FRAMS is an online drought risk management tool designed to offer the ranching industry a web-based forage risk assessment tool that is available 24/7. FRAMS offers valuable and useful information to both a casual user as well as the very analytical participant. The FRAMS system monitors your specific site to assess whether you are currently in a drought and what the outlook may be 30, 60 and 90 days from now. If drought conditions are predicted, FRAMS provides the means to decide whether to keep and feed livestock or to destock a portion (or all) of your herd.

First: The Forage Survey Visit

Before we start working with the FRAMS website, let us review the forage survey that was conducted on your farm or ranch after you signed up to participate in the FRAMS project.

The purpose of the forage survey is to gather plant community and soil data from your farm/ranch site needed to parameterize a forage growth simulation model (PHYGROW). This model computes forage deviation from normal and reports it as a percentage above or below normal production. During the site visit, locations for rain gauges were discussed. Also, your exact position was determined. This allows your site to link with the NOAA 12x12 mile weather grid system so that rainfall you record and enter online is integrated with the solar radiation and temperature data that help
Getting Started

Website: http://cnrit.tamu.edu/frams

To log in, you will need the user name and password assigned to you by the FRAMS administrators. See the contacts page for personnel listings.

Your User Menu is grouped into 4 sections. The RANCH SETUP pages ask for data needed to setup your FRAMS site online. You rarely need to come back to these pages. The ENTER RANCH OR MARKET INFORMATION pages need to be updated regularly to insure that your FRAMS reports are current. The MAKE A DECISION pages show reports that may facilitate drought mediation decisions. The VIEW RESULTS OR EXECUTE RUNS pages should be viewed regularly to update your PHYGRW runs and check on the forage status and outlook.

The first time you access the FRAMS website you will need to set up your rain gauges and enter information regarding your livestock herd, costs during a typical year, estimated costs during a drought, and market value of livestock.

You may use information based on your records or knowledge. Tools and links are available within the webpage that may help you determine cost and market values applicable to your situation.

The FRAMS website will generate a forage status report without the user entering the suggested livestock and cost information. However, with some additional effort you will be able to view the economic impacts of potential destocking rates, estimated net revenues after feeding through a drought period, etc.

All your information can be edited by you at any time.

FRAMS Manual Overview

The following is the suggested protocol for initially setting up your FRAMS site information.

Step 1. Login
Access the site at http://cnrit.tamu.edu/frams Click the "Login" tab. Use the user name and password issued to you to login the system.

Step 2. "Establish rain gauge"
Your first task is to list the rain gauges on the property. For each gauge you will enter location and plant community information. Once a gauge is entered, the server will take about 15 to 20 minutes to process the weather information for that site. Suggestion: Complete the "Establish or update herd" section while you wait.

Step 3. "Establish or update herd"
While rain gauge weather information is processing, you can enter your herd structure. Herd structure describes the make up of your entire cattle herd that would be typical of a normal year, assuming no herd expansion. Once you have entered the herd structure, check to see if the weather is loaded. Then...

Step 4. "Results by Plant Communities - Execute Runs"
This tutorial shows you when the rain gauge weather is loaded and how to generate forage deviation results. While you need only to click a few buttons, the server needs 30 to 45 minutes to execute the PHYGRW runs. Suggestion: Move on to "Typical costs per year".

Step 5. "Typical costs per year"
In order to assess economic risk, the system needs to establish your marginal costs for a normal year.

Step 6. "Enter fecal sample"
To capture the impacts of forage quality on animal performance and to help estimate feed costs, FRAMS incorporates the NIRS/NUBAL program. If you collect and submit a cattle fecal sample to the Grazingland Animal Nutrition Lab at Texas A&M University each month, you will have timely animal performance available whenever you access FRAMS for drought monitoring. This information will help you estimate some of the "Additional costs during drought".

Step 7. "Additional costs during drought"
Here you enter estimates of additional feed, grass lease expenses (per head per day) that you might incur during a drought.

Step 8. "Enter or change current/projected market conditions"
In order to generate reports concerning the economics of keeping and feeding animals and of destocking animals, FRAMS asks for you to submit market information. Helpful tools are provided within the webpage.

Step 9. "Overall Outlook for Ranch"
By the completion of step 8, the "Results for Plant Communities" should be ready to view the property's status. Here you can evaluate whether you are above normal or approaching a serious drought event.

Step 10 "Keep and Feed" by enterprise
If the Overall outlook for the ranch indicates that you should consider drought mediation options, the "Keep and Feed" report will detail the economics of keeping the cow/calf or stocker herd intact.

Step 11 "Destock Option" by enterprise
The "Destock Option" report will detail the economics of partial or total destocking the herd.

Step 12 "Enter Precipitation Data"
Keep your FRAMS projections updated by entering your site's actual rainfall. With each rain event, you can record amount of precipitation in an easy to use monthly calendar format.
Establish Rain Gauge

Enter Gauge Properties

Instructions:
1. Type in the name of the new rain gauge.
2. Enter the Longitude and Latitude found for the gauge in decimal format. (Longitude is always negative.)
3. If the gauge represents a fourth of the ranch, type in 25. Do not use a % sign. If a gauge added after the ranch was initially set up, adjust the % of property for the original gauges so that they total 100, no more, no less.
4. The Plant Communities Present is a list compiled during the forage survey visit describing the whole property. You must select which of these are represented on the area covered by this gauge. In this example, two of the communities make up the rain gauge area.
5. Now, for each community, type in the corresponding percent of the rain gauge’s land area. What you enter should total 100.
6. Click the “Enter Data” button. It will take you back to the main user menu.
7. To add more gauges, click on the “Establish Rain Gauge” option again and complete steps 1 through 6.
Establish Rain Gauge, continued...

Before you continue on to the section "Establish or Update Herd", let's double check the following:

1. All rain gauges have been established for the ranch.
2. Add up the "% of property" for all your rain gauges. Total should be exactly 100. If not, go to "Make changes to rain gauges" to correct.

If all your rain gauges have been entered and sum of their "percent of property" is 100, then you can proceed to "Establish or Update Herd".

Make Changes to Rain Gauges

You will need to make changes to the properties of old rain gauge listings if you add a new rain gauge or plant new grasses in the area represented by a rain gauge.

This section illustrates the changes you may make to rain gauge properties. Whether you add a new gauge or alter the properties of existing gauges, you must proceed to the "Results by Plant Community - Execute Runs" link in your User Menu in order to update and view the impact your changes had on the status of the property. A separate section of the manual addresses executing PHYGROW runs and viewing your status report.

Let's continue with "Make changes to rain gauges".

FRAMS User Menu:

Enter Ranch or Market Information
Enter recall sample
"NEW" Enter precipitation data by month
Typical costs per year
Additional costs during drought
Enter or change current projected market conditions

Make a Decision
Keep and Feed Option - Cow/Calf
Restock Cattle - Cow/Calf

Examples of when you need to modify or delete a rain gauge.

Add a new rain gauge to the property.
- Always edit the % of property that applies to other existing gauges so that they total no more than 100%.
- Sometimes, the plant communities and/or the % of land area cover by the plant community may change as well.

Plant other grasses
- As long as the grasses planted are available as part of the property's list of plant communities (as identified in the forage survey visit), you can select different communities and/or edit the % or land area for the community.

Plant a species(s) new to the ranch
- When introducing a new species/plant community to the ranch, contact a FRAMS administrator, krisw@cnrit.tamu.edu. Additional inputs and programming by the FRAMS administrators will be needed to generate accurate status results.
Make Changes to Rain Gauges, continued...

To Delete a Gauge:
Identify the gauge you need to delete, then click the corresponding “Delete” button.

To Modify a Gauge:
Identify the gauge to be edited. Click the corresponding “Modify” button. The site will take you to the screen depicted below where you can edit the properties of the rain gauge.

To View Rainfall Data:
Click on the “Historic Rainfall” link to review the data you have entered for each gauge.

Example:
Let’s say that when you first set up your property in FRAMS, one rain gauge represented the entire grazing area. Recently you installed a new rain gauge that will monitor the rainfall for the northern quarter of the property.

The previous section of the Manual dealt with adding a rain gauge to FRAMS. This section goes over the edits needed on the original rain gauge listing.

Changes to the original rain gauge:
1. Edit % of property. The new gauge covers 25%. So the original Main gauge now only represents 75%.

2. The land taken away by a new gauge may alter the plant communities present and the % of land area distributed between each of the plant communities. (Note: The sum of “% of land area” for all the plant communities should always equal 100.) In this example all three communities are still present on the portion of the property still represented by the Main gauge. Edit the “% of land area” to correctly reflect the new distribution.

