlife — Southern Leopard Frog detailed species profile

Recorded check date(s): 2026-09-28. Supports: diet, NC range, egg masses and tadpoles, food webs. Used on student pp. 78.

<https://www.ncwildlife.gov/education/southern-leopard-frog-wildlife-species-profile/open>

S79 · Marbled Salamander species account

Recorded check date(s): 2026-09-28. Supports: identification, terrestrial eggs and aquatic larvae, qualified nest attendance, habitat, diet, life cycle, regional context. Used on student pp. 79, 103.

<https://www.virginiaherpetologicalsociety.com/amphibians/salamanders/marbled-salamander/index.php>

Reopened for the Codex revision and checked for the supported claims; does not certify every statement on the external page. Earlier project-wide research was September 18, 2026.

Science & rules sources · continued

S80 · NCpedia — State Salamander of North Carolina

Recorded check date(s): 2026-09-28. Supports: state salamander designation, NC range, terrestrial seasonal-pool eggs, terrestrial eggs and aquatic larvae. Used on student pp. 79, 89, 103.

<https://www.ncpedia.org/symbols/salamander>

S81 · Massachusetts Division of Fisheries and Wildlife — Marbled Salamander

Recorded check date(s): 2026-09-28. Supports: adult lungs and larval external gills. Used on student pp. 79.

<https://www.mass.gov/info-details/marbled-salamander>

S82 · Red-backed Salamander species account

Recorded check date(s): 2026-09-28. Supports: identification, habitat, diet, life cycle, regional context, lunglessness, direct development, color forms. Used on student pp. 80, 89, 98, 103, 109.

https://bio.davidson.edu/herpcons/herps_of_nc/salamanders/Plecin/Ple_cin.html

Reopened for the Codex revision and checked for the supported claims; does not certify every statement on the external page. Earlier project-wide research was September 18, 2026.

S83 · White-spotted Slimy Salamander species account

Recorded check date(s): 2026-09-28. Supports: identification, habitat, diet, life cycle, regional context, lunglessness, direct development, geographic identity limits. Used on student pp. 81, 89, 98, 103, 109.

https://bio.davidson.edu/herpcons/herps_of_nc/salamanders/Pleaur%2Ccha%2Cchl%2Ccyl%2Cglu%2Ctey/Ple_aur%2C%20cha%2C%20chl%2C%20cyl%2C%20glu%2C%20tey.html

Reopened for the Codex revision and checked for the supported claims; does not certify every statement on the external page. Earlier project-wide research was September 18, 2026.

S84 · NC State Extension: Botany

Recorded check date(s): 2026-09-28. Supports: plant structures, flower and seed structures, photosynthesis, leaf vocabulary. Used on student pp. 82, 83, 84, 85, 86, 92, 93, 94, 95, 96, 97, 108.

<https://content.ces.ncsu.edu/extension-gardener-handbook/3-botany>

September 29, 2026 targeted image-axis check: NC State Botany describes cotyledons as part of the embryo. Earlier checks of other supported claims retain their recorded dates.

September 29, 2026 targeted check: leaf arrangements, whole-leaf boundaries and entire/serrated edges checked against NC State Botany for the expanded D4 model. Earlier checks of other claims retain their dates.

S85 · NC State Extension: Propagation

Recorded check date(s): 2026-09-28. Supports: germination, seed structure, seedling needs. Used on student pp. 83, 84, 96.

<https://content.ces.ncsu.edu/extension-gardener-handbook/13-propagation>

S86 · Indiana University: Plants in Motion, Tropisms

Recorded check date(s): 2026-09-28. Supports: directional growth, gravity, light, touch. Used on student pp. 87, 97.

<https://plantsinmotion.bio.indiana.edu/movies-categories/tropisms/index.html>

S87 · Indiana University: Nastic Movements

Recorded check date(s): 2026-09-28. Supports: movement versus directional growth. Used on student pp. 87, 97.

<https://plantsinmotion.bio.indiana.edu/movies-categories/nastic-movements/index.html>

Science & rules sources · continued

S88 · Pea-root hydrotropism research, PubMed 14534201

Recorded check date(s): 2026-09-18. Supports: root growth response to moisture; specialized research conditions. Used on student pp. 87.

<https://pubmed.ncbi.nlm.nih.gov/14534201/>

S89 · NC State and NC Wildlife: Reptiles and Amphibians in Your Backyard

Recorded check date(s): 2026-09-28. Supports: classification, ectothermy, habitat, human interactions. Used on student pp. 88, 89, 90, 91, 94, 97, 98, 109.

<https://www.ncwildlife.gov/media/1149/download?attachment=>

S90 · NC State Extension: Snakes, Family Colubridae

Recorded check date(s): 2026-09-28. Supports: snake traits, diets, egg laying and live birth. Used on student pp. 89, 91, 98, 100, 109.

<https://content.ces.ncsu.edu/snakes/family-colubridae>

S91 · NC State Extension: Snakes, Family Viperidae

Recorded check date(s): 2026-09-28. Supports: copperhead, cottonmouth, eastern diamondback, live birth. Used on student pp. 89, 98, 100, 109.

<https://content.ces.ncsu.edu/snakes/family-viperidae>

S92 · Washington State University: How do turtles get their shells?

Recorded check date(s): 2026-09-28. Supports: shell bones, ribs and backbone, shell growth. Used on student pp. 90, 98, 101.

<https://askdruniverse.wsu.edu/2025/07/23/turtles-get-shells/>

S93 · NC Wildlife: Eastern Box Turtle

Recorded check date(s): 2026-09-18. Supports: hinge, land habitat, diet, reproduction. Used on student pp. 90.

<https://www.ncwildlife.gov/eastern-box-turtle-species-profile/download?attachment=>

S94 · NC Wildlife: American Toad species profile

Recorded check date(s): 2026-09-28. Supports: American toad insect diet. Used on student pp. 91.

<https://www.ncwildlife.gov/media/1371/download?attachment=>

S95 · NC State Extension: Soils and Plant Nutrients

Recorded check date(s): 2026-09-28. Supports: soil air and drainage, fertilizer, nutrients, diagnosis. Used on student pp. 92, 93, 94, 95, 97.

<https://content.ces.ncsu.edu/extension-gardener-handbook/1-soils-and-plant-nutrients>

S96 · 2027 Division A official manual: Roots & Reptiles

Recorded check date(s): 2026-09-28. Supports: event rules, official specimen names, symbol categories. Used on student pp. 5, 6.

https://docs.google.com/document/d/1sMeCETHlrBppAlsuzr1drgQ20ajguC_z3GaBv--oxQ/edit

Science & rules sources · continued

S97 · 2027 Division A FAQ

Recorded check date(s): 2026-09-28. Supports: Black Gum clarification; no answer on muscadine or white pine scoring. Used on student pp. 5, 6.

<https://docs.google.com/document/d/15zlhO0CmKwNdbP11XO9uHw5F7yj9EOEe76AaUcWJZ7g/edit>

S98 · North Carolina Session Law 2023-63

Recorded check date(s): 2026-09-28. Supports: sections 7 and 8; effective June 27, 2023. Used on student pp. 5.

<https://www.ncleg.gov/EnactedLegislation/SessionLaws/HTML/2023-2024/SL2023-63.html>

S99 · NC State Plant Toolbox: Oak

Recorded check date(s): 2026-09-18. Supports: identification, leaf and reproductive traits. Used on student pp. 108.

<https://plants.ces.ncsu.edu/plants/quercus/>

Image credits & identity

Each P-number identifies a photograph or credited published illustration. Images are placed without additional cropping or retouching. Prior figure extraction is noted below. PDF streams are resized to at most 300 pixels per printed inch and JPEG-compressed; source assets are retained.

P1 • American Beech • leaf • pp. 7

Katja Schulz · CC BY 2.0 · *Fagus grandifolia*

Checked 2026-09-28. NC State Plant Toolbox identifies this image under the stated species; visible structures checked against the profile description.

Source preparation: Unmodified; scaled to fit, no crop.

Source: <https://plants.ces.ncsu.edu/plants/fagus-grandifolia/>

License: <http://creativecommons.org/licenses/by/2.0/legalcode>

P2 • American Beech • bark • pp. 7

Cathy DeWitt · CC BY 4.0 · *Fagus grandifolia*

Checked 2026-09-28. NC State Plant Toolbox identifies this image under the stated species; visible structures checked against the profile description.

Source preparation: Unmodified; scaled to fit, no crop.

Source: <https://plants.ces.ncsu.edu/plants/fagus-grandifolia/>

License: <http://creativecommons.org/licenses/by/4.0/legalcode>

P3 • American Beech • nut • pp. 7

Omar hoftun · CC BY-SA 4.0 · *Fagus grandifolia*

Checked 2026-09-28. Original photographer identifies *Fagus grandifolia*; triangular nut morphology is consistent with NC State description.

Source preparation: Unmodified; scaled to fit, no crop.

Source: https://commons.wikimedia.org/wiki/File:Fagus_grandifolia_nuts,_by_Omar_Hoftun.jpg

License: <https://creativecommons.org/licenses/by-sa/4.0/>

P4 • American Beech • fruit • pp. 8

Jim Robbins · CC BY-NC-ND 4.0 · *Fagus grandifolia*

Checked 2026-09-28. NC State Plant Toolbox identifies this image under the stated species; visible structures checked against the profile description.

Source preparation: Unmodified; scaled to fit, no crop.

Source: <https://plants.ces.ncsu.edu/plants/fagus-grandifolia/>

License: <http://creativecommons.org/licenses/by-nc-nd/4.0/legalcode>

P5 • American Beech • published seed section • pp. 8

USDA Forest Service; chapter by Franklin T. Bonner and William B. Leak; figure artist not separately credited · Public domain (federal publication figure; no third-party credit) · *Fagus grandifolia*

Checked 2026-09-29. Woody Plant Seed Manual identifies Figure 3 explicitly as *Fagus grandifolia*. Figure, species label, chapter authorship and internal seed structures checked.

Source preparation: Native /Im2 JPEG2000 image object extracted from source PDF page 534 and losslessly decoded to PNG at 475×404; original drawing and bitmap labels unchanged. No vector label overlay occurs within this figure. Earlier 300dpi rendering enlarged source pixels and is retained only as historical derivative.

Source: https://www.fs.usda.gov/rm/pubs_series/wo/wo_ah727.pdf#page=534

License: <https://www.usa.gov/government-copyright>

Image credits · continued

P6 · Black Gum · leaf · pp. 9

Jim Robbins · CC BY-NC-ND 4.0 · *Nyssa sylvatica*

Checked 2026-09-28. NC State Plant Toolbox identifies this image under the stated species; visible structures checked against the profile description.

Source preparation: Unmodified; scaled to fit, no crop.

