

## RANGE SCIENCE 4-H PROJECT AREA

ESSM 1

### **INTRODUCTION:**

The 4-H Range Science project area has a multitude of educational opportunities for 4-H youth, 4-H adult leaders and 4-H families in the range and natural resource management area. The project can successfully function at the individual, county, club, project group and team level. The 4-H Range Science project area includes training for youth and adults about range management, natural resources and the environment. The program has support materials for the conduction and training of the 4-H Range and Pasture Grass Identification contest and the 4-H Range Evaluation contest which both lead to competition at State 4-H Roundup. In this program area, 4-H youth can learn about their own environment which surrounds them, responsibility of humans and stewardship of natural resources, and the plant-animal-soil-water interrelationship. The 4-H Range and Pasture Grass Identification Contest and the Range Evaluation Contest are two contests coordinated and supported by the Extension Range Specialists program unit and Texas 4-H. This project area, although a part of Texas 4-H for over 64 years, has grown from 480 youth in 1991 to over 2,300 4-H youth in 2003.

### **RANGE SCIENCE PROJECT DESCRIPTION:**

The Range Science project promotes and develops knowledge and skills in practical range, natural resource and ranch management. Projected costs are low to medium. Project teaching areas for knowledge and skills can include but are not limited to ecology, value of the rangeland resource, products from rangeland, total resource management, ecosystem processes, water, how plants grow, vegetation areas of Texas, primary and secondary plant/soil/animal succession, plant identification, brush control, weed control, poisonous plants, rangeland seeding, grazing management strategies, rangeland soils, grazing distribution, harvest or use of native plants, prescribed burning, management for a healthy range ecosystem, stocking rate decisions, how domestic grazing animals and wildlife species eat, habitat needs, endangered species, land issues, impact of urban sprawl, prairie restoration, range animal nutrition, wildlife needs, range condition and trend, range monitoring, photo monitoring, ranch planning, ranch management practices, leasing rangeland, range risk management, range science careers, stewardship and others. Training materials on these topics and others are available from the Extension Bookstore web site at <http://agrilifebookstore.org> under publications, Agriculture and then Rangeland. Additional information on range management issues and current literature can be found at the Ecosystem Science and Management Extension web site <http://essmextension.tamu.edu> and the Texas Natural Resources web site <http://texnat.tamu.edu>.

In support of the Range Science project area, 4-H leaders and youth can get AGSC 382, Range Management and Ecology curriculum (8882B) from the Instructional Materials Service at Texas A&M University, 2588 TAMU, College Station, Texas 77843-2588 (office phone 979/845-6601). The 382 curriculum comes with 27 topics and 180 pages which can be used at project meetings and can be purchased for \$23.00 bound (item number 8882B) and unbound \$20.50 (item number 8882). You can also visit the IMS web site [www-ims.tamu.edu](http://www-ims.tamu.edu). This resource is excellent for a 4-H leader who is conducting the range management/range science program area and working on the goals and objectives of the project area other than just going to grass, plant and range evaluation contests. These goals are listed in 4-H Clover, Opportunities Handbook 2013-2014. A good example is number 8870-A, titled Identification and

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Classification of Range Plants. The 382 curriculum is also an excellent home study unit.

### **RANGE AND PASTURE GRASS IDENTIFICATION:**

In general, the 4-H Range and Pasture **Grass Identification** Contest involves youth and leaders who are interested in learning about rangeland, pastureland and natural resources. For the contest, 4-H youth participants learn to identify all of the 74 native and introduced grasses which are listed on Extension publication RS1.044, Master Plant List for Texas Range and Pasture Plant Identification Contests. The 74 grasses on the grass contest have been selected because of their value in making decisions about the Texas forage resource, value and health of the land base, stocking rate adjustments, water infiltration and erosion potential, livestock forage needs, wildlife food needs, and most especially, these grasses help us to determine the change that has occurred on our land base in Texas. The list contains grasses that represent the kind of plants present in the original vegetation community and those that have responded to disturbance and long term grazing by livestock or in general, grasses present on the landscape can reflect the success of human management on Texas rangelands and forested areas. Learning the identification of these grasses and their values ties in very well to learning about how plants grow, grazing impacts and range and natural resource land practices. The youth learn skills of grass and plant identification and examination, plant parts, working and learning together, and how to compete in a contest where there is a reward; ie. **finding out about how much they have learned to that point and where to continue studying and resetting goals.**

