

The Mountain Meadow

October 2023

Sublette County
Conservation District

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*Adrienne Kirkwood,
SCCD Water Resource
Specialist, cleans
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send for identification*



*Dragonfly larvae that
were scrubbed and
collected for data
analysis*

**Time to Get Buggy,
It's Macroinvertebrate Sampling Season!**

A quarterly publication from the Sublette
County Conservation District.

"By Working with local people who
understand local problems, the best
conservation measures can be
accomplished."

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sublettecd.com

What We've Been Up To From the District Manager's Chair

Fall has come to Sublette County and with that comes our annual macroinvertebrate sampling on the creeks and rivers within the County. Every year SCCD staff head to the water to "scrub rocks", collecting insects that live in the water. These insects are then preserved and sent off to a lab for identification. The lab identifies 200 insects from a subset of the one square foot sample that the District collects. From that there are several indices that are calculated to help educate the District on the macroinvertebrate health of the aquatic system. The results can tell us the health of the system and if we are shifting in the types of insects that we are seeing in the water. The insects we collect, for those fly fishing enthusiasts, are the exact insects you tie on the end of your line to try to catch that five pound trout hiding under the log in the river! These samples can help clue the District in on changes occurring and potentially what is causing the change. The macroinvertebrates have a short life cycle and are a good indicator of impacts to the system. This sampling also pairs nicely with our chemical, physical water grab samples that we collect throughout the summer. So if you see us in the water on our knees, stop and say hi and take look at our samples to know what the fish might be biting on that day.





NRCS Update

Hey, It's Been A Good Year for Hay!

Jason LeVan, Range Management Specialist



Vegetation experienced great growing conditions this year and now that most hayfields are cut, producers have been happy with above average, if not record, yields off their fields. The NRCS has been working with several people throughout the county the last couple months to improve haying methods and implement special wildlife considerations.

General Considerations:

Haying equipment can be cleaned between cuttings to reduce the spread of plant diseases, insect pests, and weed seeds between different fields. Consider treating invasive plants and noxious weeds in your field before they spread.

Harvesting forage in the afternoon can optimize water soluble carbohydrates and nutritional quality while allowing the vegetation to dry out from a night's rain or heavy morning dew.

Consider raking at 30-40% moisture, inverting swaths if moisture is above 40%, and baling field cured grass hay around 15-20% moisture. Baling when moisture levels are below 15% can lead to excessive leaf loss and baling above 20% increases the likelihood of moldy hay, and in extreme cases, stack fires.

Cutting forage plants at or above a certain height will encourage plant health, vigor, and avoid winter kill. For example, the approximate cutting height and minimum leaf growth before a killing frost should be 3 and 4 inches for smooth brome, 3 and 6 inches for timothy, and 2 and 7 inches for alfalfa, respectively.

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Methods to Protect Wildlife and Improve Habitat:

Harvest during daylight hours after July 15th when crucial fawning, nesting, and brood-rearing periods have passed.



Securing a flushing bar to haying equipment will encourage wildlife to move from the path of wheels and cutting blades.

Harvest from the inside of the field outwards or from one end of the field to the other. These mowing patterns provide cover connectivity for animals to escape the field and decreases predation since birds and small mammals do not have to cross through an open field. Avoid cutting from the outside in toward the center of the field.

Consider leaving a buffer on the field's edge to provide increased cover and forage for wildlife transitioning from sagebrush uplands to the freshly cut field. Buffer vegetation can be efficiently and effectively utilized by grazing livestock in the pasture during fall and winter months.



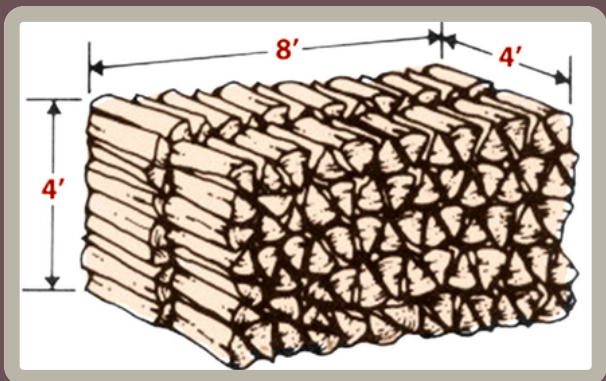
The Best Wood Makes the Best Fire



Traci Berg, SCCD Administrative Coordinator



Fall is upon us and if you are like me then that means going out and cutting down your heat source for this winter. This is a chore that most of us don't necessarily enjoy but choose to power through as it provides (in my opinion) the best heat source ever!