3. Click the “Modify Record” button when done. The site will return to the user menu.

You can not change the latitude and longitude of this existing gauge. If you have moved the location of the gauge or entered the latitude and longitude incorrectly, need to establish a new rain gauge and delete the old gauge that now longer correctly represents the location of the actual rain gauge.

Important:
For these changes to take effect, you must proceed to “Results by Plant Community – Execute Runs”. You will need to execute new runs for the plant communities of the rain gauges modified. (See “Execute Run” section of manual.)
Establish or Update Herd information

To complete the FRAMS Ranch Setup for your property you need to enter information describing the make-up of your herd in a typical or normal year. You may edit the herd structure later if necessary.

The purpose of having a herd structure is to allow the FRAMS destocking tool to calculate how many head to remove due to drought. For the destock tool to work, it needs to know how many head you would have at a given time of the year.

The objective of the Herd Structure table is to obtain information about your herd for a typical year. The arrangement of the table helps to account for normal fluctuation during the year, such as when calves are born and sold. The livestock weights entered are used to estimate revenues for the Make a Decision reports.

The Herd Structure table is split up by animal classes: Mature cows, 2 Year old replacement heifers, 1 Year old replacement heifers, Weaned heifers, Bulls, Stocker steers and Stocker heifers. Later on you will see that the stocker steers and heifers generate separate reports from animal classes considered as the cow/calf enterprise.

Data for each class is entered by month. A monthly approach helps FRAMS manage destocking calculations for those operations that have multiple or continuous calving seasons.

The screen shot below is a portion of the herd structure table.

---

Establish / Update Herd Structure

Click here to access the reproductive utility to help determine typical calf crops.

**Mature cow herd characteristics**

<table>
<thead>
<tr>
<th>Typical # of mature cows</th>
<th>100</th>
<th>Typical calf crop %</th>
<th>90</th>
</tr>
</thead>
<tbody>
<tr>
<td>Avg weaning weight</td>
<td>450</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>Jan</th>
<th>Feb</th>
<th>Mar</th>
<th>Apr</th>
<th>May</th>
<th>Jun</th>
<th>Jul</th>
<th>Aug</th>
<th>Sep</th>
<th>Oct</th>
<th>Nov</th>
<th>Dec</th>
</tr>
</thead>
<tbody>
<tr>
<td>% Calves born</td>
<td>50</td>
<td>40</td>
<td>10</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>% Calves weaned</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>100</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>% Cows culled</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>10</td>
<td>10</td>
<td>10</td>
<td>10</td>
</tr>
</tbody>
</table>

**Typical 2yr repl heifer herd characteristics**

<table>
<thead>
<tr>
<th>Avg weight 2yr repl</th>
<th>650</th>
</tr>
</thead>
<tbody>
<tr>
<td>Avg weaning weight</td>
<td>460</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>Jan</th>
<th>Feb</th>
<th>Mar</th>
<th>Apr</th>
<th>May</th>
<th>Jun</th>
<th>Jul</th>
<th>Aug</th>
<th>Sep</th>
<th>Oct</th>
<th>Nov</th>
<th>Dec</th>
</tr>
</thead>
<tbody>
<tr>
<td># Head by month</td>
<td>12</td>
<td>12</td>
<td>12</td>
<td>12</td>
<td>12</td>
<td>12</td>
<td>12</td>
<td>12</td>
<td>12</td>
<td>10</td>
<td>10</td>
<td>10</td>
</tr>
</tbody>
</table>
Repro Utility for cow/calf enterprise

The Cow-Calf Enterprise classes ask for your typical calf crop %. FRAMS provides a reproductive utility to assist you. Let’s review the Repro Utility tool so that it may help you complete the rest of the herd structure table.

Clicking the Reproductive Utility link opens a new screen. This utility is designed to estimate expected calf crop using the body condition score distribution of the herd. It also accounts for stage of reproduction: calving, breeding, and weaning.

Instructions:
1. For the portion of your herd that is currently calving, distribute the # of head in the fields of the body condition scores (BCS) that describe this group. In this example, 62 head that were currently calving had a BCS of 5 and another 10 cows were BCS 6.

2. For the portion of your herd that is currently breeding, distribute the # of head in the appropriate BCS fields that describe this group. In this example, of the entire herd, 20 head were currently in the breeding stage and had a 5 BCS while 40 had a 6 BCS.

3. You may also have some that are weaning calves. The same instructions in #1 and #2 apply.

4. Enter the expected mortality rate.

5. Click “Compute Expected Herd Calf Crop” button.

6. You can use the resulting “Expected overall herd calf crop %” in the Typical Calf Crop % field for the “Establish / Update Herd Structure” screen.

7. You may repeat this process for the other female classes as needed.

Results:
The utility calculates the expected calf crop % for the overall herd and for the subgroups. Note: The 90.16% in the weaning column applies to the next calf crop, not the calves that are currently being weaned.

Input the number of animals by BCS in each class to compute expected calf crop (%).

<table>
<thead>
<tr>
<th>Calving</th>
<th>Breeding</th>
<th>Weaning</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 - 5</td>
<td>1 - 5</td>
<td>1 - 5</td>
</tr>
<tr>
<td>2 - 6</td>
<td>2 - 6</td>
<td>2 - 6</td>
</tr>
<tr>
<td>3 - 7</td>
<td>3 - 7</td>
<td>3 - 7</td>
</tr>
<tr>
<td>4 - 8</td>
<td>4 - 8</td>
<td>4 - 8</td>
</tr>
<tr>
<td>5 - 9</td>
<td>5 - 9</td>
<td>5 - 9</td>
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<tr>
<td>6 - 10</td>
<td>6 - 10</td>
<td>6 - 10</td>
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<tr>
<td>7 - 11</td>
<td>7 - 11</td>
<td>7 - 11</td>
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<tr>
<td>8 - 12</td>
<td>8 - 12</td>
<td>8 - 12</td>
</tr>
<tr>
<td>9 - 13</td>
<td>9 - 13</td>
<td>9 - 13</td>
</tr>
</tbody>
</table>

Do NOT type units of measure such as “head” or “%”.

Expected mortality (%)

<table>
<thead>
<tr>
<th>Calving %</th>
<th>Breeding %</th>
<th>Weaning %</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>2</td>
<td>2</td>
</tr>
</tbody>
</table>

Expected overall herd calf crop %: 90.16
Establish or Update Herd information, cont.

The instructions for completing the herd structure table are broken down by animal class.

### Mature cow herd characteristics

<table>
<thead>
<tr>
<th>Typical # of mature cows</th>
<th>100</th>
</tr>
</thead>
<tbody>
<tr>
<td>Typical calf crop %</td>
<td>90</td>
</tr>
<tr>
<td>Avg weaning weight</td>
<td>400</td>
</tr>
<tr>
<td>Avg weight of cows</td>
<td>1000</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Jan</th>
<th>Feb</th>
<th>Mar</th>
<th>Apr</th>
<th>May</th>
<th>Jun</th>
<th>Jul</th>
<th>Aug</th>
<th>Sep</th>
<th>Oct</th>
<th>Nov</th>
<th>Dec</th>
</tr>
</thead>
<tbody>
<tr>
<td>% Calves born</td>
<td>50</td>
<td>40</td>
<td>10</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>% Calves weaned</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>% Cows culled</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>100</td>
</tr>
</tbody>
</table>

### Mature cow herd (3+ years old)

1. Enter number of head you normally stock from year to year, cows' average weight, your normal calf crop percentage and average weaning weight of calves from this herd group.

2. % Calves born: Let's say most of your herd calves in January (50%), some in February (40%) and a few in March (10%). You would not enter anything in the other months for % calves born. The total for all months would be 100.

3. % Calves weaned: If you weaned all calves from mature cow herd in October you would type 100 in October's field.

4. % Cows Culled: Let's say you typically sell cull cows in October. On average, you cull 10% of the mature cow herd. You would type 10 in the October field for % cows culled.

