

## SECTION V – ENVIRONMENTAL EDUCATION & EARTH SCIENCES

### Dept. D – Conservation & Wildlife

#### General Rules:

- This section gives 4—H members an opportunity to share their knowledge and field experience about conservation, wildlife, and shooting sports. When creating an exhibit make sure to pay close attention to the rules while taking into account the different laws that surround those areas. **Show what you did & learned**-All exhibitors must show evidence of their personal field experiences, study, or observations that relate to their exhibit. This helps judges understand what the 4-H'er did and learned in the process that led to the exhibit.
- **Proper Credit**-Show proper credit by listing the sources of plans or other supporting information used in exhibits.

Example to attach to your exhibit

<p><b>Name:</b> Chris Clover <b>County:</b> Clover County <b>Age:</b> 10</p> <p><b>Field Experience, Study, or Observations:</b></p> <p>I attended a 4-H workshop where we put out a food plot, and then made turkey calls. We played a game about attracting turkeys. Sometimes we acted like a female to draw in a tom turkey. Sometimes we acted like a lost baby turkey to call in a whole flock. I was able to use my turkey call and play the game successfully. While I never turkey hunted in person, I went on-line to research more turkey calls. I hope to turkey hunt someday, and I want to use a box call to hunt fall turkeys.</p> <p><b>Credits/Source:</b></p> <p>Information was obtained from Nebraska Game &amp; Parks website</p>
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- **Whose Exhibit?** The exhibitor's name, county, age must be on the back or bottom of all displays
- **Wildlife & Wildlife Laws**- "Animal" or "wildlife" in the following classes includes wild fish, amphibians, reptiles, birds, or mammals. Please make sure you are following all wildlife laws. Domestic animal (i.e. domestic livestock or house pets) and insects exhibits are not appropriate for this area.
- **Project Materials**-Related project booklets include Exploring Your Environment Series, 4-H Shooting Sports, Amphibians, Bird Behavior, Fishing for Adventure Project Manuals, Wildlife Conservation, Geology, and Outdoor Adventure. Other resources include: Outdoor Skills: Learning Science in the Outdoors series (Science Signature Outcome Program) [outdoornebraska.gov/afterschool/](http://outdoornebraska.gov/afterschool/) and [www.whep.org](http://www.whep.org).
- **Board & Poster Exhibits**- Mount all board exhibits on 1/4" inch plywood, Masonite, etc. no larger than 24 inches high x 24 inches wide. Poster exhibits should be on regular poster sheets, no larger than standard size (22 inches x 28 inches) but half size (22 inches x 14 inches is recommended).

- **Exhibit Size** – Exhibits other than poster/display boards should not exceed 48 inches x 48 inches and be able to be moved by two people.

#### Division 340 – Wildlife & How they Live

- Classes 1-4 are board or poster exhibits. Display may show any aspect of wildlife, wildlife habitat, or related conservation. No domestic livestock, pets, or insects allowed. For more ideas, refer to project booklets.

- sf Class 1 **Mammal Display** –(SF154) - Examples: life history or other facts about one type of wildlife; how to manage wildlife on a farm or in town; managing habitat for one kind of wildlife; life requirements for one kind of wildlife during one season or through the year; wildlife behavior and habitats.
- sf Class 2 **Bird Display**-(SF154) - . Examples: life history or other facts about one type of wildlife; how to manage wildlife on a farm or in town; managing habitat for one kind of wildlife; life requirements for one kind of wildlife during one season or through the year; wildlife behavior and habitats.
- sf Class 3 **Fish Display** – (SF155) - Examples: life history or other facts about one type of wildlife; how to manage wildlife on a farm or in town; managing habitat for one kind of wildlife; life requirements for one kind of wildlife during one season or through the year; wildlife behavior and habitats.
- sf Class 4 **Reptile or Amphibian Display** – (SF156) - Examples: life history or other facts about one type of wildlife; how to manage wildlife on a farm or in town; managing habitat for one kind of wildlife; life requirements for one kind of wildlife during one season or through the year; wildlife behavior and habitats.

sf Class 5 **Wildlife Connections** – (SF157) - Board or poster exhibit. The purpose of this display is to show interconnections and related aspects among animals, plants, and other habitat components. All displays should show two or more interactions (connections) that occur between/among animals or between animals and their habitat. Displays might show how animals interact with other animals, with people, or with their habitat.

Examples:

1. Food chain display. Use pictures, drawings, or other items to illustrate the source of food energy and where it goes - who eats whom or what. Use arrows to show the direction of the energy (food) flow.
2. Show the role of predators, scavengers, insect eaters, or others in nature.
3. Show how wildlife numbers (populations) change through the year.
4. Show predation, competition, or other behavioral interactions of wildlife.
5. Choose one kind of wildlife and observe through a season or year, keep notes of interactions, then make a display of what you saw.

sf Class 6 **Wildlife Tracks** – (SF158) - Board or diorama-type box exhibit. Make a display of animal tracks using plaster-of-paris casts. There are 3 options. For all options, include a brief description of your experiences in making the tracks so the judges' better understand what you did and learned. Positive casts (impressions as they would be in nature) are preferred, but not required.