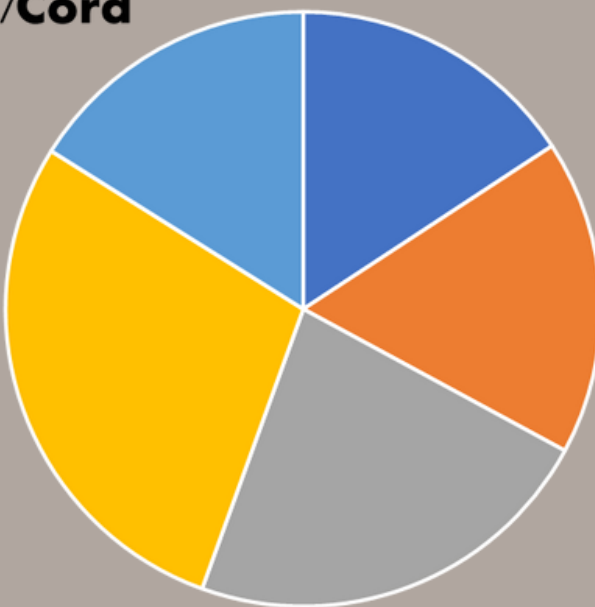


Did you know wood varieties average to about 4,500 lbs of firewood per cord? That's a lot of wood! The measurement of a cord of split and stacked wood is 4x4x8 feet or (128 cubic feet). Firewoods are classified by two types, hardwood and softwood. Hardwoods are tree species that shed their leaves in the fall and softwoods are trees that produce needles. While hardwoods

burn hotter and longer than softwoods, the recommended varieties of these are not available in our area. So now you might be wondering what should I burn?

Million BTU's/Cord

- Hardwoods**
- Aspen
- Cottonwood
- Softwoods**
- Lodgepole Pine
- Douglas Fir
- Engelmann Spruce

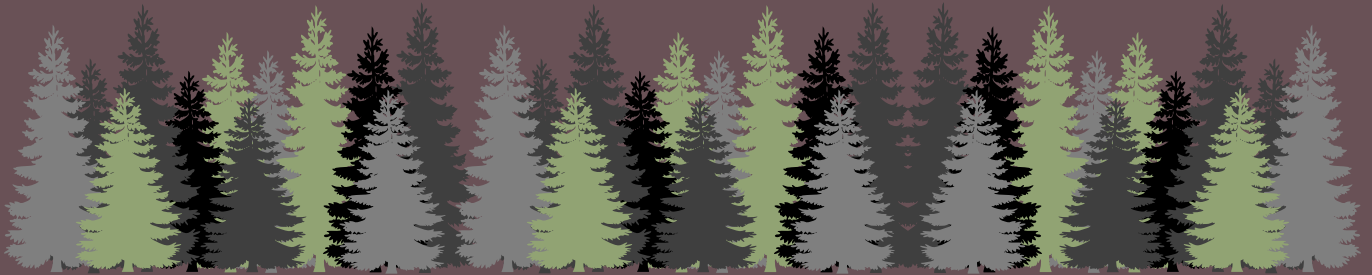


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When selecting what trees to use for firewood, it is important to keep BTUs (British Thermal Unit) in mind. BTU's are energy measured in the amount of heat given off, as some wood varieties burn hotter than others. A properly seasoned cord of Douglas Fir provides 26.5 million BTU's, with Lodgepole Pine only producing 22.3 million BTU's per cord. Spruce varieties are less popular to gather as they only produce a 14-15 million BTU range per cord of wood.



This being said, Douglas Fir is the prime choice for softwoods in our county and even better than some hardwood varieties as far as total heat. Another thing that makes it a great choice is that the trees are straight and knot free with very few branches making it an ideal variety for limbing and splitting. Douglas fir and other softwoods also require less time for the wood to become seasoned than hardwoods which can take up to 2 years. Seasoning your wood doesn't mean grabbing your salt and pepper, but instead giving the wood time to dry after being cut. In order to maximize the heating potential of your wood, it is important to make sure all of the moisture content has left the wood.