### Typical 2yr repl heifer herd characteristics

<table>
<thead>
<tr>
<th>Avg weight 2yr repl</th>
<th>850</th>
</tr>
</thead>
<tbody>
<tr>
<td>Avg weaning weight</td>
<td>460</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Jan</th>
<th>Feb</th>
<th>Mar</th>
<th>Apr</th>
<th>May</th>
<th>Jun</th>
<th>Jul</th>
<th>Aug</th>
<th>Sep</th>
<th>Oct</th>
<th>Nov</th>
<th>Dec</th>
</tr>
</thead>
<tbody>
<tr>
<td># Head by month</td>
<td>12</td>
<td>12</td>
<td>12</td>
<td>12</td>
<td>12</td>
<td>12</td>
<td>12</td>
<td>10</td>
<td>10</td>
<td>10</td>
<td>10</td>
</tr>
<tr>
<td># 2yr head culled</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>2</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>% Calves born</td>
<td>80</td>
<td>30</td>
<td>10</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>100</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>% Calves weaned</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

### 2yr Replacement Heifer herd (24-36 months old)

1. Enter the 2 yr heifers' average weight and the typical weaning weight for the calves produced from your first-calf heifers.

2. # Head by month: Record how many head of 2yr heifers you would typically have for each month whether they are replacement heifers you raised or bought.

3. # 2yr head culled: You only enter a number in these fields when animals would be culled or removed from the herd. For example, let's say you typically palpate this herd in September and on average cull 2 head. You would type 2 in the September field. Be sure and reduce the # of head to reflect culling.

4. % Calves born: Let's say most of this herd group calves in January (60%) with some in February (30%) and only a few in March (10%). You would not enter anything in the other months for % calves born. The total for all months would be 100.

5. % Calves weaned: If you weaned all calves from 2yr herd group in September you would type 100 in September's field.
Establish or Update Herd information, cont.

Note that the mature herd table is not set up with "# head by month". Since we need "normal" or "typical" cow numbers, the system assumes that the number of 2yr heifers is approximately the same as the number of cows culled. Thus, the cow count would be stable.

Examples:

Raised heifers: Yearling heifers move into the 2yr replacement heifer count on their month of birth. This number would roll over to each consecutive month until you would cull the herd. When they turn 3 years old, they would move out of this class and be considered part of the mature cow herd.

Purchased heifers: Instead of raising heifers to replace cull cows, you buy 2 yr old heifers. Type in the average number of head you typically buy in the month heifers are normally obtained. Follow through with that number until the month you would cull the 2 yr olds. Decrease number of head by what you would expect to cull (this number would go the # of head culled, 2 in September). Carry new head count over until heifers go into the mature cow herd. In this situation, not every month would have a number in it.

<table>
<thead>
<tr>
<th>Avg weight 1yr repl</th>
<th>850</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jan</td>
<td>Feb</td>
</tr>
<tr>
<td>14</td>
<td>14</td>
</tr>
<tr>
<td># Head by month</td>
<td></td>
</tr>
<tr>
<td># 1yr culled</td>
<td>0</td>
</tr>
</tbody>
</table>

1yr Replacement Heifer herd (12-23 months old)

1. Enter the heifers' average weight.
2. # Head by month: Record how many head of 1yr heifers you would typically have each month. This is to accommodate buying or raising replacement heifers.
3. # 1yr head culled: You enter a number only in the month(s) when animals would be culled or removed from the herd. For example, let’s say you typically palpate this herd in September and on average cull 2 head. You would type 2 in the September field and reduce the # head for September and following months to reflect culling.

Examples:

Raised heifers: Weaned heifers would move into the 1yr replacement heifer count the month they were born. This number would roll over to each consecutive month until you would cull herd. When they turn 2 years old, they would move out of this class and into the 2yr heifer herd group. At the same time the weaner heifers would move into the 1yr heifer group, so you should have numbers in the # Head by Month for all months.

Purchased heifers: Instead of raising heifers to replace cull cows, you buy 1 yr old heifers. Type in the average number of head you typically buy in the month heifers are normally obtained. Follow through with that number until the month you would cull the 1 yr olds. Decrease number of head by what you would expect to cull (this number would go the # of head culled, 2 in September). Carry new head count over until heifers go into the 2yr heifer group. In this situation, not every month would have a number in it.
Establish or Update Herd information, cont.

Typical weaned heifer herd - retained females should be reflected in # head

| Avg weight weaning heifers | 500 |

<table>
<thead>
<tr>
<th>Jan</th>
<th>Feb</th>
<th>Mar</th>
<th>Apr</th>
<th>May</th>
<th>Jun</th>
<th>Jul</th>
<th>Aug</th>
<th>Sep</th>
<th>Oct</th>
<th>Nov</th>
<th>Dec</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>14</td>
<td>14</td>
<td>14</td>
<td>14</td>
</tr>
</tbody>
</table>

| # Weaned head culled | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   |

Weaned Replacement Heifer herd (less than 12 months old)

1. Enter the heifers’ average weight.
2. # Head by month: Record how many head of 1yr heifers you would typically have each month.
3. # Weaned head culled: You enter a number only in the month(s) when animals would be culled or removed from the herd. If you do not cull until after the heifers are 1 year old, then you will have zeros for Jan-Dec.

Examples:

Raised heifers: Weaned heifers would move into the weaned replacement heifer count the month they were weaned from the cow herd. This number would roll over to each consecutive month until you would cull herd. When they turn 1 year old, they would move out of this class and into the 1yr heifer herd group.

Purchased heifers: Instead of raising heifers to replace cull cows, you buy weaned heifers. Type in the average number of head you typically buy in the month heifers are normally obtained. Follow through with the head count until they are 1 yr old.

Bull herd characteristics

| Avg weight bulls | 1700 |

<table>
<thead>
<tr>
<th>Jan</th>
<th>Feb</th>
<th>Mar</th>
<th>Apr</th>
<th>May</th>
<th>Jun</th>
<th>Jul</th>
<th>Aug</th>
<th>Sep</th>
<th>Oct</th>
<th>Nov</th>
<th>Dec</th>
</tr>
</thead>
<tbody>
<tr>
<td>5</td>
<td>5</td>
<td>5</td>
<td>5</td>
<td>5</td>
<td>5</td>
<td>4</td>
<td>4</td>
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<tr>
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<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

Bull herd

1. Enter the bulls average weight.
2. # Head by month: Enter number of head by month. This helps to accommodate for leasing bulls and/or the sale/buy-back of bulls.
3. # Bulls culled: You enter a number only in the month(s) when animals would be culled or removed from the herd.

Example:

The above example depicts an old bull sold in July after the breeding season and a new bull bought in September as the head count returns to 5.
### Establish or Update Herd information, cont.

#### Stocker steer characteristics

<table>
<thead>
<tr>
<th></th>
<th>Jan</th>
<th>Feb</th>
<th>Mar</th>
<th>Apr</th>
<th>May</th>
<th>Jun</th>
<th>Jul</th>
<th>Aug</th>
<th>Sep</th>
<th>Oct</th>
<th>Nov</th>
<th>Dec</th>
</tr>
</thead>
<tbody>
<tr>
<td># Head by month</td>
<td>50</td>
<td>50</td>
<td>50</td>
<td>50</td>
<td>50</td>
<td>50</td>
<td>50</td>
<td>0</td>
<td>50</td>
<td>50</td>
<td>50</td>
<td>50</td>
</tr>
<tr>
<td>Avg wt month</td>
<td>530</td>
<td>550</td>
<td>570</td>
<td>590</td>
<td>610</td>
<td>630</td>
<td>650</td>
<td>0</td>
<td>450</td>
<td>476</td>
<td>490</td>
<td>510</td>
</tr>
</tbody>
</table>

#### Stocker heifer characteristics

<table>
<thead>
<tr>
<th></th>
<th>Jan</th>
<th>Feb</th>
<th>Mar</th>
<th>Apr</th>
<th>May</th>
<th>Jun</th>
<th>Jul</th>
<th>Aug</th>
<th>Sep</th>
<th>Oct</th>
<th>Nov</th>
<th>Dec</th>
</tr>
</thead>
<tbody>
<tr>
<td># Head by month</td>
<td>50</td>
<td>50</td>
<td>50</td>
<td>50</td>
<td>50</td>
<td>50</td>
<td>50</td>
<td>0</td>
<td>50</td>
<td>50</td>
<td>50</td>
<td>50</td>
</tr>
<tr>
<td>Avg wt month</td>
<td>530</td>
<td>550</td>
<td>570</td>
<td>590</td>
<td>610</td>
<td>630</td>
<td>650</td>
<td>0</td>
<td>450</td>
<td>476</td>
<td>490</td>
<td>510</td>
</tr>
</tbody>
</table>

#### Stocker steers and Stocker heifers

1. **# Head by month**: Enter number of head by month.
2. **Avg. wt month**: Enter the average weight of stockers on hand for each month. If you have multiple weight categories, take an average or use the predominant weight class typical for each month.