1. Option #1 should show plaster-of-paris tracks of five or more kinds of wildlife along with a picture or illustration of each kind of animal. (OR)
2. Option #2 should show more two or more plaster-of-paris tracks of one specific kind of wildlife and should include a picture or illustration of the animal, what the animal may eat, and what may eat the animal. (OR)
3. Option #3 should show two tracks and include the animal's habitat needs including preferred food, shelter, water, and space in addition to picture or illustration of the animal.

sf Class 7 **Wildlife Knowledge Check** – (SF159) - Use electrical circuits, pictures, or other methods of teaching wildlife identification or other wildlife conservation or shooting sports related knowledge. Plan size and shape to fit transportation and display; maximum size 24 inches x 24 inches.

sf Class 8 **Wildlife Diorama** – (SF160) - Exhibit must be no larger than 24 inches x 24 inches. The exhibit might show a grassland, prairie, agricultural, woodland, riparian (stream or river corridor), wetland, or other area with wildlife habitat. Example: show an area interspersed with several habitats such as windbreaks, farm fields, woods, waste areas, ditches, and pastures for edge-adapted species such as white-tailed deer, Northern bobwhite, mourning doves, cottontail rabbits, fox, squirrels, Northern cardinals, or blue jays. Label the habitats displayed and show at least five kinds of wildlife in their proper habitats.

sf Class 9 **Wildlife Essay** – (SF161) - Learn how to share educational information by writing. Choose a conservation or wildlife topic that interests you and write an essay about it. For example, write about a particular species of wildlife that you have observed or about the values of wildlife. You might write about wildlife on a farm, in town, in a backyard, at a backyard feeder; or at other places. You might write about ethics, proper behavior in the outdoors, hunting, or fishing. The essay is between 100 and 1000 words long and typed, double spaced on 8 ½" x 11" paper. You might use books, magazines, or personal interviews as resources, but you must give credit to all sources by listing them.

sf Class 10 **Wildlife Values Scrapbook** – (SF163) - Make a scrapbook about the various values of wildlife. This would include aesthetic, scientific, commercial, game, genetic, and/or ecological. One resource would be the Wildlife Conservation project booklet (4-H 125).

sf Class 11 **Wildlife Arts** – (SF163) - The purpose of this class is to allow artistic exhibits that contain educational information about conservation and wildlife. Examples might include paintings, photographs, wood carvings, painted duck decoys, or songs or poems written by the exhibitor. Entries must be appropriate for fair display and no larger than 24 inches x 24 inches. For example, paintings or photographs should be displayed in notebook format or mounted on a sturdy display panel. All entries must include a title and brief explanation of the purpose or message (what is the exhibit meant to show).

## Division 341 – Outdoor Adventures

### Division 341 – Outdoor Adventures – Level 1

- Class 11 **Poster** –(SF281) - Topics may include one of the following, but not limited to; trail maps(s) you have hiked, hiking essentials, your hiking adventures, wildlife or plants observed while hiking ( birds, animals prints, butterflies, etc.), plan a hike, explain “Leave No Trace” and how this was followed during hiking, collection of photos from your hikes.
- Class 12 **Journal/Binder** –(SF281) - Written report of actual, virtual or imagined trail(s) hiking with observation, OR field journal (notes of actual experiences, sights, sounds, smells, etc.). OR camping trip diary. Feathers/leaf/flower pressings must be securely attached if included. Photos or drawings of observations encouraged. Exhibits measure no larger than 16 inches x 16 inches.
- Class 13 **Camping/Hiking Safety** – (SF281) - Must include explanation of use of item and why selected/purpose, how it fits hiking/camping needs. May include, but are not limited to, one of the following: a compact hiking safety kit, homemade compass or homemade water purifier.
- Class 14 **Hiking Adventure Game** – (SF281) - Create a game of trails of outdoor adventures Must be educational on one or more aspects of hiking, must include clear instructions as to the purpose and what can be learned by playing the game.
- Class 15 **Other Hiking Item(s)** –(SF281) - Must include what inspired the creation of the item(s) and its purpose. May include but are not limited to one of the following: hiking backpack, nature art, nature poem or story, homemade hiking snack mix displayed in a resealable plastic bag (include why ingredients were selected and nutritional value).

## Division 341 – Outdoor Adventures – Level 2

- <sup>sf</sup> Class 1 **Poster** –(SF281) - Topics may include, but not limited to one or more of the following; how to pitch a tent, knot tying, cooking over a campfire, how to start a campfire, wildlife and plants identified while camping, how to set up emergency shelter, dealing with weather, collection of photos from camping trips, “Leave No Trace” and how that was followed while camping, plan a camping trip, camping essential, environmental issues/protecting natural resources, park or trail clean up, sanitation/hygiene while outdoors or use of GPS.
- <sup>Sf</sup> Class 2 **Journal/Binder** –(SF281) - Written report of actual, virtual or imaginary camping/hiking trips with observations OR field journal (notes of actual experiences, sights, sounds, smells, etc.), OR camping or hiking trip diary. Explain growth in project, leading the hikes, planning the camping trip, now being able to identify the wildlife and nature around you and how identified (sight/sound/shape/smell/color). Feathers/leaf/flower pressings must be securely attached, if included. Photos or drawing of observations encouraged. Exhibits measure no larger than 16 inches x 16inches.
- <sup>Sf</sup> Class 3 **Camping/Hiking Safety** –(SF281) - Must include explanation of use of item and why selected/purpose, how it fits hiking/camping needs. May include, but are not limited to, one of the following: travel sized poisonous plants guide, camping first aid kit, weather/water safety or hand hygiene kit.
- <sup>Sf</sup> Class 4 **Digital Media** – (SF281) - Use digital media to show video/slideshow/presentation of setting up a tent (include why site is chosen) or protecting natural resources or environmental issues or computer video camping/hiking game. Submit a USB drive or DVD inside a report cover or notebook. If using a slideshow, include printed slides inside report cover or notebook.
- <sup>Sf</sup> Class 5 **Other Camping Items** –(SF281) - Must include what inspired the creation of the item, and its purpose. May include, but are not limited to one of the following; nature art, nature haiku poem, spider web sketches, or knot display.