Source: <https://plants.ces.ncsu.edu/plants/nyssa-sylvatica/>

License: <http://creativecommons.org/licenses/by-nc-nd/4.0/legalcode>

P7 · Black Gum · bark · pp. 9

Jim Robbins · CC BY-NC-ND 4.0 · *Nyssa sylvatica*

Checked 2026-09-28. NC State Plant Toolbox identifies this image under the stated species; visible structures checked against the profile description.

Source preparation: Unmodified; scaled to fit, no crop.

Source: <https://plants.ces.ncsu.edu/plants/nyssa-sylvatica/>

License: <http://creativecommons.org/licenses/by-nc-nd/4.0/legalcode>

P8 · Black Gum · fruit · pp. 9

Jim Robbins · CC BY-NC-ND 4.0 · *Nyssa sylvatica*

Checked 2026-09-28. NC State Plant Toolbox identifies this image under the stated species; visible structures checked against the profile description.

Source preparation: Unmodified; scaled to fit, no crop.

Source: <https://plants.ces.ncsu.edu/plants/nyssa-sylvatica/>

License: <http://creativecommons.org/licenses/by-nc-nd/4.0/legalcode>

P9 · Black Gum · seed section · pp. 10

USDA Forest Service; *Nyssa* chapter by Franklin T. Bonner; figure artist not separately credited · Public domain (federal publication figure; no third-party credit) · *Nyssa sylvatica*

Checked 2026-09-28. USDA Forest Service Woody Plant Seed Manual identifies Figure 3 explicitly as *Nyssa sylvatica*, a longitudinal section through the seed and surrounding endocarp. Federal-authored *Nyssa* chapter; figure has no third-party credit. Figure 2 was not reused because its position labels are ambiguous.

Source preparation: Figure 3 extracted from PDF page 759 at 300 dpi; surrounding page material excluded; drawing and original labels unchanged.

Source: https://www.fs.usda.gov/rm/pubs_series/wo/wo_ah727.pdf#page=759

License: <https://www.usa.gov/government-copyright>

P10 · Bradford Pear / Callery Pear · leaf · pp. 11

Jim Robbins · CC BY-NC-ND 4.0 · *Pyrus calleryana*

Checked 2026-09-28. NC State Plant Toolbox identifies this image under the stated species; visible structures checked against the profile description.

Source preparation: Unmodified; scaled to fit, no crop.

Source: <https://plants.ces.ncsu.edu/plants/pyrus-calleryana/>

License: <http://creativecommons.org/licenses/by-nc-nd/4.0/legalcode>

P11 · Bradford Pear / Callery Pear · bark · pp. 11

Steven J. Baskauf · CC BY 4.0 · *Pyrus calleryana*

Checked 2026-09-28. Vanderbilt Bioimages identifies this specimen as *Pyrus calleryana*, determined by Steven J. Baskauf; bark view checked.

Source preparation: Unmodified; scaled to fit, no crop.

Source: <https://bioimages.vanderbilt.edu/baskauf/31920.htm>

License: <https://creativecommons.org/licenses/by/4.0/>

Image credits · continued

P12 · Bradford Pear / Callery Pear · fruit · pp. 11

Martin LaBar · CC BY-NC 2.0 · *Pyrus calleryana*

Checked 2026-09-28. NC State Plant Toolbox identifies this image under the stated species; visible structures checked against the profile description.

Source preparation: Unmodified; scaled to fit, no crop.

Source: <https://plants.ces.ncsu.edu/plants/pyrus-calleryana/>

License: <http://creativecommons.org/licenses/by-nc/2.0/>

P13 · Bradford Pear / Callery Pear · seed · pp. 12

Steven J. Baskauf · CC BY 4.0 · *Pyrus calleryana*

Checked 2026-09-29. Vanderbilt Bioimages identifies these isolated seeds as *Pyrus calleryana*; source-linked specimen and seed view checked. The 2160×1440 archival image is linked as hiresSAP from the original Bioimages record and visually matches the earlier 1024×683 rendition.

Source preparation: Original 2160×1440 archival photograph from the primary Bioimages record; unmodified, scaled to fit, no crop or upscaling.

Source: <https://bioimages.vanderbilt.edu/baskauf/43578.htm>

License: <http://creativecommons.org/licenses/by/4.0/>

P14 · Bradford Pear / Callery Pear · flower · pp. 12

Cathy DeWitt · CC BY 4.0 · *Pyrus calleryana*

Checked 2026-09-28. NC State Plant Toolbox identifies this image under the stated species; visible structures checked against the profile description.

Source preparation: Unmodified; scaled to fit, no crop.

Source: <https://plants.ces.ncsu.edu/plants/pyrus-calleryana/>

License: <http://creativecommons.org/licenses/by/4.0/legalcode>

P15 · Bradford Pear / Callery Pear · magnified leaf edge · pp. 12

Baskauf, Steven J. · CC BY 4.0 · *Pyrus calleryana*

Checked 2026-09-29. Photographer identifies *Pyrus calleryana*; Bioimages original specimen association and license are preserved in the Zenodo record.

Source preparation: Unmodified source file; scaled to fit, no crop.

Source: <https://zenodo.org/records/11029862>

License: <https://creativecommons.org/licenses/by/4.0/>

P16 · Crepe Myrtle · leaf edges and attachment · pp. 13

Kirchoff, Bruce K. · CC BY 4.0 · *Lagerstroemia indica*

Checked 2026-09-29. Source photographer identifies this taxon in the Vanderbilt Bioimages collection, archived with specimen association and license by Zenodo; visible morphology is consistent.

Source preparation: Unmodified source file; scaled to fit, no crop.

Source: <https://zenodo.org/records/11005741>

License: <https://creativecommons.org/licenses/by/4.0/>

P17 · Crepe Myrtle · bark · pp. 13

Martin LaBar · CC BY-NC 2.0 · *Lagerstroemia indica*

Checked 2026-09-28. NC State Plant Toolbox identifies this image under the stated species; visible structures checked against the profile description.

Source preparation: Unmodified; scaled to fit, no crop.

Source: <https://plants.ces.ncsu.edu/plants/lagerstroemia-indica/>

License: <http://creativecommons.org/licenses/by-nc/2.0/>

Image credits · continued

P18 · Crepe Myrtle · fruit · pp. 13

Cathy DeWitt · CC BY-NC-ND 4.0 · *Lagerstroemia indica*

Checked 2026-09-28. NC State Plant Toolbox identifies this image under the stated species; visible structures checked against the profile description.

Source preparation: Unmodified; scaled to fit, no crop.

Source: <https://plants.ces.ncsu.edu/plants/lagerstroemia-indica/>

License: <http://creativecommons.org/licenses/by-nc-nd/4.0/legalcode>

P19 · Crepe Myrtle · seed · pp. 14

Gmihail · CC BY-SA 3.0 RS · *Lagerstroemia indica*

Checked 2026-09-28. Original photographer identifies the seeds as the stated species; visible seed/wing form checked against USDA Woody Plant Seed Manual and NC State descriptions.

Source preparation: Unmodified; scaled to fit, no crop.

Source: https://commons.wikimedia.org/wiki/File:Lagerstroemia_indica_seeds.jpg

License: <https://creativecommons.org/licenses/by-sa/3.0/rs/deed.en>

P20 · Crepe Myrtle · flower · pp. 14

Jacinta Lluch Valero · CC BY-SA 2.0 · *Lagerstroemia indica*

Checked 2026-09-29. Exact larger original of the NC State Plant Toolbox photo, visually matched to its 600×450 rendition; photographer titles it Espumilla / *Lagerstroemia indica*. Original source identity and CC BY-SA 2.0 license checked 2026-09-29.

Source preparation: Original 3648×2736 photographer file; unmodified, scaled to fit, no crop or upscaling.

Source: <https://www.flickr.com/photos/70626035@N00/7825618540/>

License: <https://creativecommons.org/licenses/by-sa/2.0/>

P21 · Eastern White Pine · needle bundle bases · pp. 15

Tom Glasgow · CC BY 4.0 · *Pinus strobus*

Checked 2026-09-28. NC State Plant Toolbox identifies this image under the stated species; visible structures checked against the profile description.

Source preparation: Unmodified; scaled to fit, no crop.

Source: <https://plants.ces.ncsu.edu/plants/pinus-strobus/>

License: <http://creativecommons.org/licenses/by/4.0/legalcode>

P22 · Eastern White Pine · bark · pp. 15

Nicholas A. Tonelli · CC BY 4.0 · *Pinus strobus*

Checked 2026-09-28. NC State Plant Toolbox identifies this image under the stated species; visible structures checked against the profile description.

Source preparation: Unmodified; scaled to fit, no crop.

Source: <https://plants.ces.ncsu.edu/plants/pinus-strobus/>

License: <http://creativecommons.org/licenses/by/4.0/legalcode>

P23 · Eastern White Pine · seed cone · pp. 15

Forest and Kim Starr · CC BY 4.0 · *Pinus strobus*

Checked 2026-09-28. NC State Plant Toolbox identifies this image under the stated species; visible structures checked against the profile description.

Source preparation: Unmodified; scaled to fit, no crop.

Source: <https://plants.ces.ncsu.edu/plants/pinus-strobus/>

License: <http://creativecommons.org/licenses/by/4.0/legalcode>

Image credits · continued

P24 · Eastern White Pine · seed · pp. 16

Steve Hurst, USDA-NRCS PLANTS Database · Public domain (U.S. government work) · *Pinus strobus*

Checked 2026-09-28. USDA-NRCS PLANTS Database photograph by Steve Hurst, mirrored on Commons and explicitly identified as *Pinus strobus* seeds; the wings have been removed for the seed close view.

Source preparation: Unmodified; scaled to fit, no crop.

Source: https://commons.wikimedia.org/wiki/File:Pinus_strobus_seeds.jpg

License: <https://creativecommons.org/publicdomain/mark/1.0/>

P25 · Eastern White Pine · intact five-needle bundle · pp. 16

Nobbip · CC BY-SA 3.0 Unported · *Pinus strobus*

Checked 2026-09-29. Photographer original Commons record explicitly identifies the taxon; visible structure is consistent with the assigned feature. Taxon identification is source-based, not inferred solely from this photograph.

Source preparation: Unmodified original source file; scaled to fit, no crop.

Source: https://commons.wikimedia.org/wiki/File:Weymouthkiefer_Pinus_strobus_5er_B%C3%BCschel_0111.jpg

License: <https://creativecommons.org/licenses/by-sa/3.0/>

P26 · Hickory · leaf · pp. 17

Douglas Goldman, USDA · CC BY-NC 4.0 · *Carya glabra*

Checked 2026-09-28. NC State Plant Toolbox identifies this image under the stated species; visible structures checked against the profile description.

Source preparation: Unmodified; scaled to fit, no crop.

Source: <https://plants.ces.ncsu.edu/plants/carya-glabra/>

License: <http://creativecommons.org/licenses/by-nc/4.0/legalcode>

P27 · Hickory · bark · pp. 17

Douglas Goldman, USDA · CC BY-NC 4.0 · *Carya glabra*

Checked 2026-09-28. NC State Plant Toolbox identifies this image under the stated species; visible structures checked against the profile description.