Now, you have set up your herd structure. You will only need to access and change the data you have entered if you destock animals due to drought or make significant changes to your cattle operation.

### Results by Plant Communities—Execute Runs

The "Results by Plant Communities - Execute Runs" page has already been mentioned in "Establish rain gauge" and "Make changes to rain gauge" sections of the manual. It will also appear in the "Enter precipitation data" section later in this manual. A portion of this section of the manual refers to use of the "Results by Plant Communities - Execute Runs" page in the initial setup of your FRAMS site. This section also interprets rain gauge results.

You have been instructed in previous sections to monitor the weather status of rain gauges that you have added. Once you have completed the execute runs process, the "Overall Outlook for Ranch" will be ready to view.

Subsequent to setting up your farm/ranch in FRAMS, you would visit the "Results by Plant Communities - Execute Runs" page regularly to get the latest forage status and projections for each plant community and rain gauge.

During your first visit to the FRAMS site, you will need to manually start the process of updating the property’s forage production status. Expect this process to take about 30 to 45 minutes (depending on server CPU load), during which you can work in other areas of the FRAMS website. After your initial visit, the FRAMS server will automatically update the site’s status every 7 days. During future visits, you can tell the server to execute new PHYGROW runs for up to the day status reports.

---

**FRAMS User Menu:**

- **Ranch Setup**
- **Establish rain gauge**
- **Establish or update herd**
- **Make changes to rain gauges**
- **Enter Ranch or Market Information**
- **Enter fecal sample**
- **"NEW" Enter precipitation data by month**
- **Typical costs per year**
- **Addition costs during drought**
- **Enter or change current projected market conditions**
- **Make a Decision**
- **Keep and Feed Option - Cows/Calf**
- **Destock Option - Cows/Calf**
- **Keep and Feed Option - Stockers**
- **Destock Option - Stockers**

**View Results or Execute Runs**

- Results by Plant Communities - Execute Runs
- Overall Outlook for Ranch
Results by Plant Communities—Execute Runs, cont.

Overview:
During the Ranch Setup, you added a rain gauge which automatically prompted the server to pull data for the new gauge’s latitude and longitude.

The weather data takes some time to load during which you can enter other data such as herd information, costs, etc.

Once the weather is loaded, you can click the button "Run It". In 20-40 minutes your results will be ready to view.

Run rain gauge results

Instructions:

1. WEATHER: If you have just added a rain gauge, the weather column for the new gauge may say “Loading”. It may take a few minutes for this to complete. (When you clicked the “Enter Data” button on the “Establish Rain Gauge” page, you clued the server to start loading 50+ years of weather data for that location from NOAA.) If the weather is still “Loading”, we suggest you continue to enter data in other parts of the FRAMS system such as “Establishing herd”. If you have completed data entry, then right click your mouse and click on “Refresh”. This updates the screen with any changes to the weather or runs.

2. RUN IT: When the weather for the rain gauges reads "Loaded", continue by clicking the "Run It" button beside each plant community. This cues the server to run the PHYGROW model.

Progress of Weather:

1. "Loading" - Site is not ready for you to proceed. Suggest you enter herd data until...
2. "Loaded" - Site is ready for you to proceed with the run.

Progress of Run Status:

1. "Not Run Yet" - You need to click Run It button.
2. "Waiting" - Waiting for the server to start the run.
3. "Running" - The run is processing.
4. "Done" - Results are updated and ready to view.
Results by Plant Communities—Execute Runs, cont.

3. **RUN STATUS**: It may take 20 to 40 minutes for the run to completely execute. You can use this time to enter other data. Return to this page to monitor the run's progress in the Run Status column. Initially, the status will be "Waiting", then "Running". Your browser may require you to refresh in order to see updates to the run status.

<table>
<thead>
<tr>
<th>Run</th>
<th>Clean</th>
<th>Load Rain</th>
<th>Weather Status</th>
<th>Run Status</th>
<th>Plant Community</th>
<th>Last Run Date</th>
<th>On Last Date Run</th>
<th>Current</th>
<th>Projected</th>
</tr>
</thead>
<tbody>
<tr>
<td>Run It</td>
<td>Clean Up Run</td>
<td>Load My Rainfall</td>
<td>Loaded (6 loadNow)</td>
<td>Waiting</td>
<td>Mixed shortgrass, mesquite, upland sandy plain</td>
<td>7/12/2023</td>
<td>7/12/2023</td>
<td>7/12/2023</td>
<td>7/12/2023</td>
</tr>
</tbody>
</table>

4. When the Run Status changes to "Done", the results are available to view. Repeat these steps for each plant community in all your rain gauges.

<table>
<thead>
<tr>
<th>Run</th>
<th>Clean</th>
<th>Load Rain</th>
<th>Weather Status</th>
<th>Run Status</th>
<th>Plant Community</th>
<th>Last Run Date</th>
<th>On Last Date Run</th>
<th>Current</th>
<th>Projected</th>
</tr>
</thead>
<tbody>
<tr>
<td>Run It</td>
<td>Clean Up Run</td>
<td>Load My Rainfall</td>
<td>Loaded (6 loadNow)</td>
<td>Done</td>
<td>Mixed shortgrass, mesquite, upland sandy plain</td>
<td>7/12/2023</td>
<td>7/12/2023</td>
<td>7/12/2023</td>
<td>7/12/2023</td>
</tr>
</tbody>
</table>

**Understanding rain gauge results**

For your convenience, FRAMS summarizes the status for all the plant communities and rain gauges on the "Overall Outlook for Ranch" page of the website. The details of each plant community for each rain gauge is on this Results page.

**Plant Community**: The description of the plant groups found in the land area represented by the rain gauge.

Clicking on the plant community opens a screen with graphs, tables and links to additional data logs.

- **Last Run Date**: This is the last time this run was updated. The date will usually be 2-5 days prior to when the "Run It" button was last clicked (time delay on weather data).

- **On Last Date Run - Forage**: The pounds per acre of available forage. This estimate assumes no grazing. PHYGROW estimates available forage for each plant community on this date.

- **On Last Date Run - Average**: The pounds per acre of forage that should be available based on the 50+ year average of rainfall and weather.
Results by Plant Communities—Execute Runs, cont.

<table>
<thead>
<tr>
<th>Run Status</th>
<th>Plant Community</th>
<th>Last Run Date</th>
<th>Current Status</th>
<th>Projected 30-day</th>
<th>Projected 60-day</th>
<th>Projected 90-day</th>
</tr>
</thead>
<tbody>
<tr>
<td>Done</td>
<td>Mixed tallgrass, midgrass, upland deep sandy plain</td>
<td>2005-02-25</td>
<td>Normal</td>
<td>16.7%</td>
<td>20.5%</td>
<td>22.1%</td>
</tr>
<tr>
<td>Done</td>
<td>Mixed shortgrass, mesquite, upland sandy plain</td>
<td>2005-02-25</td>
<td>Above Normal</td>
<td>52.3%</td>
<td>66.7%</td>
<td>54%</td>
</tr>
<tr>
<td>Done</td>
<td>Mixed tallgrass, midgrass, upland sandy plain</td>
<td>2005-02-25</td>
<td>Normal</td>
<td>8.3%</td>
<td>24%</td>
<td>29.5%</td>
</tr>
</tbody>
</table>

Current—Status column: Above Normal, Normal, Watch, Warn, Alert, Emergency and Disaster are interpretations of current forage deviations.

- **Above Normal** status indicates that forage production is greater than 20% of the 50+ year average for this time of year.
- **Normal** status says that forage is 0 to 20% of average.
- **Watch** status is a flag that production for this plant community in this rain gauge location is 0 to -20% below normal.
- **Warn** status appears when production is from -20% to -40%.
- **Alert** status means that you only have about half the forage you normally have, between -40 and -60%.
- **Emergency** status indicates that forage deviation is from -60 to -80% below normal.
- **Disaster** status is just that. For the plant community, you have less than 20% of normal production.

Projected - Deviation: The percentage above or below the 50+ year average forage production for each plant community as estimated at 30, 60 and 90 days from now. The 30, 60 and 90 day projections establish a trend line that tells you if conditions are getting worse, staying the same or getting better. The longer the negative deviation, the more severe the impacts of not taking action are on the degradation of this plant community. The predicted forage deviation is within statistical sampling error out to 90 days and is the most likely response.
**Typical Costs per Year**

At this point your ranch is set up and you are ready to enter ranch and market information.