### Division 341 – Outdoor Adventures – Level 3

<sup>sf</sup> Class 6 **Poster** –(SF281) - Topics may include but not limited to one of the following; Topographic map, backpacking trip plan, camp layout, plan an expedition (can be dreamed or lived), collection of photos from your expedition, trails hiked, cost comparison of rental vs purchase or using GPS/compass.

<sup>Sf</sup> Class 7 **Journal/Binder** –(SF281) - Written report of actual, or virtual or imagined expeditions/camping/hiking, OR field journal (notes of actual experiences, sights, sounds, smells, etc.). Explain growth in project, challenges in leading a group, teaching others about wildlife and nature identification and “Leave No Trace.” Exhibits measure no larger than 16 inches x 16inches.

<sup>Sf</sup> Class 8 **Expedition Safety** –(SF281) - Must include an explanation of use of items, why selected/purpose of item, how it meets hiking/camping/expedition needs. May include, but are not limited to; travel sized edible plants, creepy crawly guide, tent repair kit, travel first aid kit or weather/water safety.

<sup>Sf</sup> Class 9 **Digital Media** –(SF281) - Use digital media to show video/slideshow/presentation of one of the following, but not limited to; building a non-tent shelter (include why needed), packing your backpack/equipment and getting it onto you, teaching others about environmental issues or a computer video backpacking expedition game. Submit a USB drive or DVD inside a report cover or notebook. If using a slideshow, include printed slides inside report cover or notebook.

<sup>Sf</sup> Class 10 **Other Expedition Items** –(SF281) - Must include what inspired the creation of the item, and the purpose of the item. May include, but are not limited to; nature art, nature cinquain poem, backpacking food recipes, hiking/expedition conditioning plan, charcoal etching, dehydrated meal or snack (at least 1 cup display in a resealable plastic bag with ingredients, instructions, and nutritional facts included). Exhibits measure no larger than 18 inches x 24inches.

### Division 342 – Wildlife Habitat

<sup>sf</sup> Class 1 **Houses** – (SF165) - Make a house for wildlife. Examples: Birdhouse (bluebird, purple martin, wood duck, kestrel, barn owl, etc.) or bat house; no insect houses. Make the house functional so that dimensions, hole size, etc. are appropriate to fit the intended species' needs. Include the following information:

1. The kinds of animal(s) for which the house is intended,
2. Where and how the house should be located for best use,
3. Any seasonal maintenance needed, and
4. Any evidence of your personal observations or experiences. Tips: check NebGuide on bird houses and shelves.

<sup>sf</sup> Class 2 **Feeders/Waters** – (SF166) - Make a bird bath or feeder. Examples: seed, suet, or nectar feeders. Squirrel feeders are okay; **no insect feeders**. Indicate the kinds of animal(s) for which the feeder or waterer is intended. Make the feeder or waterer functional so that it fits wildlife needs. Include the following information:

1. Where and how the feeder or waterer should be located for best use,
2. How it should be maintained. Tip: check NebGuides on feeding birds.

<sup>sf</sup> Class 3 **Wildlife Habitat Design** – (SF167) - Board or poster exhibit. Choose a backyard, acreage, or farm, and design a habitat plan to meet the food, water, shelter, and space needs of at least three kinds of animals you would like to attract. Draw an outline of the area and show what plants or other habitat will be provided. Indicate how the various parts of your plan provide the desired habitat needs. You might include an aerial photo of the area if you have one.

## Division 343 – Harvesting Equipment

<sup>sf</sup> Class 1 **Fish Harvesting Equipment – (SF168)** - Board exhibit. Display of equipment used in fish harvesting. Examples: fishing knots, hooks (with corks over ends for safety), lures. Label all items displayed. Include in your exhibit the following information:

1. The purpose of each item,
2. When or where each item is used,
3. Any personal experiences you have had with the item(s).

<sup>sf</sup> Class 2 **Build a Fishing Rod – (SF169)** - Rod building kits with instructions are available for this purpose. A fishing rod educational exhibit may not exceed 96 inches in length. Exhibit must be mounted on a Include with the exhibit :

1. Explanation of cost of materials/components,
2. Where materials/components were purchased,
3. How many number of hours required for construction.
4. Label all parts: Necessary components which must be included are grip, line guides (based on manufacturers specifications), guide wraps, and hook keeper. Reel seat needs to be aligned with guides, and guides aligned accurately down rod. Guide wraps of size A to D, nylon or silk thread.

Exhibit will be judged on: workmanship, labeling of parts information, and neatness.

<sup>sf</sup> Class 3 **Casting Target – (SF170)** - Make a casting target for exhibit and use,. Target must be under 48" x 48". The bullseyes must be 2 feet, outer band must be 1 foot in diameter and can have up to 3 rings. The exhibit must be easy to store, durable, and weather resistant. Include the purpose and rules of using your casting target.