Source preparation: Unmodified; scaled to fit, no crop.

Source: <https://plants.ces.ncsu.edu/plants/carya-glabra/>

License: <http://creativecommons.org/licenses/by-nc/4.0/legalcode>

P28 · Hickory · nut · pp. 17

Douglas Goldman, USDA · CC BY-NC 4.0 · *Carya glabra*

Checked 2026-09-28. NC State Plant Toolbox identifies this image under the stated species; visible structures checked against the profile description.

Source preparation: Unmodified; scaled to fit, no crop.

Source: <https://plants.ces.ncsu.edu/plants/carya-glabra/>

License: <http://creativecommons.org/licenses/by-nc/4.0/legalcode>

P29 · Hickory · bark · pp. 18

Douglas Goldman, USDA · CC BY-NC 4.0 · *Carya ovata*

Checked 2026-09-28. NC State Plant Toolbox identifies this image under the stated species; visible structures checked against the profile description.

Source preparation: Unmodified; scaled to fit, no crop.

Source: <https://plants.ces.ncsu.edu/plants/carya-ovata/>

License: <http://creativecommons.org/licenses/by-nc/4.0/legalcode>

Image credits · continued

P30 · Hickory · leaf · pp. 18

Douglas Goldman, USDA · CC BY-NC 4.0 · *Carya ovata*

Checked 2026-09-28. NC State Plant Toolbox identifies this image under the stated species; visible structures checked against the profile description.

Source preparation: Unmodified; scaled to fit, no crop.

Source: <https://plants.ces.ncsu.edu/plants/carya-ovata/>

License: <http://creativecommons.org/licenses/by-nc/4.0/legalcode>

P31 · Hickory · nut · pp. 19

Douglas Goldman, USDA · CC BY-NC 4.0 · *Carya ovata*

Checked 2026-09-28. NC State Plant Toolbox identifies this image under the stated species; visible structures checked against the profile description.

Source preparation: Unmodified; scaled to fit, no crop.

Source: <https://plants.ces.ncsu.edu/plants/carya-ovata/>

License: <http://creativecommons.org/licenses/by-nc/4.0/legalcode>

P32 · Hickory · published seed section · pp. 19

USDA Forest Service; chapter by Franklin T. Bonner; figure artist not separately credited · Public domain (federal publication figure; no third-party credit) · *Carya ovata*

Checked 2026-09-28. Woody Plant Seed Manual identifies Figure 2 explicitly as *Carya ovata*. Figure, species label, chapter authorship and internal seed structures checked.

Source preparation: Figure 2 extracted from PDF page 347 at 300 dpi; surrounding page material excluded; drawing and original labels unchanged.

Source: https://www.fs.usda.gov/rm/pubs_series/wo/wo_ah727.pdf#page=347

License: <https://www.usa.gov/government-copyright>

P33 · Loblolly Pine · needle · pp. 20

Tom Glasgow · CC BY 4.0 · *Pinus taeda*

Checked 2026-09-28. NC State Plant Toolbox identifies this image under the stated species; visible structures checked against the profile description.

Source preparation: Unmodified; scaled to fit, no crop.

Source: <https://plants.ces.ncsu.edu/plants/pinus-taeda/>

License: <http://creativecommons.org/licenses/by/4.0/legalcode>

P34 · Loblolly Pine · bark · pp. 20

Hellohowareyoudoing · CC0 1.0 · *Pinus taeda*

Checked 2026-09-28. NC State Plant Toolbox identifies this image under the stated species; visible structures checked against the profile description.

Source preparation: Unmodified; scaled to fit, no crop.

Source: <https://plants.ces.ncsu.edu/plants/pinus-taeda/>

License: <https://creativecommons.org/publicdomain/zero/1.0/>

P35 · Loblolly Pine · seed cone · pp. 20

zizzybaloobah · CC BY-NC 2.0 · *Pinus taeda*

Checked 2026-09-28. NC State Plant Toolbox identifies this image under the stated species; visible structures checked against the profile description.

Source preparation: Unmodified; scaled to fit, no crop.

Source: <https://plants.ces.ncsu.edu/plants/pinus-taeda/>

License: <http://creativecommons.org/licenses/by-nc/2.0/>

Image credits · continued

P36 · Loblolly Pine · published botanical diagram · pp. 21

John Tobe · CC BY-NC 4.0 · Pinus taeda

Checked 2026-09-28. NC State publishes this labeled botanical illustration by John David Tobe under the stated species. Labels and structures checked; distinguish illustration from photograph.

Source preparation: Unmodified; scaled to fit, no crop.

Source: <https://plants.ces.ncsu.edu/plants/pinus-taeda/>

License: <http://creativecommons.org/licenses/by-nc/4.0/legalcode>

P37 · Longleaf Pine · needle · pp. 22

Cathy Dewitt · CC BY 4.0 · Pinus palustris

Checked 2026-09-28. NC State Plant Toolbox identifies this image under the stated species; visible structures checked against the profile description.

Source preparation: Unmodified; scaled to fit, no crop.

Source: <https://plants.ces.ncsu.edu/plants/pinus-palustris/>

License: <http://creativecommons.org/licenses/by/4.0/legalcode>

P38 · Longleaf Pine · bark · pp. 22

Kerry Woods · CC BY-NC-ND 4.0 · Pinus palustris

Checked 2026-09-28. NC State Plant Toolbox identifies this image under the stated species; visible structures checked against the profile description.

Source preparation: Unmodified; scaled to fit, no crop.

Source: <https://plants.ces.ncsu.edu/plants/pinus-palustris/>

License: <http://creativecommons.org/licenses/by-nc-nd/4.0/legalcode>

P39 · Longleaf Pine · seed cone · pp. 22

Cathy DeWitt · CC BY-NC-ND 4.0 · Pinus palustris

Checked 2026-09-28. NC State Plant Toolbox identifies this image under the stated species; visible structures checked against the profile description.

Source preparation: Unmodified; scaled to fit, no crop.

Source: <https://plants.ces.ncsu.edu/plants/pinus-palustris/>

License: <http://creativecommons.org/licenses/by-nc-nd/4.0/legalcode>

P40 · Longleaf Pine · seedling with seed · pp. 23

Douglas Goldman, USDA · CC BY-NC 4.0 · Pinus palustris

Checked 2026-09-28. NC State Plant Toolbox identifies this image under the stated species; visible structures checked against the profile description.

Source preparation: Unmodified; scaled to fit, no crop.

Source: <https://plants.ces.ncsu.edu/plants/pinus-palustris/>

License: <http://creativecommons.org/licenses/by-nc/4.0/legalcode>

P41 · Longleaf Pine · published botanical diagram · pp. 23

John Tobe · CC BY-NC 4.0 · Pinus palustris

Checked 2026-09-28. NC State publishes this labeled botanical illustration by John David Tobe under the stated species. Labels and structures checked; distinguish illustration from photograph.

Source preparation: Unmodified; scaled to fit, no crop.

Source: <https://plants.ces.ncsu.edu/plants/pinus-palustris/>

License: <http://creativecommons.org/licenses/by-nc/4.0/legalcode>

Image credits · continued

P42 · Magnolia · leaf · pp. 24

Cathy Dewitt · CC BY 4.0 · *Magnolia grandiflora*

Checked 2026-09-28. NC State Plant Toolbox identifies this image under the stated species; visible structures checked against the profile description.

Source preparation: Unmodified; scaled to fit, no crop.

Source: <https://plants.ces.ncsu.edu/plants/magnolia-grandiflora/>

License: <http://creativecommons.org/licenses/by/4.0/legalcode>

P43 · Magnolia · bark · pp. 24

Jim Robbins · CC BY-NC-ND 4.0 · *Magnolia grandiflora*

Checked 2026-09-28. NC State Plant Toolbox identifies this image under the stated species; visible structures checked against the profile description.

Source preparation: Unmodified; scaled to fit, no crop.

Source: <https://plants.ces.ncsu.edu/plants/magnolia-grandiflora/>

License: <http://creativecommons.org/licenses/by-nc-nd/4.0/legalcode>

P44 · Magnolia · seed and fruit · pp. 24

Cathy Dewitt · CC BY-NC 4.0 · *Magnolia grandiflora*

Checked 2026-09-28. NC State Plant Toolbox identifies this image under the stated species; visible structures checked against the profile description.

Source preparation: Unmodified; scaled to fit, no crop.

Source: <https://plants.ces.ncsu.edu/plants/magnolia-grandiflora/>

License: <http://creativecommons.org/licenses/by-nc/4.0/legalcode>

P45 · Magnolia · flower · pp. 25

Cathy DeWitt · CC BY-NC-ND 4.0 · *Magnolia grandiflora*

Checked 2026-09-28. NC State Plant Toolbox identifies this image under the stated species; visible structures checked against the profile description.

Source preparation: Unmodified; scaled to fit, no crop.

Source: <https://plants.ces.ncsu.edu/plants/magnolia-grandiflora/>

License: <http://creativecommons.org/licenses/by-nc-nd/4.0/legalcode>

P46 · Oak · leaf · pp. 26

Bruce Kirchoff · CC BY 2.0 · *Quercus alba*

Checked 2026-09-28. NC State Plant Toolbox identifies this image under the stated species; visible structures checked against the profile description.

Source preparation: Unmodified; scaled to fit, no crop.

Source: <https://plants.ces.ncsu.edu/plants/quercus-alba/>

License: <http://creativecommons.org/licenses/by/2.0/legalcode>

P47 · Oak · bark detail · pp. 26

Jim Robbins · CC BY-NC-ND 4.0 · *Quercus alba*

Checked 2026-09-29. NC State Extension Gardener Plant Toolbox identifies the photograph on its species page; the visible morphology agrees with the described taxon.

Source preparation: Unmodified source file; scaled to fit, no crop.

Source: <https://plants.ces.ncsu.edu/plants/quercus-alba/>

License: <http://creativecommons.org/licenses/by-nc-nd/4.0/legalcode>

Image credits · continued

P48 · Oak · nut · pp. 26

US Government employee · Public Domain Mark 1.0 · *Quercus phellos*

Checked 2026-09-28. NC State Plant Toolbox identifies this image under the stated species; visible structures checked against the profile description.

Source preparation: Unmodified; scaled to fit, no crop.

Source: <https://plants.ces.ncsu.edu/plants/quercus-phellos/>

License: <https://creativecommons.org/publicdomain/mark/1.0/>

P49 · Oak · leaf · pp. 27

Michael Wolf · CC BY-SA 3.0 · *Quercus phellos*

Checked 2026-09-28. NC State Plant Toolbox identifies this image under the stated species; visible structures checked against the profile description.

Source preparation: Unmodified; scaled to fit, no crop.