The “Typical costs per year” page asks for normal or typical operational costs. Typical costs MUST be entered to run the economic assessment of the “Keep & Feed” and “Destock” decision options. Do not base your cost inputs in this section on a year affected by drought. Your typical cost data is not needed to generate the forage status of your property. To reduce your time and effort, the FRAMS system only asks for marginal costs that are significantly impacted during drought periods. As a result the total costs and net revenues presented in separate sections of the FRAMS website exclude some actual costs. The main purpose is to be able to compare impacts of different drought management decisions.

Your data is entered as an annual cost per head. Feed, health, hay and grass lease costs are used to estimate net revenues for keeping and feeding your herd through a drought period or partially destocking your herd. This cost data is also used to evaluate the potential net revenue in future years.

**Gathering cost information**

The cost data is separated into enterprise categories. The Cow/Calf Enterprise column should include cost entries for both the cow and her calf. The Stocker Enterprise column should include only those costs for stocker steers and stocker heifers. Do not include costs for replacement heifers.

**What you will need:**

- Your previous years’ expense records or refer to Extension enterprise budgets.
- Estimate feed, health, hay and grass lease costs per head based on a normal year.
- Enterprise budgets are available online to help you estimate these costs. [http://waterhome.tamu.edu/care/](http://waterhome.tamu.edu/care/) Click on the “Budgets” link, then your region to access budget information.

**Description of cost inputs:**

- **Annual Feed costs/head** - Feed supplements, such as grain and liquid feed, and mineral. Do NOT include hay costs in this field.

**Calculation Tip:** For each enterprise add up the feed costs for a year and divide by total head (do not include nursing calves in head count).

- **Health & Vet costs/head** - Dewormer, vaccines, routine vet services.
**Typical Costs per Year, cont.**

Calculation Tip: For each enterprise, add up the above costs for the year (include the costs of treating the calves produced in the cow-calf enterprise) and divide by total head. (Do not include nursing calves in head count).

**Hay costs/head** - For hay that is produced on the ranch, you can choose to value the hay at market value or use the cost of producing the hay.

Calculation Tip: For each enterprise, take the total value of the hay fed for the year and divide by number of head.

**Grass lease costs/head** - Grass or pasture lease is another variable cost captured in the FRAMS system. It does not matter if only a portion of your grazing land is leased.

Calculation Tip: For each enterprise, total the grass lease costs for a year and divide by total head (do not include nursing calves in head count).

**Current interest rate** - You can use the interest rate you pay at the bank or the prime interest rate. The prime rate is posted on this helpful link. [www.bloomberg.com/markets/rates/index.html](http://www.bloomberg.com/markets/rates/index.html). Enter the same interest rate for each enterprise.

---

### Instructions:

1. Enter your yearly per head feed costs for a normal year for the Cow-Calf enterprise. Do not enter $ signs in any field.

2. Enter your yearly per head health and vet costs for a normal year for the Cow-Calf enterprise.

3. Enter your yearly per head hay costs for normal year for the Cow-Calf enterprise (even if you raise your own hay).

4. Enter your yearly per head grass lease costs for a normal year for the Cow-Calf enterprise.

5. Repeat steps 1-4 for the Stocker enterprise, if you have stocker steers and/or stocker heifers. If not, leave Stocker enterprise column blank.

6. Enter your interest rate in as a percent, example 5.75. Do NOT type in the % sign. To find the prime interest rate, visit this helpful link. [www.bloomberg.com/markets/rates/index.html](http://www.bloomberg.com/markets/rates/index.html).

7. Enter the same interest rate for the Stocker enterprise if applicable.

8. Click on the "Submit Data" button. It will take you back to the user main menu.
Enter fecal sample

FRAMS User Menu:
Enter Ranch or Market Information
Enter fecal sample
***NEW*** Enter precipitation data by month
Typical costs per year
Additional costs during drought
Enter or change current projected market conditions

Purpose of the fecal sample:
FRAMS uses the NIRS/NUTBAL system to incorporate forage quality and nutritional monitoring into its scope of capabilities. NIRS is used to analyze a manure sample from your cattle herd for the crude protein and energy values of the forage the cattle were consuming up to 72 hours prior to defecation. The NUTBAL model (built into FRAMS) uses these forage quality values to predict animal performance.

The reports generated from NIRS/NUTBAL component of FRAMS projects daily gains, body condition, etc. The reports can also tell you which of your feed options is the most cost effective and how much you should feed to reach your performance goal (in terms of desired daily gain).

The NIRS/NUTBAL reports help you estimate the daily additional costs of feeding animals during the drought as described in “Additional costs during drought”.

Sampling monthly can be part of your nutritional monitoring program. It also establishes a trend line of the forage quality over time.

If your cattle herd is managed in more than one group, you may collect more than one sample. Ex. The mature cows are grazing the Northwest Pasture and the yearling heifers are grazing the Southeast Pasture, you would collect one sample from the cows and one sample from the heifers.

When to sample:
Drought is not limited to just the summer months. Thus, the NIRS/NUTBAL system is available to FRAMS participants year around. Collect and send in a fecal sample once a month and you will always have relatively current forage quality data on hand when you update and view your FRAMS reports.

If you may choose not to sample regularly, it is recommended to start sampling upon detecting potential below normal conditions.

If current outlook is already showing a “Watch” status (0 to -20% forge deviation), collect a fecal sample now. When your overall outlook projections for the ranch starts to show a downward trend in the forage deviation, plan on collecting a fecal sample a week to 10 days prior to updating and reviewing your FRAMS reports next month.

Collecting and mailing the fecal sample:
The GAN Lab provides sample mailing kits upon request. Email.
Enter fecal sample, cont.

ganlab@cnrit.tamu.edu or call 979-845-5838. The sample kit includes a cardboard box, small Styrofoam cooler and freezer pack.

1. Freeze the ice pack overnight and label the box with your sender address and the GAN Lab address.

2. Gather together sealable plastic bags, tape, plastic gloves and/or disposable spoons, permanent marker, pen, and Styrofoam box.

3. Collect a "heaping tablespoon" from 5 to 10 fresh cow piles to get a composite sample. Thus, one fecal sample can represent a herd or pasture. Deposit manure in bag. Sample should be free of dirt, insects, grass and other debris. The sample kit will hold 1 to 3 samples and the ice pack.

4. Allow the sample to cool off before placing it in the cooler with the freezer pack. Label each plastic bag with a sample or pasture ID, and the GAN Lab number given to you when you entered the sample information online (discussed below. Use a permanent marker. Samples can be frozen and mailed at a later date if needed.

5. Place in the Styrofoam cooler the cooled fecal sample, ice substitute and packing paper if needed. Tape the cooler shut around the lid and place in the cardboard box. Seal the box with packing tape and use any mail service that guarantees two-day delivery, i.e. 2-day Priority Mail through the Postal Service.

If sending US Mail, use this address:
GAN Lab
2126 TAMU
College Station, TX 77843-2126

If shipping via another package service, use this physical address:
GAN Lab
Animal Industries Bldg., Rm 408B
Texas A&M University
College Station, TX 77843-2126

The NIRS/NUTBAL Options menu:

Forage Risk Assessment Management System

**Herd Contact Action Menu**

```
Main Menu
Contact Us

Enter sample sheet.
Select ranch or farm to view NUTBAL Pro results.
Select ranch or farm to view sample sheets.
```

"Enter Sample Sheet"
Click here to submit pasture and animal information for the sample(s) you are collecting to mail to the Grazingland Animal Nutrition Lab (GAN Lab). Another browser window will open. The site will give you the lab ID number for the sample. You write the lab# on the sample bag and mail it to the GAN Lab.

"Select ranch or farm to view NUTBAL Pro results."
The system will email you when the lab has your fecal sample results ready. You can then click here to see the forage quality analysis and view the animal performance and feed reports (based on the information you entered when you submitted the sample and the NIRS analysis).

"Select ranch or farm to view sample sheets."
Click here to review sample information, edit information and update reports. The system keeps record of all your samples.

Timeline for Fecal sample results:

Let’s say on Monday you collected the sample, entered the sample information online and mailed the sample to the GAN Lab at Texas A&M University. The sample should arrive at the lab on Wednesday. The NIRS analyses would be completed on Friday. You would be able to review your NUTBAL report online on Friday as soon as the lab results were entered.

Instructions for entering your sample information and reviewing your NUTBAL reports follows.
Enter fecal sample, cont.

**Step 1: Enter the sample sheet.**

Enter a New Case

Please enter the requested vegetation and feed information for the sample.