Also as a reminder Sublette County Conservation District's Seedling Tree Program will be kicking off and taking orders November 1st . Order forms can be found on the Tree Program page on our website, sublettecd.com. Please feel free to stop by or give us a call with any questions! Find us at 217 Country Club Ln. Pinedale, WY; or reach us at (307)367-2364, or sccd@sublettecd.com.

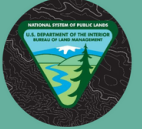
VIRTUAL FENCE

Open House!

Save the Date

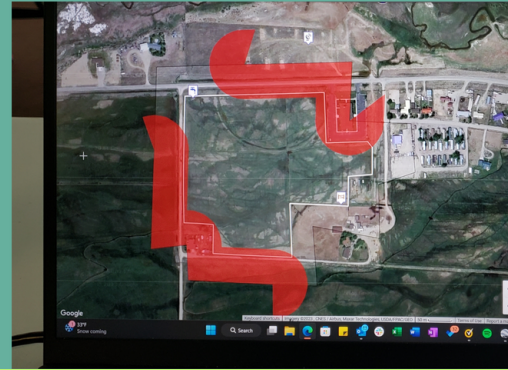
Join us as we take a hard look at the use of virtual fence in Sublette County as a new tool for livestock management.

We will be sharing successes, pitfalls, and lessons learned of the Sublette County pilot project. We invite the public to come with questions.



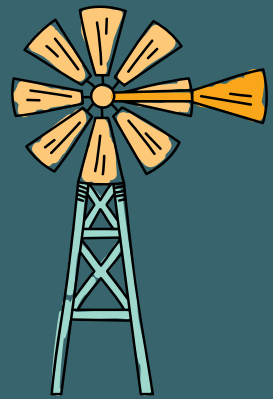
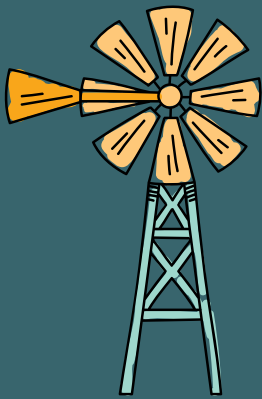
**DECEMBER 5
FROM 4 PM TO 6 PM**

CONTACT SHARI MEEKS AT 307-367-2364
FOR MORE INFORMATION



WDCA - Technical Services *AgriStress Helpline Billboards*

Written by Lucy Pauley, Wyoming Department of Agriculture
Submitted by Justin Caudill, Wyoming Department of Agriculture



In your travels around Wyoming this summer, have you seen any billboards promoting the AgriStress Helpline? Through a grant from the USDA-NIFA, the WDA has contracted with two outdoor advertising companies to promote the helpline statewide. The helpline is designed specifically for those working in agricultural and features operators who understand the daily stressors of the industry. The helpline is not just a crisis line, it can also be used by anyone who is looking for more resources or needs someone to talk to. The Wyoming Department of Agriculture has quite a few postcards and other promotional material for the helpline. If you'd like any posters, etc. for your community, please let Lucy know at: lucy.pauley@wyo.gov.



Protecting Watersheds Sustains Habitats



Keller Hyde, Range Specialist



This summer I have had my fair share of playing in the water while monitoring for stream health using a protocol called Multiple Indicator Monitoring, or MIM for short. MIM was developed to inform land managers and landowners about the health of the streams in the areas that they oversee and provide details on where management may need to be altered. When using the MIM protocol, a person walks down the middle of the stream stopping every 2.75 meters to place a monitoring frame on the stream bank to evaluate a series of indicators that help determine the impacts of livestock, wildlife, and recreation on the stream. These indicators include Stubble Height, Streambank Alternations, Woody Species Use, Greenline Composition, Wood Species Height Class, Streambank Stability and Cover, Wood Species Age Class, Greenline-to-Greenline Width, Substrate, and Residual Pool Depth and Pool Frequency.