Source: <https://plants.ces.ncsu.edu/plants/quercus-phellos/>

License: <https://creativecommons.org/licenses/by-sa/3.0/deed.en>

P50 · Oak · germinating nut · pp. 27

Hope Duckworth · CC BY 4.0 · *Quercus alba*

Checked 2026-09-28. NC State Plant Toolbox identifies this image under the stated species; visible structures checked against the profile description.

Source preparation: Unmodified; scaled to fit, no crop.

Source: <https://plants.ces.ncsu.edu/plants/quercus-alba/>

License: <http://creativecommons.org/licenses/by/4.0/legalcode>

P51 · Oak · published seed section · pp. 28

USDA Forest Service; chapter by Franklin T. Bonner; figure artist not separately credited · Public domain (federal publication figure; no third-party credit) · *Quercus rubra*

Checked 2026-09-28. Woody Plant Seed Manual identifies Figure 2 explicitly as *Quercus rubra*. Figure, species label, chapter authorship and internal seed structures checked.

Source preparation: Figure 2 extracted from PDF page 945 at 300 dpi; surrounding page material excluded; drawing and original labels unchanged.

Source: https://www.fs.usda.gov/rm/pubs_series/wo/wo_ah727.pdf#page=945

License: <https://www.usa.gov/government-copyright>

P52 · Red Maple · leaf · pp. 29

Frankenschulz · CC BY-NC-SA 2.0 · *Acer rubrum*

Checked 2026-09-28. NC State Plant Toolbox identifies this image under the stated species; visible structures checked against the profile description.

Source preparation: Unmodified; scaled to fit, no crop.

Source: <https://plants.ces.ncsu.edu/plants/acer-rubrum/>

License: <http://creativecommons.org/licenses/by-nc-sa/2.0/legalcode>

P53 · Red Maple · bark · pp. 29

Jim Robbins · CC BY-NC-ND 4.0 · *Acer rubrum*

Checked 2026-09-28. NC State Plant Toolbox identifies this image under the stated species; visible structures checked against the profile description.

Source preparation: Unmodified; scaled to fit, no crop.

Source: <https://plants.ces.ncsu.edu/plants/acer-rubrum/>

License: <http://creativecommons.org/licenses/by-nc-nd/4.0/legalcode>

Image credits • continued

P54 • Red Maple • fruit • pp. 29

Carol Jacobs-Carre • CC BY-SA 3.0 • *Acer rubrum*

Checked 2026-09-28. NC State Plant Toolbox identifies this image under the stated species; visible structures checked against the profile description.

Source preparation: Unmodified; scaled to fit, no crop.

Source: <https://plants.ces.ncsu.edu/plants/acer-rubrum/>

License: <https://creativecommons.org/licenses/by-sa/3.0/deed.en>

P55 • Red Maple • published fruit and seed sections • pp. 30

Charles Edward Faxon (artist), in Charles Sprague Sargent, *The Silva of North America*, vol. II (1891); digitization: Missouri Botanical Garden / Botanicus / Internet Archive • Public domain (published 1891) • *Acer rubrum*

Checked 2026-09-29. Plate XCIV explicitly labels *Acer rubrum*. Matching primary legend at archive image n207 identifies 8 fruit section, 9 seed section, 10 embryo, 11 embryo displayed. Native 3992×5560 scan and original legend retained; same historical drawing as former 1895 scan.

Source preparation: Two rectangular extracts from native 3992×5560 scan: figures 10–11 at (2650,3350,3250,3740), figures 8–9 at (2400,3780,3250,4320). Placed unchanged at (250,0) and (0,430) on 850×970 white canvas to exclude adjacent figure 7; no resampling, retouching, generated content or alteration to drawings/numbers.

Source: <https://archive.org/details/mobot31753000329224/page/n208/mode/1up>

License: <https://creativecommons.org/publicdomain/mark/1.0/>

P56 • Red Maple • opposite leaf-stalk attachment • pp. 30

Baskauf, Steven J. • CC BY 4.0 • *Acer rubrum*

Checked 2026-09-29. Source photographer identifies this taxon in the Vanderbilt Bioimages collection, archived with specimen association and license by Zenodo; visible morphology is consistent.

Source preparation: Unmodified source file; scaled to fit, no crop.

Source: <https://zenodo.org/records/11019970>

License: <https://creativecommons.org/licenses/by/4.0/>

P57 • River Birch • leaf • pp. 31

Kathleen Moore • CC BY 2.0 • *Betula nigra*

Checked 2026-09-28. NC State Plant Toolbox identifies this image under the stated species; visible structures checked against the profile description.

Source preparation: Unmodified; scaled to fit, no crop.

Source: <https://plants.ces.ncsu.edu/plants/betula-nigra/>

License: <http://creativecommons.org/licenses/by/2.0/legalcode>

P58 • River Birch • bark • pp. 31

Kathleen Moore • CC BY 2.0 • *Betula nigra*

Checked 2026-09-28. NC State Plant Toolbox identifies this image under the stated species; visible structures checked against the profile description.

Source preparation: Unmodified; scaled to fit, no crop.

Source: <https://plants.ces.ncsu.edu/plants/betula-nigra/>

License: <http://creativecommons.org/licenses/by/2.0/legalcode>

P59 • River Birch • fruit • pp. 31

Steven J. Baskauf • CC BY 4.0 • *Betula nigra*

Checked 2026-09-28. Vanderbilt University Arboretum specimen 7-242, identified as *Betula nigra* by Steven J. Baskauf; fruit/winged nutlet view checked.

Source preparation: Unmodified; scaled to fit, no crop.

Source: <https://bioimages.vanderbilt.edu/baskauf/34037.htm>

License: <https://creativecommons.org/licenses/by/4.0/>

Image credits · continued

P60 · River Birch · seed-bearing nutlet · pp. 32

Steven J. Baskauf · CC BY 4.0 · *Betula nigra*

Checked 2026-09-28. Vanderbilt University Arboretum specimen 7-242, identified as *Betula nigra* by Steven J. Baskauf; fruit/winged nutlet view checked.

Source preparation: Unmodified; scaled to fit, no crop.

Source: <https://bioimages.vanderbilt.edu/baskauf/34042.htm>

License: <https://creativecommons.org/licenses/by/4.0/>

P61 · River Birch · published seed section · pp. 32

USDA Forest Service; chapter by Robert P. Karrfalt; figure artist not separately credited · Public domain (federal publication figure; no third-party credit) · *Betula nigra*

Checked 2026-09-29. Woody Plant Seed Manual identifies Figure 3 explicitly as *Betula nigra*. Figure, species label, chapter authorship and internal seed structures checked.

Source preparation: Native /Im2 JPEG2000 image object extracted from source PDF page 319 and losslessly decoded to PNG at 420×323; original drawing and bitmap labels unchanged. No vector label overlay occurs within this figure. Earlier 300dpi rendering enlarged source pixels and is retained only as historical derivative.

Source: https://www.fs.usda.gov/rm/pubs_series/wo/wo_ah727.pdf#page=319

License: <https://www.usa.gov/government-copyright>

P62 · River Birch · leaf edge detail · pp. 32

Baskauf, Steven J. · CC BY 4.0 · *Betula nigra*

Checked 2026-09-29. Source photographer identifies this taxon in the Vanderbilt Bioimages collection, archived with specimen association and license by Zenodo; visible morphology is consistent.

Source preparation: Unmodified source file; scaled to fit, no crop.

Source: <https://zenodo.org/records/11027999>

License: <https://creativecommons.org/licenses/by/4.0/>

P63 · Shortleaf Pine · needle · pp. 33

Nate Hartley · CC BY-NC 4.0 · *Pinus echinata*

Checked 2026-09-28. NC State Plant Toolbox identifies this image under the stated species; visible structures checked against the profile description.

Source preparation: Unmodified; scaled to fit, no crop.

Source: <https://plants.ces.ncsu.edu/plants/pinus-echinata/>

License: <http://creativecommons.org/licenses/by-nc/4.0/legalcode>

P64 · Shortleaf Pine · Bark pits and resin · pp. 33

Laura Clark · CC BY 4.0 · *Pinus echinata*

Checked 2026-09-29. iNaturalist observation 144624434 research-grade *Pinus echinata* checked September 29, 2026; bplant photo 2084 and its Shortleaf/Loblolly comparison explicitly identify this exact photograph as bark resin pockets. Source observation API and bplant attribution retained. Photo license cc-by is 4.0 in iNaturalist license convention.

Source preparation: Unmodified original source file; scaled to fit, no crop.

Source: <https://www.inaturalist.org/photos/248261070>

License: <https://creativecommons.org/licenses/by/4.0/>

P65 · Shortleaf Pine · seed cone · pp. 33

Joshua Hodge · CC BY-NC 4.0 · *Pinus echinata*

Checked 2026-09-28. NC State Plant Toolbox identifies this image under the stated species; visible structures checked against the profile description.

Source preparation: Unmodified; scaled to fit, no crop.

Source: <https://plants.ces.ncsu.edu/plants/pinus-echinata/>

License: <http://creativecommons.org/licenses/by-nc/4.0/legalcode>

Image credits · continued

P66 · Shortleaf Pine · exposed seeds · pp. 34

Pinethicket at English Wikipedia · CC BY-SA 3.0 · *Pinus echinata*

Checked 2026-09-28. Original photographer identifies the cut cone as *Pinus echinata* and points to seeds with yellow arrows; visible cone structure is consistent with the species description.

Source preparation: Unmodified; scaled to fit, no crop.

Source: https://commons.wikimedia.org/wiki/File:Shortleaf_cone.jpg

License: <https://creativecommons.org/licenses/by-sa/3.0/>

P67 · Shortleaf Pine · intact natural needle bundles · pp. 34

Leila Dasher · CC BY 4.0 · *Pinus echinata*

Checked 2026-09-29. iNaturalist observation 150466320 is research-grade *Pinus echinata* with several current agreeing species identifications on September 29, 2026. Earlier *Pinus glabra* identifications were withdrawn/corrected; history retained in source API. Visible detached natural fascicle bases provide the assigned count axis.

Source preparation: Unmodified original source file; scaled to fit, no crop.

Source: <https://www.inaturalist.org/photos/259459693>

License: <https://creativecommons.org/licenses/by/4.0/>

P68 · Sweetgum · leaf · pp. 35

Maggie · CC BY-NC 2.0 · *Liquidambar styraciflua*

Checked 2026-09-28. NC State Plant Toolbox identifies this image under the stated species; visible structures checked against the profile description.

Source preparation: Unmodified; scaled to fit, no crop.

Source: <https://plants.ces.ncsu.edu/plants/liquidambar-styraciflua/>

License: <http://creativecommons.org/licenses/by-nc/2.0/>

P69 · Sweetgum · bark · pp. 35

skdavidson · CC-BY-SA 2.0 · *Liquidambar styraciflua*

Checked 2026-09-28. NC State Plant Toolbox identifies this image under the stated species; visible structures checked against the profile description.