- **Ranch/Farm Name**: Click drop down list and select your ranch name.
- **Date (mm/dd/yyyy)**: Type in the date the sample was collected. Ex. 03/01/2005
- **Animal Kind (please select)**: Click drop down list and select “Cattle”.
- **Vegetation Type**: Describe vegetation species that cattle are grazing, Ex. Grama
- **Pasture Name**: Identify pasture where cattle are grazing.
- **Do you anticipate an intake restriction for the herd due to low forage availability?**
  - **Yes**
  - **No**
  If Overall Outlook indicates below normal forage deviation, click yes. Unless there is a significant below normal deviation, do not change.
- **Forage intake adjustment factor (HELP)**: Click drop down list and select appropriate choice.
- **Hay fed?**: Click list for choices.
  - **NONE**
  If feeding an additive such as Bovetec™, click drop down list for choices.
- **Kind of hay (ex: Bermuda)**: Describe vegetation species of hay fed, Ex. Alfalfa
- **Activity (please select)**: ADEQUATELY WATERED PASTURE, <= 15% SLOPE
- **Metabolic Modifier**: NONE
  If currently feeding concentrates, please indicate feeds and amounts below. If a deficiency exists in your herd, please select up to 6 concentrates or roughages below to indicate feeds you would be willing to feed to bring the herd up to a maintenance situation. Any feeds listed below will be included in a least cost feeding supplement recommendation. To see what the nutrient value of the forage alone is, enter your case with no feed initially and then edit the case information once the results have been entered for the diet quality by the Granlab. You can edit this information by selecting the view sample sheets option from the menu you received after logging into the system.

<table>
<thead>
<tr>
<th>Feed Name</th>
<th>CP</th>
<th>TDN</th>
<th>Amt Fed</th>
<th>Perc Waste</th>
<th>$ per ton</th>
<th>Upper Limit</th>
<th>Lower Limit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Feed 1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Feed 2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Feed 3</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Feed 4</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Feed 5</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Instructions for feed selection if feeding now:**

1. Click drop down list to select a common feed that is close to what you are feeding. Do NOT choose a hay.
2. Click the Feed Info button beside the feed name field. The page will reappear with CP and TDN values.
3. Edit the CP and TDN if needed to match the brand name product you are feeding.
4. Type in the amount you are feeding, percentage wasted, the price per ton of feed.
5. If the feed has a maximum limit that can be fed, enter it in the “Upper Limit” field.
6. Repeat steps 1-5 if feeding additional feeds.
Enter fecal sample, cont.

Instructions for feed selection if drought:

1. You may choose up to 5 feeds from which the NIRS/NUTBAL system can evaluate the most cost effective feed. You may select both concentrates & hays.

2. Click drop down list to select a common feed that is close to what you have available to feed.

3. Click the Feed Info button beside the feed name field. The page will reappear with CP and TDN values.

4. Edit CP and TDN if needed to match brand name feed.

5. Leave "Amt Fed" blank. Estimate percentage of feed cattle may waste. Enter the price per ton of feed.

6. If the feed has a maximum limit that can be fed, enter it in the "Upper Limit" field.

7. Repeat steps 1-6 if evaluating more than one feed.

Instructions for feed selection if drought:

1. You may choose up to 5 feeds from which the NIRS/NUTBAL system can evaluate the most cost effective feed. You may select both concentrates & hays.

2. Click drop down list to select a common feed that is close to what you have available to feed.

3. Click the Feed Info button beside the feed name field. The page will reappear with CP and TDN values.

4. Edit CP and TDN if needed to match brand name feed.

5. Leave "Amt Fed" blank. Estimate percentage of feed cattle may waste. Enter the price per ton of feed.

6. If the feed has a maximum limit that can be fed, enter it in the "Upper Limit" field.

7. Repeat steps 1-6 if evaluating more than one feed.

Instructions:

1. Once you have entered the pasture and feed information for your sample, click the "Submit Pasture Level Inputs" button.

2. The site will then upload your data. Error traps have been programmed to catch common mistakes. The error message would appear in the area above the ranch name or to the right of the data field in question.

3. Correct the error and click Submit again.

4. For security purposes, the system will log you out if the connection has been idle for a period of time.

5. Once the Submit button is clicked, the site brings up a new page that announces your sample's lab number and asks for animal information. If the animal info is not entered, none of the animal performance reports and feed reports can be generated.
**Enter fecal sample, cont.**

You now have your GAN Lab number, but you are not through yet. You need to enter animal information. Complete the table below as if you were using ONE ANIMAL to represent the majority of the cattle from which this sample was taken. This is called a Profile. You can have several profiles for 1 fecal sample. For example, if stocker steers and heifers are in the same herd, you would collect 1 fecal sample but go through the following process of adding profiles twice (one steer profile and one heifer profile). Another example would be a herd of cows where some had calves and the rest were still pregnant.

---

**Your sample number is 1537. Place this number on the ziploc bag you mail to the lab.**

Enter the information below for each group of animals in your herd having the similar physiological characteristics. Be sure to add each profile using the button at the bottom of the form. After you have added each of your profiles and you have a blank form, click on the button labeled "I Am Finished Adding Profiles" at the bottom of the form. The profile will not be added unless you click on the "Add Profile Entered Above" button for each set of information.

---

<table>
<thead>
<tr>
<th>Ranch Name</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Sample Date</td>
<td>01/01/2005</td>
</tr>
<tr>
<td>Profile Name</td>
<td>Mature cow, 3 mo calf</td>
</tr>
<tr>
<td>Breedtype</td>
<td>ANGUS</td>
</tr>
<tr>
<td>Frame Index</td>
<td></td>
</tr>
<tr>
<td>Peak Milk Yield (lbs.)</td>
<td></td>
</tr>
<tr>
<td>Percent Dairy Breedtype</td>
<td></td>
</tr>
<tr>
<td>Percent Dual Purpose Breedtype</td>
<td></td>
</tr>
<tr>
<td>Percent British/Continental Breedtype</td>
<td></td>
</tr>
</tbody>
</table>

---

**Instructions:**

1. Type in a descriptive profile name. Tip: Include a combination of class, stage of production, month collected, pasture ID, etc.
2. Click the dropdown list and select a default breed description that is similar.
3. Click the "Get Breed Info" button. This populates the next 5 fields with breed average data. You can edit these fields if needed to describe your cattle.

---

**Breed information retrieved.**

<table>
<thead>
<tr>
<th>Ranch Name</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Sample Date</td>
<td>01/01/2005</td>
</tr>
<tr>
<td>Profile Name</td>
<td>Mature cow, 3 mo calf</td>
</tr>
<tr>
<td>Breedtype</td>
<td>ANGUS</td>
</tr>
<tr>
<td>Frame Index</td>
<td>4.0</td>
</tr>
<tr>
<td>Peak Milk Yield (lbs.)</td>
<td>17.638976</td>
</tr>
<tr>
<td>Percent Dairy Breedtype</td>
<td></td>
</tr>
<tr>
<td>Percent Dual Purpose Breedtype</td>
<td></td>
</tr>
<tr>
<td>Percent British/Continental Breedtype</td>
<td></td>
</tr>
<tr>
<td>Percent Bos Indicus</td>
<td>0.0</td>
</tr>
</tbody>
</table>

You may edit frame, milk, and percentages to match your animal.
Enter fecal sample, cont.

Breed information retrieved.

Ranch Name
Sample Date 01/01/2005
Profile Name Mature cow: 3 mo calf
Breedtype GetBreed info ANGUS
Frame Index
Peak Milk Yield (lbs.)
Percent Dairy Breedtype
Percent Dual Purpose Breedtype
Percent British/Continental Breedtype
Percent Bos Indicus
Animal Class (please select) Click dropdown list and select appropriate class.
Average age of group (months)
Number of Head
Days Pregnant
Days Lactating
Internal Parasite Load
External Parasite Load
Current Body Weight (lbs.) Get BCS
Current Body Condition Score Get Weight
Metabolic Modifier Click dropdown & select If animal is implanted with a growth implant.
Desired Daily Gain (lbs.)

Weight, BCS and Frame relationship

This relationship is used by the NUTBAL model to evaluate animal performance. It is important that this relation is correctly reflected in the profile. DO NOT enter both the weight and body condition score. Choose the characteristic you have the most skill at judging and follow the instructions for that entry below to obtain BCS, weight and frame entries that better describe your animals.