<sup>sf</sup> Class 4 **Wildlife Harvesting Equipment– (SF171)** – A Board Exhibit. Display of equipment used in harvesting wildlife. Examples: expended ammunition casings (no live ammunition permitted), steel traps, hide stretchers, fleshers, etc. For displays of shotguns, rifles, or bows, use drawings or pictures. Label all items displayed.

1. The purpose of each item,
2. When or where it is used , and
3. Any personal experiences you have had with the item(s).

<sup>sf</sup> Class 5 **Inventing Wildlife/Fish Harvesting Equipment, Aid or Accessory – (SF168)** - Use engineering principles to invent or adapt equipment that helps you harvest fish or wildlife. This could include wildlife calls, adapted fishing pole for shallow water, a blind, decoys, etc. Share your drawing (or adapted plans), how the equipment works, how you tested it, and the results of testing your prototype and any adjustments you made.

## Division 346 – Taxidermy

<sup>sf</sup> Class 1 **Tanned Hides– (SF172)** – Exhibit of a wild animal hide properly processed by the member. No requirement as to mounting but must meet the size requirement listed under General Rules. Include the animal's name and the following: information about the exhibitor's personal field experiences, study, or observations that relate to the exhibit.

<sup>sf</sup> Class 2 **Taxidermy – (SF172)** – Any legal fish, bird, or other wild animal properly processed by the member. No requirement as to mounting but must met size requirement listed under General Rules. Include the animal's name and the following: information about the exhibitor's personal field experiences, study, or observations that relate to the exhibit.

## Dept. D – Shooting Sports

*General Rules:*

- 4-H Shooting Sports requires youth to be under the direct leadership of a certified 4-H Shooting Sports Leader in either shotgun, rifle (bb gun), archery, pistol, black powder/muzzleloader, and/or hunting skills.
- NO FIREARMS may be entered as an exhibit, nor live ammunition; however information can be shared through pictures. Classes 04-09 can be entered by anyone in the conservation and wildlife area.

## Division 347 – Shooting Sports

<sup>sf</sup> Class 1 **Shooting Aid or Accessory – (SF253)** - Any item which helps the shooter/hunter better perform their sport, examples: rifle sling, kneeling roll, arm guard, shotgun vest, target boxes, shooting stick, etc. Include your design, plans you adapted, what the item is used for.

sf Class 2	<b>Storage Case</b> – (SF254) - any item with the purpose to safely hold a firearm, bow, ammunition, and/or arrows, ex: soft sided shotgun case, quivers, firearm safe. Include your design, or plans you adapted. Explain how the storage case is used.	sf Class 8	<b>Community Vitality Display</b> – (SF251) - Explore the different shooting sports, conservation, fishing, and hunting methods in keeping Nebraska vibrant especially in rural areas. Present facts and research in an interesting way for the public to learn from.
sf Class 3	<b>Practice Game or Activity</b> – (SF255) - invent or adapt an activity to practice or teach a project skill. Include pictures of youth playing the game, testimonials of 4-H members who played the game, what skill is being worked on, and directions for the game. Explain how you came up with the game or adapted it to fit the needs of your group members.	sf Class 9	<b>Ag Literacy-Value Added Agriculture Interview or Research Project</b> – (SF250) - Explore how traditional ag producers are adding value to their production agriculture operations through conservation efforts, hunting, raising pheasants, shooting sports related tourism, etc. Present finding in an interesting way for public to learn from.
sf Class 4	<b>Science, Engineering, Technology Advancements of Shooting Sports Essay or Display</b> – (SF256) - Choose a specific area of shooting sports and share how it has advanced, include a timeline and photos or illustrations. Keep your topic narrow and manageable. Essays are limited to 1,000 words and should be on 8 ½" x 11" paper.	Class 10	<b>Archery Educational Display</b> – Items should be mounted on ¼" or ⅜" thick plywood, Masonite, or similar, strong enough to support the weight of the exhibit. Preferred size 24" x 24". Display should be three-dimensional, but not to exceed 4" from board. Display may include safety, building or using equipment, or any aspect of Archery.
sf Class 5	<b>Healthy Lifestyles Plan</b> – (SF257) - Include a shooter's (hiker's, camper's, angler's) diet and exercise plan, and how the 4-H member will benefit or improve from the following the plan. Ideally, the 4-H member would follow the plan and include some journal entries about adaptations or improvements made while following the plan.	Class 20	<b>Rifle/BB Gun/Air Rifle Education Display</b> – Poster or display concerning Rifle/BB Gun/Air Rifle as part of the Shooting Sports project. Items should be mounted on ¼ " or ⅜" thick plywood, Masonite, or similar panel strong enough to support the weight of the exhibit. Preferred size 24" x 24". Display should be three-dimensional, but not to exceed 4" from board. Display may include safety, building or using equipment, or any aspect of Rifle/BB Gun/Air Rifle.
sf Class 6	<b>Citizenship/Leadership Project</b> – (SF258) - Share a display on a citizenship project or leadership project that the 4-H member took on individually or with a group to improve some aspect related to 4-H Shooting Sports, Conservation, or Wildlife. Ex: could be range development, conservation planting to attract wildlife, a camp, or 4-H recruitment event. Include who benefited from the project, what the 4-H member's role was, and any results.	Class 30	<b>Shotgun Educational Display</b> – Poster or display concerning shotguns as part of the Shooting Sports project. Items should be mounted on ¼" or ⅜" thick plywood, Masonite, or similar panel strong enough to support the weight of the exhibit. Preferred size 24" x 24". Display should be three-dimensional, but not to exceed 4" from board. Display may include safety, building, or using equipment, or any aspect of Rifle/BB Gun/Air Rifle.
sf Class 7	<b>Career Development/College Essay, Interview or Display</b> – (SF252) - Research opportunities for careers related to this area or opportunities for college majors or college activities to help discover using project skills beyond a person's 4-H career. Essays are limited to 1,000 words and should be on 8 ½" x 11" paper. Interviews need to include a picture of the interviewee in their work setting, questions asked, and a transcript of answers.		