Source preparation: Unmodified; scaled to fit, no crop.

Source: <https://plants.ces.ncsu.edu/plants/liquidambar-styraciflua/>

License: <https://creativecommons.org/licenses/by-sa/2.0/>

P70 · Sweetgum · fruit · pp. 35

Cathy DeWitt · CC BY-NC 4.0 · *Liquidambar styraciflua*

Checked 2026-09-28. NC State Plant Toolbox identifies this image under the stated species; visible structures checked against the profile description.

Source preparation: Unmodified; scaled to fit, no crop.

Source: <https://plants.ces.ncsu.edu/plants/liquidambar-styraciflua/>

License: <http://creativecommons.org/licenses/by-nc/4.0/legalcode>

P71 · Sweetgum · seed · pp. 36

Gmihail · CC BY-SA 3.0 RS · *Liquidambar styraciflua*

Checked 2026-09-28. Original photographer identifies the seeds as the stated species; visible seed/wing form checked against USDA Woody Plant Seed Manual and NC State descriptions.

Source preparation: Unmodified; scaled to fit, no crop.

Source: https://commons.wikimedia.org/wiki/File:Liquidambar_styraciflua_seeds.jpg

License: <https://creativecommons.org/licenses/by-sa/3.0/rs/deed.en>

Image credits · continued

P72 · Carolina Lily · flower · pp. 37

Darrel Brown · CC BY-NC 4.0 · *Lilium michauxii*

Checked 2026-09-28. NC State Plant Toolbox identifies this image under the stated species; visible structures checked against the profile description.

Source preparation: Unmodified; scaled to fit, no crop.

Source: <https://plants.ces.ncsu.edu/plants/lilium-michauxii/>

License: <http://creativecommons.org/licenses/by-nc/4.0/legalcode>

P73 · Carolina Lily · leaf · pp. 37

Andrea Laine · CC BY-NC 4.0 · *Lilium michauxii*

Checked 2026-09-28. NC State Plant Toolbox identifies this image under the stated species; visible structures checked against the profile description.

Source preparation: Unmodified; scaled to fit, no crop.

Source: <https://plants.ces.ncsu.edu/plants/lilium-michauxii/>

License: <http://creativecommons.org/licenses/by-nc/4.0/legalcode>

P74 · Carolina Lily · seed · pp. 37

Evan Raskin · CC BY-NC 4.0 · *Lilium michauxii*

Checked 2026-09-28. NC State Plant Toolbox identifies this image under the stated species; visible structures checked against the profile description.

Source preparation: Unmodified; scaled to fit, no crop.

Source: <https://plants.ces.ncsu.edu/plants/lilium-michauxii/>

License: <http://creativecommons.org/licenses/by-nc/4.0/legalcode>

P75 · Eastern Poison Ivy · three leaflets and stalk attachment · pp. 38

R. A. Nonenmacher · CC BY-SA 4.0 · *Toxicodendron radicans*

Checked 2026-09-29. NC State Extension Gardener Plant Toolbox identifies the photograph on its species page; the visible morphology agrees with the described taxon.

Source preparation: Unmodified source file; scaled to fit, no crop.

Source: <https://plants.ces.ncsu.edu/plants/toxicodendron-radicans/>

License: <http://creativecommons.org/licenses/by-sa/4.0/legalcode>

P76 · Eastern Poison Ivy · climbing structure · pp. 38

Jim Robbins · CC BY-NC-ND 4.0 · *Toxicodendron radicans*

Checked 2026-09-28. NC State Plant Toolbox identifies this image under the stated species; visible structures checked against the profile description.

Source preparation: Unmodified; scaled to fit, no crop.

Source: <https://plants.ces.ncsu.edu/plants/toxicodendron-radicans/>

License: <http://creativecommons.org/licenses/by-nc-nd/4.0/legalcode>

P77 · Eastern Poison Ivy · fruit · pp. 38

Jim Robbins · CC BY-NC-ND 4.0 · *Toxicodendron radicans*

Checked 2026-09-28. NC State Plant Toolbox identifies this image under the stated species; visible structures checked against the profile description.

Source preparation: Unmodified; scaled to fit, no crop.

Source: <https://plants.ces.ncsu.edu/plants/toxicodendron-radicans/>

License: <http://creativecommons.org/licenses/by-nc-nd/4.0/legalcode>

Image credits · continued

P78 · English Ivy · leaf · pp. 39

Douglas Goldman, USDA · CC BY-NC 4.0 · Hedera helix

Checked 2026-09-28. NC State Plant Toolbox identifies this image under the stated species; visible structures checked against the profile description.

Source preparation: Unmodified; scaled to fit, no crop.

Source: <https://plants.ces.ncsu.edu/plants/hedera-helix/>

License: <http://creativecommons.org/licenses/by-nc/4.0/legalcode>

P79 · English Ivy · climbing rootlets · pp. 39

Hladac · CC BY-SA 4.0 · Hedera helix

Checked 2026-09-28. Original photographer identifies Hedera helix aerial roots; visible rootlets and attachment to bark checked against NC State description.

Source preparation: Unmodified; scaled to fit, no crop.

Source: [https://commons.wikimedia.org/wiki/File:\(ms\)_Hedera_helix_9.jpg](https://commons.wikimedia.org/wiki/File:(ms)_Hedera_helix_9.jpg)

License: <https://creativecommons.org/licenses/by-sa/4.0/>

P80 · English Ivy · adult leaf and flowers · pp. 39

Forest and Kim Starr · CC BY 2.0 · Hedera helix

Checked 2026-09-28. NC State Plant Toolbox identifies this image under the stated species; visible structures checked against the profile description.

Source preparation: Unmodified; scaled to fit, no crop.

Source: <https://plants.ces.ncsu.edu/plants/hedera-helix/>

License: <http://creativecommons.org/licenses/by/2.0/legalcode>

P81 · English Ivy · growth form · pp. 40

Donald Hobern · CC BY 2.0 · Hedera helix

Checked 2026-09-29. Exact larger original of NC State Plant Toolbox photo, visually matched; photographer Donald Hobern identifies Hedera helix, Common Ivy, Soborg, Denmark, 5 June 2014. Primary source explicitly licenses CC BY 2.0.

Source preparation: Original 3000×4000 photographer file; unmodified, scaled to fit, no crop or upscaling.

Source: <https://www.flickr.com/photos/dhobern/14353016572/>

License: <http://creativecommons.org/licenses/by/2.0/legalcode>

P82 · Kudzu · complete compound leaves · pp. 41

CameliaTWU · CC BY-NC-ND 4.0 · Pueraria montana var. lobata

Checked 2026-09-28. NC State Plant Toolbox identifies this image under the stated species; visible structures checked against the profile description.

Source preparation: Unmodified; scaled to fit, no crop.

Source: <https://plants.ces.ncsu.edu/plants/pueraria-montana-var-lobata/>

License: <http://creativecommons.org/licenses/by-nc-nd/4.0/legalcode>

P83 · Kudzu · leaflet close-up · pp. 41

Martin LaBar · CC BY-NC 2.0 · Pueraria montana var. lobata

Checked 2026-09-28. NC State Plant Toolbox identifies this image under the stated species; visible structures checked against the profile description.

Source preparation: Unmodified; scaled to fit, no crop.

Source: <https://plants.ces.ncsu.edu/plants/pueraria-montana-var-lobata/>

License: <http://creativecommons.org/licenses/by-nc/2.0/>

Image credits · continued

P84 · Kudzu · fruit · pp. 41

Yamatsu · CC0 · *Pueraria montana* var. *lobata*

Checked 2026-09-28. NC State Plant Toolbox identifies this image under the stated species; visible structures checked against the profile description.

Source preparation: Unmodified; scaled to fit, no crop.

Source: <https://plants.ces.ncsu.edu/plants/pueraria-montana-var-lobata/>

License: <https://creativecommons.org/about/cc0/>

P85 · Kudzu · flower · pp. 42

Cathy Dewitt · CC BY 4.0 · *Pueraria montana* var. *lobata*

Checked 2026-09-28. NC State Plant Toolbox identifies this image under the stated species; visible structures checked against the profile description.

Source preparation: Unmodified; scaled to fit, no crop.

Source: <https://plants.ces.ncsu.edu/plants/pueraria-montana-var-lobata/>

License: <http://creativecommons.org/licenses/by/4.0/legalcode>

P86 · Scuppernong Grape · leaf · pp. 43

Cathy Dewitt · CC BY 4.0 · *Vitis rotundifolia*

Checked 2026-09-28. NC State Plant Toolbox identifies this image under the stated species; visible structures checked against the profile description. These are muscadine species views, not evidence of a particular cultivar.

Source preparation: Unmodified; scaled to fit, no crop.

Source: <https://plants.ces.ncsu.edu/plants/vitis-rotundifolia/>

License: <http://creativecommons.org/licenses/by/4.0/legalcode>

P87 · Scuppernong Grape · tendril · pp. 43

Cathy Dewitt · CC BY 4.0 · *Vitis rotundifolia*

Checked 2026-09-28. NC State Plant Toolbox identifies this image under the stated species; visible structures checked against the profile description. These are muscadine species views, not evidence of a particular cultivar.

Source preparation: Unmodified; scaled to fit, no crop.

Source: <https://plants.ces.ncsu.edu/plants/vitis-rotundifolia/>

License: <http://creativecommons.org/licenses/by/4.0/legalcode>

P88 · Scuppernong Grape · fruit · pp. 43

Randal Cooper · CC BY-SA 2.0 · *Vitis rotundifolia*; labeled 'Scuppernong' by photographer

Checked 2026-09-28. Original photographer labels market fruit Scuppernongs; visible round bronze fruit is consistent with bronze muscadines. Cultivar attribution is the source identification, not independently established from appearance alone.

Source preparation: Unmodified; scaled to fit, no crop.

Source: <https://commons.wikimedia.org/wiki/File:Scuppernongs.jpg>

License: <https://creativecommons.org/licenses/by-sa/2.0/>

P89 · Venus Flytrap · trigger hairs and marginal teeth · pp. 44, 45

Noah Elhardt · CC BY-SA 2.5 Generic · *Dionaea muscipula*

Checked 2026-09-29. Photographer original Commons record explicitly identifies the taxon; visible structure is consistent with the assigned feature. Taxon identification is source-based, not inferred solely from this photograph.

Source preparation: Unmodified original source file; scaled to fit, no crop.

Source: https://commons.wikimedia.org/wiki/File:Venus_Flytrap_showing_trigger_hairs.jpg

License: <https://creativecommons.org/licenses/by-sa/2.5/>

Image credits · continued

P90 · Venus Flytrap · whole plant · pp. 44

Cathy Dewitt · CC BY 4.0 · *Dionaea muscipula*

Checked 2026-09-28. NC State Plant Toolbox identifies this image under the stated species; visible structures checked against the profile description.