Instructions for weight:
1. Enter weight for the profile.
2. Click the "Get BCS" button and the estimated BCS will appear in the Current Body Condition field.
3. Do you think this BCS represents this profile?
   Yes...
4. Continue to the next page for Desired Daily Gain instructions.
   No...
4. If BCS seems too high, increase the Frame Index. If BCS seems too low, decrease Frame Index.
5. Click the "Get BCS" button to recalculate the BCS. Repeat "NO" steps 4 and 5 until you accept the BCS number.
6. Continue to Desired Daily Gain.

Instructions for BCS:
1. Follow steps 1-3, but switch the weight and BCS terms.
   Yes, weight represents profile...
2. Enter # of head this profile represents.
3. Enter estimated days pregnant.
4. Enter days lactating, a.k.a. age of calf in days.
5. Click "Get Weight" button. Repeat the above step until you agree with the calculated weight.
6. Continue to Desired Daily Gain instructions.
Enter fecal sample, cont.

Instructions for Desired Daily Gain:

1. If the objective is to maintain current weight, type in 0.

2. If you have a gain goal, leave the desired daily gain at 0 when sample is entered. Once NIRS results have been processed and you have reviewed the Profile performance report with 0 gain goal, you can edit the profile to include a gain goal, update, then review the Feed report.

Instructions to complete the Profile:

1. Click “Add Profile Entered Above” button. This profile’s information will be sent to the server. If the error traps detect a common error in what you entered, what you typed will remain on the screen. Red messages will indicate what you need to correct. Otherwise, a blank screen will appear.

2. If you wish to enter another profile to represent a subgroup of this herd, you would enter the new information for the second profile screen and click “Add Profile” again.

3. After adding all the profiles for the sample, click “I am finished Adding Profiles.”

You have completed entering your fecal sample sheet. Label the fecal sample with the sample number displayed on the screen. Ship to the Grazinglands Animal Nutrition Lab. Click the “Return to Options Menu” button to proceed with other portions of FRAMS.

Allow time for the Lab to receive and process the sample (about 3-4 days). You will receive an email notification that the lab results are complete. At that time you can continue with the remainder of this section of the FRAMS manual that reviews accessing the NIRS/NUTBAL results.

Your sample number is 1537.

You may print this page and include it in your sample box or write the number and the name of your ranch on the sample bag in permanent ink.

Please mail your sample to:
Grazinglands Animal Nutrition Lab
Texas A&M University - RLEM
409E Animal Industries Building
2126 TAMU
College Station, TX 77843-2126
Enter fecal sample, cont.

**Step 2: View NIRS/NUTBAL results.**

NIRS/NUTBAL Options:

- Select ranch or farm to view NUTBAL Pro results.
- Select ranch or farm to view sample sheets.

**Instructions:**
1. Click "Select" to view NUTBAL Pro results.
2. Click on your ranch name to proceed to a table listing all your samples with results.

Click on a sample number to view the NIRS results for the selected sample. Click on a profile name to view the NUTBAL report for the sample and profile selected. Click on Feed Report on a sample row to view the least cost feed solution if applicable.

<table>
<thead>
<tr>
<th>Sample Date</th>
<th>NIRS Results for Sample #</th>
<th>Ranch Name</th>
<th>Profile</th>
<th>Feeding Solution</th>
</tr>
</thead>
<tbody>
<tr>
<td>3/16/2005</td>
<td>1514</td>
<td>Heifers</td>
<td></td>
<td>Feed Report</td>
</tr>
</tbody>
</table>

Click on Lab # to view NIRS results.

Click on Profile name to view animal performance report.

Click on Feed Report to view feed solution. The report will only be generated if:
- You have selected feeds on the sample sheet.
- Animal is losing weight or
- Animal is not meeting gain goal.

**Sample #:** 1514
**Date Collected:** 3/16/2005
**Date Received:** Wed, 23 Mar 2005
**CP:** 15.16
**DOM:** 65.8
**FN:** 2.1
**FP:** 0.48

Service provided by: Grazingland Animal Nutrition Lab, TAMU

Additional help for understanding the NUTBAL reports is available online and also in the Rancher Information Packet mailout.
Additional Costs During Drought

In order to generate "Keep and Feed Option" reports, you must complete the "Additional costs during drought" portion of the FRAMS website. It is designed to help you account for the additional costs incurred during a drought period and also allows you to estimate the impact of the drought on calving rates and cull cow percentages which impact your estimated net revenue.

Additional costs are defined as the amount of increased expense that may result from keeping a animal during a drought. The categories listed in FRAMS include Feed, Grass lease, and Other which is a catch all for vet, meds, labor, etc. Additional costs, entered as $ per head per day, are assigned by animal class so that the variance between the difference mature cows, heifers, etc., may be captured. These costs will ONLY be reflected in the FRAMS reports if there is a forage shortage or negative deviation from long term normal forage supply.

You may choose to have these costs "on file" even if you are not currently in a drought. You might approximate additional costs due to drought based upon past drought periods. This is an option because FRAMS asks for costs per head per day. However, you may want to reevaluate these costs entries with each new drought period.

Projected calving and culling percentages are included on the Additional Costs table. While these figures are not costs, they will impact your estimated net revenue.

Additional Costs During Drought

**Enter Additional Cost Data**

Use this screen to determine the daily costs associated with keeping a head through a drought period. These costs are ADDITIONAL COSTS above and beyond those incurred during a normal or typical year. These costs will only be added into your total costs on your reports if there is a forage shortage or negative deviation from long term normal forage supply.

All costs based on **cost per head per day**

Click here to access the reproductive utility to help determine calving and culling percents.
Additional Costs During Drought, cont.

Enter Additional Cost Data

Use this screen to determine the daily costs associated with keeping a head through a drought period. These costs are ADDITIONAL COSTS above and beyond those incurred during a normal or typical year. These costs will only be added into your total costs on your reports if there is a forage shortage or negative deviation from long term normal forage supply.

All costs based on cost per head per day

Click here to access the reproductive utility to help determine calving and culling percents.

<table>
<thead>
<tr>
<th></th>
<th>Additional feed cost</th>
<th>Additional other cost</th>
<th>Additional grass lease cost</th>
<th>Projected calving %</th>
<th>Projected culling %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cows</td>
<td>0.25</td>
<td>0.05</td>
<td>0</td>
<td>83.2</td>
<td>16.8</td>
</tr>
<tr>
<td>Replacement heifers - 2 yr:</td>
<td>0.30</td>
<td>0.05</td>
<td>0</td>
<td>83.2</td>
<td>16.8</td>
</tr>
<tr>
<td>Replacement heifers - 1 yr:</td>
<td>0.35</td>
<td>0.05</td>
<td>0</td>
<td>83.2</td>
<td>16.8</td>
</tr>
<tr>
<td>Weaned replacement heifers:</td>
<td>0.35</td>
<td>0.05</td>
<td>0</td>
<td>83.2</td>
<td>16.8</td>
</tr>
<tr>
<td>Bulls</td>
<td>0.25</td>
<td>0.05</td>
<td>0</td>
<td>83.2</td>
<td>16.8</td>
</tr>
<tr>
<td>Stocker heifers:</td>
<td>0.35</td>
<td>0.05</td>
<td>0</td>
<td>83.2</td>
<td>16.8</td>
</tr>
<tr>
<td>Stocker steers:</td>
<td>0.35</td>
<td>0.05</td>
<td>0</td>
<td>83.2</td>
<td>16.8</td>
</tr>
</tbody>
</table>

Cost descriptions:

Feed Cost: If you are normally feeding this time of year and have to feed more due to drought, only include the cost of the additional feed. (See “Enter fecal sample” option of user menu for assistance.)

Other Cost: This column may include additional labor, storage of feed, etc. to handle extra feeding.

Grass Lease Cost: If you normally lease grass but have to lease more due to drought, only include the cost of the additional lease.

Projected calving %: As it applies to the next production year. Drought often results in decreased calving rates due to reduced body condition at breeding. If you are going to feed at a level that maintains average body condition, you would type in the same percentage as in your herd structure. If you choose to feed for lower than average body condition, you can use the Reproductive Utility to reevaluate calving percentage.

Projected culling %: Next season’s culling rate may increase if calving rates decrease due to current drought.

A link to the Reproductive Utility is available in this page to help you assess the impacts of drought on your calving and culling percentages. This tool was discussed on page 7.

Instructions:
1. Once you have entered in applicable costs and percentages, click the “Submit Data” button.
2. You will return to the FRAMS User Menu.
3. Proceed to the next section.
Enter or Change Current/Projected Market Conditions

Current and future livestock market values are crucial pieces of information needed for FRAMS to evaluate the economic impacts of coping with drought. The market data entered on this page will be used to generate reports that help you assess the risks of keeping and feeding your herd versus destocking.