Class 40 **Muzzle loading Educational Display** – Poster or display concerning muzzle loading as part of the Shooting Sports project. Items should be mounted on ¼" or ⅜" thick plywood, Masonite, or similar panel strong enough to support the weight of the exhibit. Preferred size 24" x 24". Display should be three-dimensional, but not to exceed 4" from board. Display may include safety, building or using equipment, or any aspect of muzzle loading.

Class 50 **Pistol Educational Display** – Poster or display concerning pistol as part of the Shooting Sports project. Items should be mounted on ¼" or ⅜" thick plywood, Masonite, or similar panel strong enough to support the weight of the exhibit. Preferred size 24" x 24". Display should be three-dimensional, but not to exceed 4" from board. Display may include safety, building or using equipment, or any aspect of pistol.

- Display "boards" must be made from wood or wood composite, e.g. plywood, fiberboard, or masonite, ¼ inches to ½inches thick and no larger than 24 inches x 24 inches. Display boards may be coated, painted or varnished, on both sides to prevent warping.
- Display "posters" must be made from a material, e.g. foam board or poster board, which will stand upright without buckling, and be no larger than 24 inches x 24 inches.
- Display "books" must measure no more than 16 inches x 16inches.
- At least 5 of the 10 samples in Class 2, 3, 4, and 5 must be from the list of 60 species described in 4-H 332. Samples must be from 10 different tree species. Ex: Emerald Queen Maple and Crimson King Maple are both varieties of the same species (Norway Maple), and thus have the same genus and species name, i.e. *Acer platanoides*. All samples must be from trees, NO shrubs. If more than 10 samples are included in a display, only the first 10 samples of the current year will be judged.
- Due to emerald ash borer infestation, no true ash species (Green Ash, White Ash, Black Ash, or Blue Ash) may be included in any collections. Inclusion of a true ash species will result of the project being disqualified.
- Remember that other general labeling standards apply. For example, scientific names are always italicized or underlined. Also, the first letter of a Genus name is always capitalized. The first letter of a species name is always lower case. When required, always indicate complete scientific names (Genus and species) and common names, (e.g. Norway Maple) even when "variety names" are included. For example, the scientific name of Emerald Queen Maple is *Acer platanoides* and common name is Norway maple. "Emerald Queen" may be included as the variety name, but variety names are not required.
- How well the exhibitor follows written directions is an important factor in judging.

### Division 361 – Other Natural Resources

<sup>sf</sup> Class 1 **Design Your Own Exhibit in Natural Resources, Conservation, Geology, or Ecology** – (SF164) - This class is for educational exhibits about natural resources, conservation, wildlife, or ecology that do not fit into other categories. Entries must be appropriate for fair display and no larger than 24 inches x 24inches. All entries must include a title and should be clear (a brief explanation or other method) about the intended purpose or message – what the exhibit is meant to show. Think about accuracy, creativity, educational value for viewers, and evidence of exhibitor's personal experiences and learning.

### Dept. D – Forestry

- This category provides 4-H'ers an opportunity to prepare displays that shows their expertise in many aspects of forestry. Involvement in this category will lead to expansion of seed, twig, wood, leaf, and tree knowledge for 4-H'ers. In addition, participants would learn more about common Nebraskan trees.
- The official reference for all forestry projects is the Tree Identification manual (4-H 332) which was recently revised and is available for purchase from UNL Marketplace. Other helpful forestry references include Trees of Nebraska (EC 92-1774-X), Leafing Out (4-H431), and Plant a Tree (EC 17-11-80)

## Division 320 – Forestry

<sup>sf</sup> Class 1 **Design Your Own Exhibit** – Prepare an educational exhibit about some aspect of trees, forests, or forestry that is of special interest to you. Possible topics include paper recycling, wild fire, forest products, forest wildlife, or forest pests. The only requirement is that the display must be no larger than 24 inches x 24 inches x 24 inches. Photographs, drawings, samples, charts, posters, etc. can be used but include enough information to explain the topic. Your display should be substantially different from other display classes. Be as creative as you like.

<sup>sf</sup> Class 2 **Leaf Display** – This display should include samples of “complete leaves” from at least 10 different tree species. The display must include at least 2 samples of simple leaves, compound leaves, and conifer leaves. Leaves should be pressed, dried, and mounted.