Source preparation: Unmodified; scaled to fit, no crop.

Source: <https://plants.ces.ncsu.edu/plants/dionaea-muscipula/>

License: <http://creativecommons.org/licenses/by/4.0/legalcode>

P91 · Venus Flytrap · flowers above trap rosette · pp. 44, 45

NC Orchid · CC BY 2.0 Generic · *Dionaea muscipula*

Checked 2026-09-29. Original Flickr photograph by NC Orchid, mirrored with attribution/license review on Commons; source title and description identify *Dionaea muscipula*. Visible flowers, stalks and basal trap rosette are consistent.

Source preparation: Unmodified original source file; scaled to fit, no crop.

Source: [https://commons.wikimedia.org/wiki/File:Dionaea_muscipula_in_flower_\(16977455134\).jpg](https://commons.wikimedia.org/wiki/File:Dionaea_muscipula_in_flower_(16977455134).jpg)

License: <https://creativecommons.org/licenses/by/2.0/>

P92 · American Alligator · whole body · pp. 46

al_bennett · CC BY-NC 4.0 · *Alligator mississippiensis*

Checked 2026-09-28. Research-grade observation identifies *Alligator mississippiensis*; photo ID matched to its photos. Visually checked for the captioned features; record identity is evidence, not infallible certification.

Source preparation: Unmodified source asset; scale to fit, no crop.

Source: <https://www.inaturalist.org/photos/11707137>

License: <https://creativecommons.org/licenses/by-nc/4.0/>

P93 · American Alligator · banded body · pp. 46

dogbowlbookpile · CC BY-NC 4.0 · *Alligator mississippiensis*

Checked 2026-09-28. Research-grade observation identifies *Alligator mississippiensis*; photo ID matched to its photos. Visually checked for the captioned features; record identity is evidence, not infallible certification.

Source preparation: Unmodified source asset; scale to fit, no crop.

Source: <https://www.inaturalist.org/photos/422345040>

License: <https://creativecommons.org/licenses/by-nc/4.0/>

P94 · Eastern Fence Lizard · whole body · pp. 47

Creator not stated; CC0 source · CC0 1.0 · *Sceloporus undulatus*

Checked 2026-09-28. Research-grade observation identifies *Sceloporus undulatus*; photo ID matched to its photos. Visually checked for the captioned features; record identity is evidence, not infallible certification.

Source preparation: Unmodified source asset; scale to fit, no crop.

Source: <https://www.inaturalist.org/photos/123858448>

License: <https://creativecommons.org/publicdomain/zero/1.0/>

P95 · Eastern Fence Lizard · rough scales · pp. 47

Quintin Ellison · CC BY-NC 4.0 · *Sceloporus undulatus*

Checked 2026-09-28. Research-grade observation identifies *Sceloporus undulatus*; photo ID matched to its photos. Visually checked for the captioned features; record identity is evidence, not infallible certification.

Source preparation: Unmodified source asset; scale to fit, no crop.

Source: <https://www.inaturalist.org/photos/622189534>

License: <https://creativecommons.org/licenses/by-nc/4.0/>

Image credits · continued

P96 · Eastern Fence Lizard · male blue throat · pp. 48

rabbiter · CC BY-NC 4.0 · *Sceloporus undulatus*

Checked 2026-09-28. Research-grade observation identifies *Sceloporus undulatus*; photo ID matched to its photos. Visually checked for the captioned features; record identity is evidence, not infallible certification.

Source preparation: Unmodified source asset; scale to fit, no crop.

Source: <https://www.inaturalist.org/photos/123707472>

License: <https://creativecommons.org/licenses/by-nc/4.0/>

P97 · Eastern Glass Lizard · whole body · pp. 49

grinnin · CC BY-NC 4.0 · *Ophisaurus ventralis*

Checked 2026-09-28. Research-grade observation identifies *Ophisaurus ventralis*; photo ID matched to its photos. Visually checked for the captioned features; record identity is evidence, not infallible certification.

Source preparation: Unmodified source asset; scale to fit, no crop.

Source: <https://www.inaturalist.org/photos/322159117>

License: <https://creativecommons.org/licenses/by-nc/4.0/>

P98 · Eastern Glass Lizard · Eye and ear opening · pp. 49, 50

Josiah Londerée · CC BY 4.0 · *Ophisaurus ventralis*

Checked 2026-09-29. iNaturalist observation 107780851 is research grade with community taxon 31981; 9 identification count reported by API. Actual diagnostic feature independently inspected; source identification is not inferred solely from the caption.

Source preparation: Unmodified original; fit/contain at native aspect ratio. No crop, rotation, enhancement, or generated detail.

Source: <https://www.inaturalist.org/photos/181342075>

License: <https://creativecommons.org/licenses/by/4.0/>

P99 · Green Anole · dewlap · pp. 51

Michael J. Papay · CC BY 4.0 · *Anolis carolinensis*

Checked 2026-09-28. Research-grade observation identifies *Anolis carolinensis*; photo ID matched to its photos. Visually checked for the captioned features; record identity is evidence, not infallible certification.

Source preparation: Unmodified source asset; scale to fit, no crop.

Source: <https://www.inaturalist.org/photos/498849521>

License: <https://creativecommons.org/licenses/by/4.0/>

P100 · Green Anole · brown form · pp. 51

Tommy Farquhar · CC BY-NC 4.0 · *Anolis carolinensis*

Checked 2026-09-28. Research-grade observation identifies *Anolis carolinensis*; photo ID matched to its photos. Visually checked for the captioned features; record identity is evidence, not infallible certification.

Source preparation: Unmodified source asset; scale to fit, no crop.

Source: <https://www.inaturalist.org/photos/44877514>

License: <https://creativecommons.org/licenses/by-nc/4.0/>

P101 · Southeastern Five-lined Skink · striped young · pp. 52

Robby Deans · CC BY-NC 4.0 · *Plestiodon inexpectatus*

Checked 2026-09-28. Research-grade observation identifies *Plestiodon inexpectatus*; photo ID matched to its photos. Visually checked for the captioned features; record identity is evidence, not infallible certification.

Source preparation: Unmodified source asset; scale to fit, no crop.

Source: <https://www.inaturalist.org/photos/4551694>

License: <https://creativecommons.org/licenses/by-nc/4.0/>

Image credits · continued

P102 · Southeastern Five-lined Skink · adult coloration · pp. 52

Ty Smith · CC BY-NC 4.0 · *Plestiodon inexpectatus*

Checked 2026-09-28. Research-grade observation identifies *Plestiodon inexpectatus*; photo ID matched to its photos. Visually checked for the captioned features; record identity is evidence, not infallible certification.

Source preparation: Unmodified source asset; scale to fit, no crop.

Source: <https://www.inaturalist.org/photos/39804150>

License: <https://creativecommons.org/licenses/by-nc/4.0/>

P103 · Southeastern Five-lined Skink · underside tail scales · pp. 53

Ty Smith · CC BY-NC 4.0 · *Plestiodon inexpectatus*

Checked 2026-09-28. Research-grade observation identifies *Plestiodon inexpectatus*; photo ID matched to its photos. Visually checked for the captioned features; record identity is evidence, not infallible certification.

Source preparation: Unmodified source asset; scale to fit, no crop.

Source: <https://www.inaturalist.org/photos/67883010>

License: <https://creativecommons.org/licenses/by-nc/4.0/>

P104 · Banded Water Snake · Back and side bands · pp. 54

Jennifer Linde · CC BY-NC 4.0 · *Nerodia fasciata confluens*

Checked 2026-09-29. iNaturalist observation 38773551 is research grade with community taxon 29322; 6 identification count reported by API. Actual diagnostic feature independently inspected; source identification is not inferred solely from the caption. Source is explicitly *Nerodia fasciata confluens* from Texas, the western broad-banded form, not an NC locality; several current identifiers agree. Same species as the event entry.

Source preparation: Unmodified original; fit/contain at native aspect ratio. No crop, rotation, enhancement, or generated detail.

Source: <https://www.inaturalist.org/photos/61676308>

License: <https://creativecommons.org/licenses/by-nc/4.0/>

P105 · Banded Water Snake · dark form and head · pp. 54

kaynine35 · CC BY-NC 4.0 · *Nerodia fasciata*

Checked 2026-09-28. Research-grade observation identifies *Nerodia fasciata*; photo ID matched to its photos. Visually checked for the captioned features; record identity is evidence, not infallible certification.

Source preparation: Unmodified source asset; scale to fit, no crop.

Source: <https://www.inaturalist.org/photos/267617835>

License: <https://creativecommons.org/licenses/by-nc/4.0/>

P106 · Banded Water Snake · belly markings · pp. 55

Robert Russo · CC BY-NC 4.0 · *Nerodia fasciata*

Checked 2026-09-28. Research-grade observation identifies *Nerodia fasciata*; photo ID matched to its photos. Visually checked for the captioned features; record identity is evidence, not infallible certification.

Source preparation: Unmodified source asset; scale to fit, no crop.

Source: <https://www.inaturalist.org/photos/509735705>

License: <https://creativecommons.org/licenses/by-nc/4.0/>

P107 · Black Rat Snake · black form · pp. 56

Zane Fish · CC BY-NC 4.0 · *Pantherophis alleghaniensis*

Checked 2026-09-28. Research-grade observation identifies *Pantherophis alleghaniensis*; photo ID matched to its photos. Visually checked for the captioned features; record identity is evidence, not infallible certification.

Source preparation: Unmodified source asset; scale to fit, no crop.

Source: <https://www.inaturalist.org/photos/631968885>

License: <https://creativecommons.org/licenses/by-nc/4.0/>

Image credits · continued

P108 · Black Rat Snake · juvenile blotches · pp. 56

Catherine Bollinger · CC BY-NC 4.0 · *Pantherophis alleghaniensis*

Checked 2026-09-28. Research-grade observation identifies *Pantherophis alleghaniensis*; photo ID matched to its photos. Visually checked for the captioned features; record identity is evidence, not infallible certification.

Source preparation: Unmodified source asset; scale to fit, no crop.

Source: <https://www.inaturalist.org/photos/238128650>

License: <https://creativecommons.org/licenses/by-nc/4.0/>

P109 · Copperhead · hourglass bands · pp. 57

Shreybae · CC BY-NC 4.0 · *Agkistrodon contortrix*

Checked 2026-09-28. Research-grade observation identifies *Agkistrodon contortrix*; photo ID matched to its photos. Visually checked for the captioned features; record identity is evidence, not infallible certification.

Source preparation: Unmodified source asset; scale to fit, no crop.

Source: <https://www.inaturalist.org/photos/366253359>

License: <https://creativecommons.org/licenses/by-nc/4.0/>

P110 · Copperhead · facial pit · pp. 57

Shreybae · CC BY-NC 4.0 · *Agkistrodon contortrix*

Checked 2026-09-28. Research-grade observation identifies *Agkistrodon contortrix*; photo ID matched to its photos. Visually checked for the captioned features; record identity is evidence, not infallible certification.