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While the person in the stream calls out their observations of these indicators, another team member standing on the stream bank enters the data into a spreadsheet that is later run through an algorithm to judge how healthy the streambank is by giving rankings in certain short-term and long-term categories. I think it is impressive that so much can be told by a quick trip to a site using this data. Streams can change drastically year to year depending on things such as weather or management. They can also tell a story more obviously about the overall condition of a pasture than other areas because they are often more sensitive and under greater pressure because of water access and good tasting grass species for livestock and wildlife. Going forward, I feel that MIM monitoring will be an essential tool to help us see changes quickly and determine what management strategies work best for our rangelands here in Sublette County.



UNW Extension Office - Sublette County

Hay Analysis Reports: Interpreting Results

Dagan Montgomery, Agriculture & Natural Resources Extension Educator

More and more beef producers nationwide are having their hay sampled to analyze its nutrient content. This relatively simple and affordable exercise allows cattlemen an in-depth look at the actual nutrient profile their herd will receive from hay, allowing them to plan supplemental feed programs accordingly.

However, before a hay analysis can be effectively put to use, it has to be understood. Depending on the lab performing the analysis, you may receive back a simple list of nutrients next to the corresponding measured value, with no indication of whether the value is high, average, or low compared to similar feeds. The nutrients themselves may only appear as abbreviations and could include a long list of measured components, some of which are more important than others. This article will go through a basic break down of the key nutrient components found in most routine hay analyses, as well as the relative values to look for in each.

Moisture

Typically, the first values you'll find on a hay analysis report are moisture and dry matter (DM), a means of comparing the amount of water within different feeds. This is determined by drying the hay in an oven and then weighing all non-water components. Nutrient values will often be reported as both dry matter (DM) and "as-fed" (AF) or "as received". Hay should be compared to other feeds using the DM value for nutrients. For the rest of this article, values for other nutrient measurements will be discussed on a DM basis.

Moisture level also greatly influences the stability of harvested forage during storage. The target for hay is around 85% DM, or 15% moisture. Baleage is usually 40 – 60% DM, and silage 30- 40% DM for proper fermentation. You'll notice some moisture should remain, as being 100% water-free decreases palatability and leads to leaf shatter.



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Crude Protein

Protein in ruminant feeds is usually expressed as crude protein, or CP, as a percentage of DM. This is based on the total nitrogen in the plant matter multiplied by 6.25 as plant protein is typically 16% nitrogen. Crude protein level is critical for a productive beef herd. Protein is required for growth, lactation, reproduction, and muscle development. This is why protein is one of the most commonly supplemented nutrients for grazing or hayed cattle. It is also the most expensive. Dry gestating cows need at least 7% CP on a daily basis (7% value is also considered the bare minimum for wintering cattle, as this is lowest level needed to support rumen function). For at least the first 60 days after calving, a cow's needs increase to 11% CP. Throughout the rest of lactation cows need at least 9% CP. Growing rations for calves typically contain 14 – 16% CP. Crude protein can vary based on forage species, maturity, soil, and storage stability.

Fiber

The fiber content of the forage is made up of the structural components in the grasses' cell wall and is usually broken into neutral detergent fiber (NDF) and acid detergent fiber (ADF), both expressed as a percentage of dry matter. Neutral detergent fiber contains the components cellulose, hemicellulose, and lignin, and is what remains after the digestible material is removed with a neutral detergent. Forage intake will decrease as NDF increases, and the formula $120 \text{ divided by NDF}$ can help determine how much the animal will eat as a percentage of body weight. For example, if NDF is 50%, dry matter intake will be 2.4% of the animal's weight. Neutral detergent fiber can range from 40 to 65% DM, and at 60% and higher begins to noticeably affect feed intake. Lower values are typically desired for NDF.

Acid detergent fiber is what remains after remaining NDF has been removed with acid detergent. Forage digestibility decreases with increased ADF. Average ranges for ADF in hay are anywhere from 30 to 45% DM. Values above 40% ADF usually indicate a lower quality hay. Both forms of fiber increase with plant maturity and are typically lower in legumes than grasses.