- Collection: Whenever possible, collect leaves from mature trees. Collect leaves any time after they have reached full size, usually beginning in early summer. Leaf samples should be in good condition and representative of the average leaves on the tree. Keep in mind that shaded leaves are often much larger than normal. Carefully remove leaves from the twig with the entire petiole or rachis intact. After collection, fresh leaf samples can be temporarily stored within the pages of an old magazine, but they should be properly pressed and dried for display. Be sure to record pertinent information during collection. All collection must be done by the exhibitor.
- Mounting leaves: Leaves may be displayed in a notebook or on a display board. Any method may be used to mount leaves, e.g. wire, glue, tape, staples, plastic bags, but be sure all their features can be clearly identified.
- Labeling leaves: Label each sample with the following information:
  1. Common name
  2. Scientific name
  3. Leaf type (broadleaf, needle-like, scale-like, awl-like)
  4. Leaf arrangement for broad leaf trees (opposite, alternate, whorled)
  5. Leaf composition for broad leaf trees (simple, compound),
  6. Collector’s name
  7. Collection date

8. Collection location (be specific, include state and county at a minimum)

If a twig is included with a sample, indicate “twig included” on the label. For example, the twig may be included with an eastern red cedar sample because the leaves are very small and difficult to remove from the twig.

<sup>sf</sup> Class 3 **Twig Display** – must include twig samples from at least 10 different tree species. Include at least two samples each of opposite and alternate leaf arrangements from broadleaf trees.

- Collection: Twig samples should be collected during the dormant season (November – April) when the buds are mature. Twig samples must be at least 6 inches long and exhibit buds. Leaves must be removed and side branches should be trimmed to less than 1 inch in length. All collection must be done by the exhibitor.
- Mounting: Twigs must be mounted on a display board. Any method, e.g. wire, glue, tape, staples, plastic bags, etc., may be used to mount twigs, but be sure all their features can be clearly identified. Be sure to cut the non-terminal end at a slant so the pith can be seen.
- Labeling: Label each sample must include:
  1. Common name
  2. Scientific name
  3. Leaf arrangement for broadleaf trees (opposite, alternate, whorled)
  4. Collector’s name
  5. Collection date
  6. Collection location (be specific-include state and county at minimum)
- Supplemental information, e.g. general uses, tree characteristics, etc., may be included to enhance educational value.



<sup>sf</sup> Class 4 **Seed Display** – The seed display must include seed samples from at least 10 different tree species.

- Collection: Tree seeds should be collected at the time of year when they mature, which varies widely depending upon tree species. For example: Silver maple seeds mature in May, while red oak acorns do not mature until September. Seed samples should be free of insect or disease symptoms. Remember to display seeds, not fruit. For example: the seed of honey locust is enclosed in a pod. Remove and display the seed, not just the pod. It is acceptable to display the fruit with the seed, but clearly label each. All collection must be done by the exhibitor.
- Mounting: Seeds may be displayed in a variety of ways, (ex: mounted on a display board, displayed in jars in a rack, etc.) but they must be securely mounted and easily viewed. Be as creative as you like.
- Labeling: Labels for each sample must include:
  1. Common name
  2. Scientific name
  3. Type of fruit, if known (example-samara, pod, nut, legume, etc.)
  4. Collector's name
  5. Collection date
  6. Collection location (be specific-state and county at minimum)
- Supplemental information, e.g. maturity date, average number of seed in the fruit, etc., may be included with the display to enhance educational value.

<sup>sf</sup> Class 5 **Wood Display** – This display requires samples of wood from 10 different tree species

- Preparation: Samples may be of any shape, e.g. sections from a board, wood cylinders turned on a lathe, horizontal or vertical cross sections of a small log with bark attached, etc., but all samples should be the same shape, e.g. all wood cylinders or all sections of a board. Each sample can be no larger than 4 inches x 4 inches 4 inches. Cut surfaces should be sanded to show the grain. Treating samples with a clear finish (no stain) is optional. All collection must be done by the exhibitor.
- Mounting: Samples may be displayed in a variety of ways, (e.g. mounted on a display board, displayed in a box or rack, etc.) but they must be securely mounted and easily viewed. Be as creative as you like.
- Labeling: Label each sample with:

1. Common name
2. Scientific name
3. Wood type (softwood or hardwood)
4. Collector's name
5. Collection date
6. Collection location (be specific-state and county at minimum)

- Supplemental information, e.g. common products, wood density, etc., may be included with the display to enhance its educational value.

<sup>sf</sup> Class 6 **Cross Section** – Display a disc cut from a tree species listed in 4H 332. The sample must be collected, by the exhibitor, within one year of the state fair judging day. The disc must measure 6 inches to 12 inches in diameter and 1 to 3 inches thick. The bark should be firmly attached, which may be difficult if the tree was dead when the disc was cut. Sand at least one side of the disc so the grain can be easily seen. If the disc is treated with a clear finish, both sides must be treated to minimize warping. As the disc dries, some cracking or checking can be expected and is allowed

- Labeling: The following parts must be clearly and accurately labeled on the cross section with pins, paper tags, or some other form of identification:
  - a) Pith
  - b) Heartwood
  - c) Sapwood
  - d) One growth ring (beginning and end)
  - e) Cambium
  - f) Bark

A separate label attached to the back of the disc must include:

1. Common name
2. Scientific name
3. Tree classification (softwood or hardwood)
4. Age of cross section
5. Collector's name
6. Collection date
7. Collection location (be specific-state and county at minimum)

<sup>sf</sup> Class 7 **Parts of a Tree** – (This project is only for ages 8-11) Prepare a poster, no larger than 24”x 24” that clearly identifies the main external parts of any tree.