Source preparation: Unmodified source asset; scale to fit, no crop.

Source: <https://www.inaturalist.org/photos/395750537>

License: <https://creativecommons.org/licenses/by-nc/4.0/>

P111 · Copperhead · juvenile tail · pp. 58

Jaries · CC BY-NC 4.0 · *Agkistrodon contortrix*

Checked 2026-09-28. Research-grade observation identifies *Agkistrodon contortrix*; photo ID matched to its photos. Visually checked for the captioned features; record identity is evidence, not infallible certification.

Source preparation: Unmodified source asset; scale to fit, no crop.

Source: <https://www.inaturalist.org/photos/224282207>

License: <https://creativecommons.org/licenses/by-nc/4.0/>

P112 · Cottonmouth · body bands · pp. 59

railprof · CC BY-NC 4.0 · *Agkistrodon piscivorus*

Checked 2026-09-28. Research-grade observation identifies *Agkistrodon piscivorus*; photo ID matched to its photos. Visually checked for the captioned features; record identity is evidence, not infallible certification.

Source preparation: Unmodified source asset; scale to fit, no crop.

Source: <https://www.inaturalist.org/photos/38881235>

License: <https://creativecommons.org/licenses/by-nc/4.0/>

P113 · Cottonmouth · head · pp. 59

Karen Szafrajda · CC BY 4.0 · *Agkistrodon piscivorus*

Checked 2026-09-28. Research-grade observation identifies *Agkistrodon piscivorus*; photo ID matched to its photos. Visually checked for the captioned features; record identity is evidence, not infallible certification.

Source preparation: Unmodified source asset; scale to fit, no crop.

Source: <https://www.inaturalist.org/photos/483991135>

License: <https://creativecommons.org/licenses/by/4.0/>

Image credits · continued

P114 · Cottonmouth · young bands · pp. 60

Jake · CC BY-NC 4.0 · *Agkistrodon piscivorus*

Checked 2026-09-28. Research-grade observation identifies *Agkistrodon piscivorus*; photo ID matched to its photos. Visually checked for the captioned features; record identity is evidence, not infallible certification.

Source preparation: Unmodified source asset; scale to fit, no crop.

Source: <https://www.inaturalist.org/photos/277359008>

License: <https://creativecommons.org/licenses/by-nc/4.0/>

P115 · Dekay's Brownsnake · back pattern · pp. 61

Michael J. Papay · CC BY 4.0 · *Storeria dekayi*

Checked 2026-09-28. Research-grade observation identifies *Storeria dekayi*; photo ID matched to its photos. Visually checked for the captioned features; record identity is evidence, not infallible certification.

Source preparation: Unmodified source asset; scale to fit, no crop.

Source: <https://www.inaturalist.org/photos/422007190>

License: <https://creativecommons.org/licenses/by/4.0/>

P116 · Dekay's Brownsnake · Scale close-up · pp. 61

Tigran Tadevosyan · CC BY 4.0 · *Storeria dekayi*

Checked 2026-09-29. iNaturalist observation 25349080 is research grade with community taxon 28562; 3 identification count reported by API. Actual diagnostic feature independently inspected; source identification is not inferred solely from the caption.

Source preparation: Unmodified original; fit/contain at native aspect ratio. No crop, rotation, enhancement, or generated detail.

Source: <https://www.inaturalist.org/photos/39249456>

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P117 · Eastern Diamondback Rattlesnake · diamond pattern · pp. 62

Steven IGAS Landseadel · CC BY-NC 4.0 · *Crotalus adamanteus*

Checked 2026-09-28. Research-grade observation identifies *Crotalus adamanteus*; photo ID matched to its photos. Visually checked for the captioned features; record identity is evidence, not infallible certification.

Source preparation: Unmodified source asset; scale to fit, no crop.

Source: <https://www.inaturalist.org/photos/183332662>

License: <https://creativecommons.org/licenses/by-nc/4.0/>

P118 · Eastern Diamondback Rattlesnake · head and rattle · pp. 62

natalie_likes_snakes · CC BY-NC 4.0 · *Crotalus adamanteus*

Checked 2026-09-28. Research-grade observation identifies *Crotalus adamanteus*; photo ID matched to its photos. Visually checked for the captioned features; record identity is evidence, not infallible certification.

Source preparation: Unmodified source asset; scale to fit, no crop.

Source: <https://www.inaturalist.org/photos/125431484>

License: <https://creativecommons.org/licenses/by-nc/4.0/>

P119 · Eastern Garter Snake · striped body · pp. 63

tewsc1 · CC BY-NC 4.0 · *Thamnophis sirtalis sirtalis*

Checked 2026-09-28. Research-grade observation identifies *Thamnophis sirtalis sirtalis*; photo ID matched to its photos. Visually checked for the captioned features; record identity is evidence, not infallible certification.

Source preparation: Unmodified source asset; scale to fit, no crop.

Source: <https://www.inaturalist.org/photos/184875878>

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Image credits · continued

P120 · Eastern Garter Snake · checkering and head · pp. 63

Kevin · CC BY-NC 4.0 · *Thamnophis sirtalis*

Checked 2026-09-28. Research-grade observation identifies *Thamnophis sirtalis*; photo ID matched to its photos. Visually checked for the captioned features; record identity is evidence, not infallible certification.

Source preparation: Unmodified source asset; scale to fit, no crop.

Source: <https://www.inaturalist.org/photos/404709614>

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P121 · Eastern Hognose Snake · upturned snout · pp. 64

Shreybae · CC BY-NC 4.0 · *Heterodon platirhinos*

Checked 2026-09-28. Research-grade observation identifies *Heterodon platirhinos*; photo ID matched to its photos. Visually checked for the captioned features; record identity is evidence, not infallible certification.

Source preparation: Unmodified source asset; scale to fit, no crop.

Source: <https://www.inaturalist.org/photos/393302291>

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P122 · Eastern Hognose Snake · color variation · pp. 64

Joshua Liverman · CC BY 4.0 · *Heterodon platirhinos*

Checked 2026-09-28. Research-grade observation identifies *Heterodon platirhinos*; photo ID matched to its photos. Visually checked for the captioned features; record identity is evidence, not infallible certification.

Source preparation: Unmodified source asset; scale to fit, no crop.

Source: <https://www.inaturalist.org/photos/15852091>

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P123 · Eastern Kingsnake · chain pattern · pp. 65

Shreybae · CC BY-NC 4.0 · *Lampropeltis getula*

Checked 2026-09-28. Research-grade observation identifies *Lampropeltis getula*; photo ID matched to its photos. Visually checked for the captioned features; record identity is evidence, not infallible certification.

Source preparation: Unmodified source asset; scale to fit, no crop.

Source: <https://www.inaturalist.org/photos/637917906>

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P124 · Eastern Kingsnake · head and scales · pp. 65

Shreybae · CC BY-NC 4.0 · *Lampropeltis getula*

Checked 2026-09-28. Research-grade observation identifies *Lampropeltis getula*; photo ID matched to its photos. Visually checked for the captioned features; record identity is evidence, not infallible certification.

Source preparation: Unmodified source asset; scale to fit, no crop.

Source: <https://www.inaturalist.org/photos/661778801>

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P125 · Painted Turtle · shell edge and head · pp. 66

Suzanne Cadwell · CC BY-NC 4.0 · *Chrysemys picta*

Checked 2026-09-28. Research-grade observation identifies *Chrysemys picta*; photo ID matched to its photos. Visually checked for the captioned features; record identity is evidence, not infallible certification.

Source preparation: Unmodified source asset; scale to fit, no crop.

Source: <https://www.inaturalist.org/photos/46288357>

License: <https://creativecommons.org/licenses/by-nc/4.0/>

Image credits · continued

P126 · Painted Turtle · eastern shell alignment · pp. 66

smmcdonald · CC BY-NC 4.0 · *Chrysemys picta picta*

Checked 2026-09-28. Research-grade observation identifies *Chrysemys picta picta*; photo ID matched to its photos. Visually checked for the captioned features; record identity is evidence, not infallible certification.

Source preparation: Unmodified source asset; scale to fit, no crop.

Source: <https://www.inaturalist.org/photos/49642243>

License: <https://creativecommons.org/licenses/by-nc/4.0/>

P127 · Painted Turtle · young underside · pp. 67

frankyj · CC BY-NC 4.0 · *Chrysemys picta*

Checked 2026-09-28. Research-grade observation identifies *Chrysemys picta*; photo ID matched to its photos. Visually checked for the captioned features; record identity is evidence, not infallible certification.

Source preparation: Unmodified source asset; scale to fit, no crop.

Source: <https://www.inaturalist.org/photos/366255207>

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P128 · Snapping Turtle · head · pp. 68

taylordeckard · CC BY-NC 4.0 · *Chelydra serpentina*

Checked 2026-09-28. Research-grade observation identifies *Chelydra serpentina*; photo ID matched to its photos. Visually checked for the captioned features; record identity is evidence, not infallible certification.

Source preparation: Unmodified source asset; scale to fit, no crop.

Source: <https://www.inaturalist.org/photos/387927157>

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P129 · Snapping Turtle · whole body · pp. 68

smmcdonald · CC BY-NC 4.0 · *Chelydra serpentina*

Checked 2026-09-28. Research-grade observation identifies *Chelydra serpentina*; photo ID matched to its photos. Visually checked for the captioned features; record identity is evidence, not infallible certification.

Source preparation: Unmodified source asset; scale to fit, no crop.

Source: <https://www.inaturalist.org/photos/49642591>

License: <https://creativecommons.org/licenses/by-nc/4.0/>

P130 · Snapping Turtle · juvenile shell ridges and tail · pp. 69

Sam Stukel / USFWS · Public domain (U.S. federal work; PDM 1.0) · *Chelydra serpentina*

Checked 2026-09-29. USFWS original caption identifies a juvenile common snapping turtle at Gavins Point National Fish Hatchery, South Dakota; original image and Commons file record agree. Exposed shell and tail inspected. Not an NC field observation.

Source preparation: Unmodified original source asset; scaled to fit, no crop.

Source: <https://www.flickr.com/photos/usfwsmtprairie/52827391228/>

License: <https://creativecommons.org/publicdomain/mark/1.0/>

P131 · Spotted Turtle · shell spots · pp. 70

smmcdonald · CC BY-NC 4.0 · *Clemmys guttata*

Checked 2026-09-28. Research-grade observation identifies *Clemmys guttata*; photo ID matched to its photos. Visually checked for the captioned features; record identity is evidence, not infallible certification.

Source preparation: Unmodified source asset; scale to fit, no crop.