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Energy

Energy in a feed can be measured in several ways. The most common and practical way to evaluate energy content of a forage is total digestible nutrients, or TDN. Total digestible nutrients are also expressed as a percentage of dry matter, and are the sum of digestible carbohydrates, protein, and fat the animal will receive. In general, hay with less than 52% TDN would be considered lower quality, hay with 52% to 58% TDN would be medium or average quality and hay exceeding 58% would be high quality. Based on the 2016 "Nutrient Requirements of Beef Cattle, Eighth Revised Edition", mature cows that are nursing calves need a minimum of 58 to 61% TDN in their diet, whereas a dry pregnant cow should be getting at least 50 to 54% TDN, depending on stage of pregnancy. These values can easily be converted to pounds by multiplying the percentage of TDN by the total pounds of dry matter the animal eats per day.

Minerals

Both macrominerals and trace minerals are critical for cattle growth and performance, and several will show up on a good hay analysis. Two of the key minerals you should look for are calcium (Ca) and phosphorous (P), both usually reported as a percentage of total DM. These are both needed for skeletal growth in growing cattle and are crucial for lactation. Dry cows need 0.25% to 0.28% Ca and 0.16% to 0.19% P a day in their diets. Cows at peak lactation need at least 0.31% Ca and 0.21% P per day. The ratio of calcium to phosphorous should remain between 1.5:1 and 4:1, because too much phosphorous can impede calcium absorption. Most common complete mineral mixes are sufficient to provide cattle with enough calcium and phosphorous.



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Calculated Values (RFV & RFQ)

Several values can be calculated based on other results from a hay sample. Relative Feed Value (RFV) and Relative Forage Quality (RFQ) are calculated values and meant to combine energy content and dry matter intake into a single value, which is measured against full bloom alfalfa as a standard (full bloom alfalfa is assumed to have RFV=100). These are meant to provide an idea of how well a forage would provide for a ruminant animal if that was all that was being fed. Both may appear on a hay sample analysis. However, depending on the lab, these may need to be specifically requested.

Relative Feed Value was developed first, calculated using the measured values for ADF and NDF in the sample. The problem is that RFV isn't accurate across forage types, such as when comparing good grass hay to legumes, so RFQ was developed using TDN as part of the calculation and is considered a better judge of true potential for a forage to predict animal performance.

In most cases, RFQ will range from 50 to 250. In hay, RFQ < 90 = low quality, 90-110 = fair quality, 111-140 = good quality, 141-200 = premium hay, > 200 = outstandingly high-quality hay. Dry cows can get by on hay in the 100 to 115 range, whereas growing cattle and lactating cows really need hay in the 115 to 140 range.

A good hay analysis can provide a tremendous amount of information about the actual nutrition your herd is receiving. But the data you get back can be difficult to sort through, especially without a good frame of reference for what the values and nutrient components mean. Some values are extremely important to pay attention to and can go a long way in formulating a good supplementation program for your herd. Others may not be as crucial.

If you still have questions or want to be sure your interpretation is correct, reach out to your local extension personnel for assistance. A list of county extension offices for Wyoming can be found at <https://www.uwyo.edu/uwe/index.html>.



SAVE THE DATE!



UNIVERSITY
OF WYOMING

Extension
Sublette County

Green River Rancher's Workshop

Presentations by:

UW Beef Specialist Shelby Rosasco

UW Ag. Economics Research Scientist Brian Lee

Sublette County Extension Educator Dagan Montgomery

Topics:

Replacement Heifer Development, Repro Tract Scoring,
Hay Analysis, Beef Market Updates & Outlooks

November 29th

10:00am-4:00pm (tentative)