1. Trunk
2. Crown
3. Roots
4. Leaves
5. Flowers
6. Fruit
7. Buds
8. Bark

Identify other internal parts, e.g. phloem, xylem, cambium, annual ring, pith, etc. is optional.

Attach a separate label on the back of the poster that includes the exhibitor’s name and age.

<sup>sf</sup> Class 8 **Living Tree** – Display a living tree seedling grown by the exhibitor from seed in the display container. The seed must be from a species listed in 4H 332. The seedling must be 60 days to 1 year old (on State Fair Judging Day). The display container must contain at least 8 inches of soil (potting mix or suitable natural soil), have drainage hole(s), and a drain pan to catch drainage water.

- Labeling: The waterproof label must be attached and include:

1. Common name
2. Scientific name
3. Seed treatments (if any)
4. Planting date
5. Emergence date
6. Collector’s name

- Supplemental information about the tree, e.g. where the seed was collected, growth measurements, uses for that species, etc., may be included in an attached notebook, poster, etc. to enhance educational value. Supplemental information will be an important factor in judging.

<sup>Sf</sup> Class 9 **Forest Product Display** – Prepare a visual display and/or collection tracing the origin of one non-lumber product that comes from trees and/or forests. The display must be no larger than 24 inches x 22 inches x 28 inches. Photographs, drawings, samples, charts, posters, etc. can be used. Posters submitted may be no larger than 22 inches x 28 inches and may be either vertical or horizontal. The contestant must identify what species of tree the product is derived from and where the product is harvest, grown, or otherwise collected. The product listed must be partially or fully derived from trees; if partial the approximate percentage should be articulated in the display. The goal of this exhibit is for students to learn that many products come from trees and forests and to explore one of these products through in-depth study. Information about the tree or forest product: e.g. information about harvesting, processing, industry information, and environmental or other benefits may be included to enhance educational value. Supplemental information will be an important factor in judging but should not exceed three printed pages of text. Cite sources of information. Personal interviews with industry professionals are encourage as a source of information.

<sup>sf</sup> Class 10 **Forest Health Display** – Prepare a visual display outlining a specific forest health issue such as a tree disease, insect pest, animal- or human-caused damage, or an abiotic issue such as weather damage. The display must be no larger than 24 inches x 24 inches x 24 inches. Original photographs, drawings, samples, charts, posters, etc. can be used. Actual specimens are strongly encouraged but must be properly preserved, i.e. insects pinned or placed in vials of alcohol, leaves pressed or dried. Posters submitted may be no larger than 24 inches x 24 inches.

-Explain through the display what species of trees the health issue affects, diagnostic features of the issue (symptoms in trees, identifying features of the pest, etc.) and management options

- Include common and specific names of trees and pests.

- Supplemental information about the tree or forest health issue: e.g. origin, proliferation in Nebraska/United States, and physiological effects on the tree may be included to enhance educational value. Supplemental information will be an important factor in judging but should not exceed three printed pages of text. Cite sources of information.

- Attach a separate label on the back of the display that includes the exhibitor's name and age.

<sup>sf</sup> Class 11 **Wildfire Prevention Poster** – Prepare a poster, no larger than 24 inches x 24 inches that promotes wildfire prevention strategies. Strategies articulated in the poster can include personal and/or land management actions. Attach a separate label on the back of the poster that includes the exhibitor's name and age.

- Supplemental information about wildfire prevention should be attached to the poster: e.g. frequency of wildfires in Nebraska/United States, financial costs of wildfires, environmental factors that contribute to wildfires, etc. to enhance educational value. Supplemental information will be an important factor in judging but should not exceed three printed pages of text. Cite sources of information.

<sup>sf</sup> Class 12 **Sustainable Landscape Diorama** – Box must be no larger than 24 inches x 24 inches. The exhibit must show a Nebraska landscape that includes elements such as windbreaks, fields, pastureland, CRP, public lands, community/municipal landscapes. The goal of this exhibit is for students to articulate conservation and sustainability best-practices that can be implemented on a landscape, while addressing landowner and other stakeholders interests.

- Label point/nonpoint sources of pollution, carbon sequestration, water-wise practices, wildfire prevention strategies, renewable energy sources, and other conservation practices as well as at least 10 species of plants included in the diorama.

- Attach to the exhibit a brief report including supplemental information describing the diorama, defining conservation practices, and outlining opportunities for landscape improvements to enhance educational value. Supplemental information will be an important factor in judging but should not exceed three printed pages of text. Cite sources of information.

<sup>sf</sup> Class 13 **Tree Planting Project Display** – Plant a tree in your community. Prepare a visual display where the student articulates proper tree planting techniques, why the individual tree species was chosen, as well as steps taken to continue care for the tree after initial planting. The display must be no larger than 24 inches x 24 inches x 24 inches. Photographs, drawings, samples, charts, posters, etc. can be used. Posters submitted may be no larger than 24 inches x 24 inches. The tree must have been planted 60 days to 1 year before State Fair judging day. Students must obtain permission from necessary authorities and property owners before planting any trees.