A grass contest score card is available for printing off of the internet at the Texas State 4-H web site. There are generally 40 mounted or live grasses on the County and District Grass Contests, and up to 50 on the 4-H State Roundup Contest in June. The characteristics and correct spelling of the grass common names have to be memorized. To get the grass name counted correct, graders do have to be able to read it. As youth mark the characteristics in the boxes on the score card, they should use an 'X' to mark the appropriate box and not a check or abbreviations for the characteristic terms. Each characteristic is worth 1 point of the 10 total points, no matter how many characteristics are required for a grass. If a youth identified the grass correctly as say "Tobosa", but missed one characteristic, he/she would score 9 points. The characteristics have to be memorized. A 4-H grass team is composed of either 3 or 4 individuals. Generally, the team score is compiled using the highest 3 scores of the team members. Study for the grass contest is typically done with mounted grass specimens, live grasses growing in pastures and supplemental work found in Texas grass books and publications. **Specimens for practice are available from the TAMU Range Club** by contacting the Club Advisor Dr. Bob Knight at email address bob-knight@tamu.edu or by phone at 979/845-5557.

### **TEXAS MAJOR LIVESTOCK SHOW PLANT CONTESTS:**

After 4-H youth learn the grasses and compete in grass contests, they may want to advance to learning the forbs, legumes, and woody plants on the Master Plant List. The rangelands or prairies of Texas had more than just grasses growing on them. Livestock show contests at Houston, Dallas State Fair, Fort Worth, and the Amarillo Tri-State Fair Livestock Show cover all 129 plants on the Master Plant List which

includes grasses, forbs, legumes and woody plants. This gives the youth another level of training and the establishment of a new set of goals. The stock show contests use the same score card as the 4-H grass contests except at Houston where scantron score sheets and the computer are used to assist in rapid grading and team totals. Stock show plant contests are held throughout the year and can supplement the educational activities of a successful 4-H Range Science project. Schedules of events are on-line for each stock show.

#### **4-H RANGE EVALUATION CONTEST:**

As youth learn the entire plant list, they can also move into the **4-H Range Evaluation Contest** area. Now the 4-H judging program concentrates on making decisions about the rangeland resource including range condition determination, range sites, and the use of management tools for benefitting the forage, soil, water, and livestock/wildlife resources. They learn about grazing distribution, season of forage use, kinds and classes of livestock and stocking rate. They actually calculate a current stocking rate for the given situation. **But the key to success in this contest still heavily relies on the youth's ability to identify plants** and have knowledge of their ecological and economic value. The 4-H Range Evaluation Contest is conducted totally outdoors. A 4-H Leader Guide, RS1.055 4-H Range Evaluation Contest Manual, is available for training at the 4-H web site at <http://texas4-h.tamu.edu/project/index.html>. The three scorecards for this contest are RS1.040 (Part I - Plant Identification), RS1.041 (Part II - Ranch Situation and Management Decisions) and RS1.042 (Part III - Rangeland Health). New revised guidelines when needed, are available in the fall of each year.

Each year range evaluation contests are held across the state in the months of March, April, May and June. These contests are held strictly outdoor and challenge the youth to recognize plants in various stages of growth (flowering, vegetative, seedlings/rosettes, etc), understand soil-plant-water relationships, range ecological sites, rangeland health, differences in plant communities, the principles of ecology and grazing management and the many tools and practices conducted on a ranch. Judging Clinics for 4-H range evaluation are held at College Station during the TAMU Judging Clinics in the spring each year. The top three senior teams at District advance to the State Roundup contest held at College Station in June.

Qualified 4-H range evaluation teams in Texas can participate in the National 4-H Range Judging contest held at Oklahoma City each year in early May. Interested teams need approval of the State 4-H Leader. Information for the 4-H National Range Judging Contest (results, registration and general information) can be found by a google search on "National Range Judging Contest" and "scorecard.com".

#### **YOUTH RANGE WORKSHOP AND OPPORTUNITIES:**

During this process of learning, some youth (ages 13-17) may want to attend the weeklong intensive but extensive training in range management titled the **Texas Section Youth Range Workshop** (held in June each year). This training provides youth with an opportunity to become effective range project junior or teen leaders in the club or County program for training younger 4-H members and conducting good community service. Information on the Youth Range Workshop is available at: <http://rangelands.org/texas/>.

Other youth may take a project in range management and develop it into a talk or presentation for the 4-H

Conservation of Natural Resources program or a demonstration talk for 4-H Farm and Ranch Management. The Range Science project area is also complimentary to projects in leadership, animal science, plant and soil sciences, wildlife, forestry, soils, conservation of natural resources, Field and Stream, shooting sports, photography and others.

The range program is a dynamic and growing educational opportunity for youth. It has various degrees of intensity and learning which is partially determined by the strength and interest of leaders involved in the program. Many of the publications, DVDs and videos used for the adult range program can also be used with training Texas youth in a project setting and include topics of total resource management, risk management, prescribed burning, brush and weed control, prescribed burning in Texas, alternative uses of rangelands and various Extension “Brush Busters” videos.

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Prepared by: Dr. Barron S. Rector, Associate Professor and Extension Range Specialist  
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