Source: <https://www.inaturalist.org/photos/55141680>

License: <https://creativecommons.org/licenses/by-nc/4.0/>

Image credits · continued

P132 · Spotted Turtle · head and limbs · pp. 70

Shreybae · CC BY-NC 4.0 · *Clemmys guttata*

Checked 2026-09-28. Research-grade observation identifies *Clemmys guttata*; photo ID matched to its photos. Visually checked for the captioned features; record identity is evidence, not infallible certification.

Source preparation: Unmodified source asset; scale to fit, no crop.

Source: <https://www.inaturalist.org/photos/482847922>

License: <https://creativecommons.org/licenses/by-nc/4.0/>

P133 · Eastern Box Turtle · domed shell · pp. 71

Joshua Liverman · CC BY 4.0 · *Terrapene carolina carolina*

Checked 2026-09-28. Research-grade observation identifies *Terrapene carolina carolina*; photo ID matched to its photos. Visually checked for the captioned features; record identity is evidence, not infallible certification.

Source preparation: Unmodified source asset; scale to fit, no crop.

Source: <https://www.inaturalist.org/photos/55805257>

License: <https://creativecommons.org/licenses/by/4.0/>

P134 · Eastern Box Turtle · closing shell · pp. 71

Shreybae · CC BY-NC 4.0 · *Terrapene carolina carolina*

Checked 2026-09-28. Research-grade observation identifies *Terrapene carolina carolina*; photo ID matched to its photos. Visually checked for the captioned features; record identity is evidence, not infallible certification.

Source preparation: Unmodified source asset; scale to fit, no crop.

Source: <https://www.inaturalist.org/photos/432691330>

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P135 · Eastern Box Turtle · plastron hinge · pp. 72

Koaw Nature · CC BY-NC 4.0 · *Terrapene carolina carolina*

Checked 2026-09-28. Research-grade observation identifies *Terrapene carolina carolina*; photo ID matched to its photos. Visually checked for the captioned features; record identity is evidence, not infallible certification.

Source preparation: Unmodified source asset; scale to fit, no crop.

Source: <https://www.inaturalist.org/photos/74644769>

License: <https://creativecommons.org/licenses/by-nc/4.0/>

P136 · Yellow-bellied Slider · head and lower shell · pp. 73

Joshua Liverman · CC BY 4.0 · *Trachemys scripta scripta*

Checked 2026-09-28. Research-grade observation identifies *Trachemys scripta scripta*; photo ID matched to its photos. Visually checked for the captioned features; record identity is evidence, not infallible certification.

Source preparation: Unmodified source asset; scale to fit, no crop.

Source: <https://www.inaturalist.org/photos/66948582>

License: <https://creativecommons.org/licenses/by/4.0/>

P137 · Yellow-bellied Slider · yellow cheek · pp. 73

Aaron P. · CC BY-NC 4.0 · *Trachemys scripta scripta*

Checked 2026-09-28. Research-grade observation identifies *Trachemys scripta scripta*; photo ID matched to its photos. Visually checked for the captioned features; record identity is evidence, not infallible certification.

Source preparation: Unmodified source asset; scale to fit, no crop.

Source: <https://www.inaturalist.org/photos/735753803>

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Image credits · continued

P138 · American Toad · back and glands · pp. 74

jlemonds · CC BY-NC 4.0 · *Anaxyrus americanus*

Checked 2026-09-28. Research-grade observation identifies *Anaxyrus americanus*; photo ID matched to its photos. Visually checked for the captioned features; record identity is evidence, not infallible certification.

Source preparation: Unmodified source asset; scale to fit, no crop.

Source: <https://www.inaturalist.org/photos/461936458>

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P139 · American Toad · side and glands · pp. 74

Alex Shure · CC BY-NC 4.0 · *Anaxyrus americanus*

Checked 2026-09-28. Research-grade observation identifies *Anaxyrus americanus*; photo ID matched to its photos. Visually checked for the captioned features; record identity is evidence, not infallible certification.

Source preparation: Unmodified source asset; scale to fit, no crop.

Source: <https://www.inaturalist.org/photos/130773208>

License: <https://creativecommons.org/licenses/by-nc/4.0/>

P140 · Bullfrog · adult folds and eardrums · pp. 75

Nell Cant · CC BY 4.0 · *Lithobates catesbeianus*

Checked 2026-09-28. Research-grade observation identifies *Lithobates catesbeianus*; photo ID matched to its photos. Visually checked for the captioned features; record identity is evidence, not infallible certification.

Source preparation: Unmodified source asset; scale to fit, no crop.

Source: <https://www.inaturalist.org/photos/161936314>

License: <https://creativecommons.org/licenses/by/4.0/>

P141 · Bullfrog · whole frog · pp. 75

Creator not stated; CC0 source · CC0 1.0 · *Lithobates catesbeianus*

Checked 2026-09-28. Research-grade observation identifies *Lithobates catesbeianus*; photo ID matched to its photos. Visually checked for the captioned features; record identity is evidence, not infallible certification.

Source preparation: Unmodified source asset; scale to fit, no crop.

Source: <https://www.inaturalist.org/photos/223217347>

License: <https://creativecommons.org/publicdomain/zero/1.0/>

P142 · Bullfrog · tadpole with hind legs · pp. 76

bamalachia · CC BY-NC-SA 4.0 · *Lithobates catesbeianus*

Checked 2026-09-28. Research-grade observation identifies *Lithobates catesbeianus*; photo ID matched to its photos. Visually checked for the captioned features; record identity is evidence, not infallible certification.

Source preparation: Unmodified source asset; scale to fit, no crop.

Source: <https://www.inaturalist.org/photos/245804146>

License: <https://creativecommons.org/licenses/by-nc-sa/4.0/>

P143 · Pine Barrens Treefrog · side and leg markings · pp. 77

Kevin · CC BY-NC 4.0 · *Dryophytes andersonii*

Checked 2026-09-28. Research-grade observation identifies *Dryophytes andersonii*; photo ID matched to its photos. Visually checked for the captioned features; record identity is evidence, not infallible certification.

Source preparation: Unmodified source asset; scale to fit, no crop.

Source: <https://www.inaturalist.org/photos/378056276>

License: <https://creativecommons.org/licenses/by-nc/4.0/>

Image credits · continued

P144 · Pine Barrens Treefrog · breeding pair · pp. 77

Kevin · CC BY-NC 4.0 · *Dryophytes andersonii*

Checked 2026-09-28. Research-grade observation identifies *Dryophytes andersonii*; photo ID matched to its photos. Visually checked for the captioned features; record identity is evidence, not infallible certification.

Source preparation: Unmodified source asset; scale to fit, no crop.

Source: <https://www.inaturalist.org/photos/644192746>

License: <https://creativecommons.org/licenses/by-nc/4.0/>

P145 · Southern Leopard Frog · side and eardrum · pp. 78

Joshua Liverman · CC BY 4.0 · *Lithobates sphenoccephalus*

Checked 2026-09-28. Research-grade observation identifies *Lithobates sphenoccephalus*; photo ID matched to its photos. Visually checked for the captioned features; record identity is evidence, not infallible certification.

Source preparation: Unmodified source asset; scale to fit, no crop.

Source: <https://www.inaturalist.org/photos/25942533>

License: <https://creativecommons.org/licenses/by/4.0/>

P146 · Southern Leopard Frog · back folds · pp. 78

Amy Padgett · CC BY-NC 4.0 · *Lithobates sphenoccephalus*

Checked 2026-09-28. Research-grade observation identifies *Lithobates sphenoccephalus*; photo ID matched to its photos. Visually checked for the captioned features; record identity is evidence, not infallible certification.

Source preparation: Unmodified source asset; scale to fit, no crop.

Source: <https://www.inaturalist.org/photos/288021076>

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P147 · Marbled Salamander · adult bands · pp. 79

Robby Deans · CC BY-NC 4.0 · *Ambystoma opacum*

Checked 2026-09-28. Research-grade observation identifies *Ambystoma opacum*; photo ID matched to its photos. Visually checked for the captioned features; record identity is evidence, not infallible certification.

Source preparation: Unmodified source asset; scale to fit, no crop.

Source: <https://www.inaturalist.org/photos/2809928>

License: <https://creativecommons.org/licenses/by-nc/4.0/>

P148 · Marbled Salamander · female with visible eggs · pp. 79

John P Clare · CC BY-NC-ND 2.0 Generic · *Ambystoma opacum*

Checked 2026-09-29. Photographer original record explicitly identifies *Ambystoma opacum* and a female on eggs. Photo visibly contains pale crossbands and separate rounded egg capsules; source identification does not certify an NC locality or duration of guarding.

Source preparation: Unmodified original source asset; photographer watermark retained; scaled to fit, no crop.

Source: <https://www.flickr.com/photos/johnclare/31055091111/>

License: <https://creativecommons.org/licenses/by-nc-nd/2.0/>

P149 · Red-backed Salamander · striped form · pp. 80

Shreybae · CC BY-NC 4.0 · *Plethodon cinereus*

Checked 2026-09-28. Research-grade observation identifies *Plethodon cinereus*; photo ID matched to its photos. Visually checked for the captioned features; record identity is evidence, not infallible certification.

Source preparation: Unmodified source asset; scale to fit, no crop.

Source: <https://www.inaturalist.org/photos/469235339>

License: <https://creativecommons.org/licenses/by-nc/4.0/>

Image credits · continued

P150 · Red-backed Salamander · lead-backed form · pp. 80

Ty Smith · CC BY-NC 4.0 · *Plethodon cinereus*

Checked 2026-09-28. Research-grade observation identifies *Plethodon cinereus*; photo ID matched to its photos. Visually checked for the captioned features; record identity is evidence, not infallible certification.

Source preparation: Unmodified source asset; scale to fit, no crop.

Source: <https://www.inaturalist.org/photos/183836724>

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P151 · White-spotted Slimy Salamander · spotted body · pp. 81

Kevin Metcalf · CC BY-NC 4.0 · *Plethodon cylindraceus*

Checked 2026-09-28. Research-grade observation identifies *Plethodon cylindraceus*; photo ID matched to its photos. Visually checked for the captioned features; record identity is evidence, not infallible certification.

Source preparation: Unmodified source asset; scale to fit, no crop.

Source: <https://www.inaturalist.org/photos/252713663>

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P152 · White-spotted Slimy Salamander · Side grooves · pp. 81

Henry Seilheimer · CC BY-NC 4.0 · *Plethodon cylindraceus*

Checked 2026-09-29. iNaturalist observation 64481221 is research grade with community taxon 27188; 3 identification count reported by API. Actual diagnostic feature independently inspected; source identification is not inferred solely from the caption. The source comment identifies an aberrant slimy salamander despite sparse spotting; three current species identifications agree. This deliberately illustrates grooves rather than typical coloration.

Source preparation: Unmodified original; fit/contain at native aspect ratio. No crop, rotation, enhancement, or generated detail.

Source: <https://www.inaturalist.org/photos/103674258>

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