- Labeling: the following information about the tree must be included in the display: 1) common name 2) scientific name 3) planting location 4) planting date 5) tree source 6) planter's name 7) proper tree planting steps 8) tree care (after planting)

- Supplemental information about the tree: e.g. why the species was chosen, growth measurements, uses for that species, etc., may be included in an attached notebook, poster, etc. to enhance educational value. Supplemental information will be an important factor in judging but should not exceed three printed pages of text. Cite sources of information.

## **Dept. D – Range Management**

### *General Information:*

- The purpose of this category is to help 4-H'ers identify and collect range plants. In addition, participants will learn the basics of range management, and Nebraska's range. Through the creation of range boards 4-H'ers will become more proficient in knowledge of Nebraska's range.
- Each exhibit must be properly identified with Unit and Class.
- All plant displays and display covers must be the result of the current year's work.
- Plant identification and lists of appropriate plants in each category (grasses, forbs, shrubs, and grass-like plants) can be found in the Range Judging Handbook and Contest Guide, Common Grasses of Nebraska, and Common Forbs and Shrubs of Nebraska.
- The purpose of these exhibits is to demonstrate to the public the benefits from the study and application of crop, weed, range and soil sciences to solving problems in management, conservation, sustainability and environmental protection.

- For guidelines on specific projects, refer to appropriate project manuals.
- Books
  - o Plants must be mounted on sheets that are no larger than 14 inches wide x 14 inches high. Plants should be glued rather than taped and the mounts should be protected with a clear cover. Proper plant mount should include root as well as stem and leaf tissue.
- Exhibits will be judged on completeness of plant mount, accuracy of identification, labeling, neatness and conformation to project requirements.
- Each completed mount must have the following information (see example below) in the lower right corner of the mounting sheet:
  1. Scientific name (in italic or underlined), with authority,
  2. Common name.
  3. County of collection.
  4. Collection date.
  5. Collector's name.
  6. Personal collection number, indicating order that plants were collected in your personal collection.
  7. Other information, depending on class selected, i.e., value and importance, life span, growth season, origin, major types of range plants. This information should be typed or printed neatly.

Example:

Plants of Nebraska

Scientific name: *Schizachyrium scoparium* (Michx.) Nash

Common name: Little bluestem

County of collection: Sheridan County

Collection date: 6 August 2017

Collector's name: Joe Smith

Collection number: 37

Value and Importance: Livestock Forage: High

Wildlife Habitat: High

Wildlife Food: Medium

Life Span: Perennial

Season of Growth: Warm Season

Origin: Native

- Displays
  - o The purpose of the display is to tell an educational story to those that view the display. The display is a visual representation (pictures, charts, graphs) no larger than 28 inches x 28 inches on plywood or poster board. The display should be neatly titled. Make sure to label display with exhibitor's name, address, and county on back side.
- Boards
  - o Boards should be no larger than 30 inches wide x 36 inches tall. Boards should be adequately labeled.

### **Division 330 – Range Management**

- <sup>sf</sup> Class 1 **Value and Importance for Livestock Forage and Wildlife Habitat and Food Book – (SF260)**  
-A collection of 12 different plant mounts, with 4 classified as high value, 4 as medium value, and 4 as low value for livestock forage, wildlife habitat, or wildlife food. Value and importance classifications can be found in the Range Judging Handbook and Contest Guide, Appendix Table 1 (Revised July 2016) starting on page 42. Plants can consist of any combination of grasses, grass-like plants, forbs, or shrubs. Assemble plant mounts in order of high, medium, and low value and importance. Label each plant mount with its value and importance classifications for each of the three areas: Livestock Forage, Wildlife Habitat, Wildlife Food.
- <sup>sf</sup> Class 2 **Life Span Book – (SF260)** - A collection of 6 perennial plant mounts and 6 annual plant mounts selected from grasses or forbs.
- <sup>sf</sup> Class 3 **Growth Season Book – (SF260)** - A collection of 6 cool-season grass mounts and 6 warm-season grass mounts.
- <sup>sf</sup> Class 4 **Origin Book – (SF260)** - A collection of 6 native range grass and 6 introduced grass. Introduced grasses are not from North America and often used to seed pastures.
- <sup>sf</sup> Class 5 **Major Types of Range Plants Book – (SF260)**  
- A collection of plant mounts of 3 grasses, 3 forbs, 3 grass-like, and 3 shrubs.

<sup>sf</sup> Class 6 **Range Plant Collection Book** – (SF260) -A collection of 12 range plant mounts with something in common (ex: poisonous to cattle, or historically used as food by Native Americans, or dye plants, or favorite antelope forage, etc.) Include a short paragraph in the front of the book which describes what the plants have in common and why you have chosen to collect them.

<sup>sf</sup> Class 7 **Parts of Range Plant Poster** – (SF259) - Mount a range plant on a poster board. Label all the plant parts. Include the plant label in the lower right corner, including the scientific and common name of the plant. Put your name and 4-H county on the back of the poster.

<sup>sf</sup> Class 8 **Special Study Board** – (SF260) - A display of the results of a clipping study, a degree of use study, a range site study, etc. A short essay must accompany the display to explain the reason for the study, what was learned, and study results. This should be placed in a sheet cover attached to the board.

<sup>sf</sup> Class 9 **Junior Rancher Board** – (SF260) -This exhibit should include a ranch map with a record book or an appropriate educational display on some phase of rangeland or livestock management. A short essay must accompany the display to explain the purpose of the rancher board, what was learned, etc.