Sublette County Extension Office

9660 US Highway 191, Pinedale

FREE LUNCH WITH RSVP

Updates and RSVP info to come

FOR MORE INFORMATION

Call (307)367-4380 or email dmontgo8@uwyo.edu



UNIVERSITY
OF WYOMING

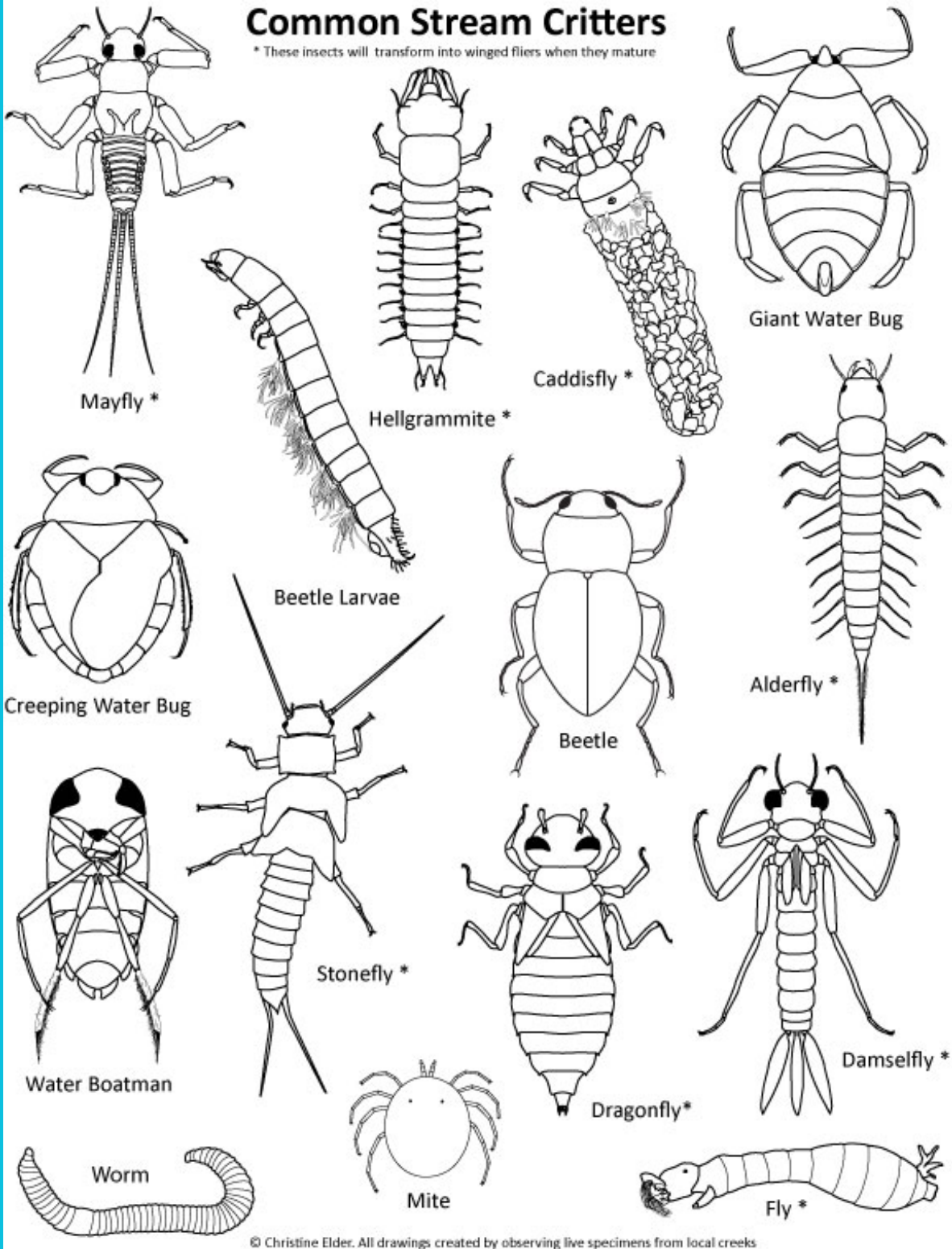
Extension
Sublette County



Kid's Corner

Common Stream Critters

* These insects will transform into winged fliers when they mature



© Christine Elder. All drawings created by observing live specimens from local creeks

Who Are We?

Sublette County Conservation District Board of Supervisors

Coke Landers - Chairman
Darrell Walker - Vice Chairman
Dave Pape - Sec/Treasurer
Meghann Smith
Milford Lockwood



Sublette County Conservation District Staff

Michael Henn, District Manager
Traci Berg, Administrative Coordinator
Melanie Purcell, Wildlife & Habitat Program Manager
Shari Meeks, Range Program Manager
Adrienne Kirkwood, Water Resource Specialist
Justice Miller, Rangeland Specialist
Keller Hyde, Rangeland Technician
Kamryn Kozisek, Natural Resource Technician Senior

Partners: USDA/NRCS Staff

Jason LeVan, Rangeland Management Specialist
Joey Galanti, Ecological Site Specialist
Dillon Gray, Autumn Boxum, Taylor Kepley, Jenna Platt-Soil Survey Team



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