The site asks for current market value by animal class. It also asks for you to enter the Feeder Steer Futures Market price for the month that you sell your calf crop. This figure is used internally to estimate potential market values for the next production year. All projected market values are based on historical data.

You should update this page as soon as you detect a potential negative trend in your Ranch's Overall Outlook so that your "Keep and Feed" and "Destocking" option reports are up to date.

Enter Market Conditions

Use this screen to determine current and future market value for each animal class. If you do not have animals in a category, you may leave it blank. Current market value is used for this years revenue. Projected market values are used to determine buy-back costs if you destock. You can use the links below to help you determine these prices.

- Feeder and Replacement Cattle Auctions
- Feeder Cattle Futures
- Price Projection Tool

All prices should be entered on **cwt basis** - except for **cow/calf pairs**.

| Enter 7-8 cwt feeder steer price (futures market) for the month you sell your calf crop: |
| Current Market Value |
|---|---|
| Cows: |  |
| Cow/calf pairs (per pair): |  |
| Replacement heifers - 2 yr: |  |
| Replacement heifers - 1 yr: |  |
| Weaned replacement heifers: |  |
| Bulls: |  |
| Stocker heifers: |  |
| Stocker steers: |  |

Submit Date
Enter or Change Current/Projected Market Conditions, cont.

YOUR OPTIONS:

FRAMS lets you select the market values to use for the animal classes you stock.

You can assign current market values based on your own knowledge or experience.

You can also access sale prices from regional auctions, internet and video sales by clicking on the “Cattle Auctions” link.

A link to the Price Projection Tool designed for the FRAMS program is also available for estimating current market values.

Instructions obtaining 7-8 cwt feeder steer price:

1. Click on the "futures market" link. This opens the Chicago Mercantile Exchange page for feeder cattle futures prices.

2. Find the SETT price for the month in which you normally sell calves. SETT is the code for closing price. (See screen shot below for example.)

3. Type this price in 7-8 cwt feeder steer price field. This price will be used to internally project future market value for each animal class.

---

Delayed Futures and Options Quotes
Agricultural Commodity  Equity Index  Environmental
Foreign Exchange  Interest Rate  TRACS

Back to Agricultural Commodity Price Quotes

PIT-TRADED FUTURES

<table>
<thead>
<tr>
<th>Month &amp; Year</th>
<th>STRIKE</th>
<th>OPEN</th>
<th>HIGH</th>
<th>LOW</th>
<th>LAST</th>
<th>SETT</th>
<th>FIT &amp; VOL</th>
<th>SETT VOL</th>
<th>INT</th>
</tr>
</thead>
<tbody>
<tr>
<td>105.500</td>
<td>105.500</td>
<td>105.500</td>
<td>105.150</td>
<td>105.150</td>
<td>+125</td>
<td>1452</td>
<td>104.925</td>
<td>568</td>
<td>4974</td>
</tr>
<tr>
<td>105.150</td>
<td>105.150</td>
<td>104.925</td>
<td>104.925</td>
<td>104.925</td>
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<td>1053</td>
<td>103.275</td>
<td>1057</td>
<td>12563</td>
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<td>104.925</td>
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<td>103.275</td>
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<td>105.800</td>
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<td>105.800</td>
<td>+1650</td>
<td>72</td>
<td>103.275</td>
<td>30</td>
<td>991</td>
</tr>
<tr>
<td>105.000</td>
<td>105.000</td>
<td>105.000</td>
<td>105.000</td>
<td>105.000</td>
<td>+1325</td>
<td>72</td>
<td>103.275</td>
<td>30</td>
<td>991</td>
</tr>
<tr>
<td>105.000</td>
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<td>105.000</td>
<td>+1325</td>
<td>72</td>
<td>103.275</td>
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<td>991</td>
</tr>
<tr>
<td>100.600</td>
<td>99.750</td>
<td>100.600</td>
<td>100.600</td>
<td>100.600</td>
<td>+1000</td>
<td>18</td>
<td>99.600</td>
<td>127</td>
<td>827</td>
</tr>
</tbody>
</table>

---

Disclaimer: The data provided is for informational purposes only and should not be considered as financial advice. Always consult with a professional advisor for financial decisions.
Enter or Change Current/Projected Market Conditions, cont.

**Accessing Cattle Auctions**

1. Click on the "Feeder and Replacement Cattle Auctions" link.

2. This opens the "Livestock Cattle Reports" page of the USDA Agriculture Marketing Service web page.

3. Click on "Feeder and Replacement Cattle Auctions" link.

4. Click on your state.

5. A list of auctions for that state appears. Select one close to you or that follows your local market.

6. Review auction report to complete current market value fields for animal classes in your cattle herd. Example on page 30.
## Accessing Cattle Auctions

<table>
<thead>
<tr>
<th>Cattle and Calves: 580</th>
<th>Week Ago: 747</th>
<th>Year Ago: 762</th>
</tr>
</thead>
</table>

Compared to last week: Feeder steers and feeder heifers 3.00-5.00 higher. Slaughter bulls 4.00-6.00 higher. Slaughter cows 2.00 higher. Trade active and demand very good on all classes. Bulk supply Medium and Large 1-2 300-600 lb feeder steers and heifers. Feeder cattle accounted for 60 percent and slaughter cows and bulls 20 percent of the run. In the feeder supply, steers made up 56 percent of the run; heifers 44 percent; steers and heifers over 600 lbs totaled 10 percent.

### Steers:
- Medium and Large 1: 300–400 lbs 144.00–156.00, few 156.00-171.00; 400–500 lbs 144.00–152.00; 500–600 lbs 127.00–135.00; 600–700 lbs 115.00–122.00, few 130.00;
- Medium and Large 2: 300–400 lbs 148.00–158.00; 400–500 lbs 140.00-149.00; 500–600 lbs 120.00–127.00; few 600–700 lbs 109.00–115.00,
- Medium and Large 3: few 300–400 lbs 134.00–145.00; 400–500 lbs 135.00–140.00; 500–600 lbs 115.00–120.00.

### Heifers:
- Medium and Large 1: 300–400 lbs 144.00–152.00, few 156.00; 400–500 lbs 136.00–144.00; 500–600 lbs 125.00–130.00, few 138.00; 600–700 lbs 105.00–110.00,
- Medium and Large 2: 300–400 lbs 134.00–144.00; 400–500 lbs 120.00–126.00; 500–600 lbs 115.00–120.00; few 600–700 lbs 95.00–100.00,
- Medium and Large 3: few 300–400 lbs 125.00–133.00; few 400–500 lbs 122.00–130.00; few 500–600 lbs 105.00–115.00.

### Slaughter Cows:
- Cows: take avg. price/hd, divide by avg. weight and multiply by 100. Ex. $792/825*100=$96 per cwt.

### Cows
- 75-85 percent 1300-1650 lbs 56.00-60.00
- 80-85 percent 1000-1500 lbs 50.00-60.00
- 85-90 percent 900-1000 lbs 55.00-65.00

### Replacement Heifers:
- Yield Grade 1-2: 1370-1910 lbs 66.00-71.50
- High Dressing: 1700-2050 lbs 74.00-79.50
- Low Dressing: 1275-1785 lbs 55.00-65.50

### Replacement Cows:
- Medium and Large 2: young to middle aged 650-1000 lb cows 2-6 months bred 655.00-750.00 per head; middle age to aged 600-1140 lb cows 5-7 months bred 650.00-710.00 per head.

### COW-CALF PAIRS:
- Cow/Calf Pairs: Medium and Large 1-2: young to middle aged 800-1155 lb cows w/90-250 lb calves 900.00-1110.00 per pair; aged 800-1100 lb cows w/75-200 lb calves 800.00-910.00 per pair.

Source: Texas Dept of Ag Market News-USDA Market News, Amarillo, TX
Enter or Change Current/Projected Market Conditions, cont.

Using the Price Projection Tool

1. Find current price of 7-8 cwt steers. You may use either the Cattle Auctions link or the Futures link.
2. Click on the "Price Projection Tool" link.
3. Type in the price of 7-8 hundred weight steers per hundred weight.
4. Click the "Calculate Prices" button.

Submit Current Market Values

All prices should be entered on cwt basis - except for cow/calf pairs.

Enter 7-8 cwt feeder steer price (futures market) for the month you sell your calf crop: 105.625

<table>
<thead>
<tr>
<th>Current Market Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cows: 62.24</td>
</tr>
<tr>
<td>Cow/calf pairs (per pair): 1043.57</td>
</tr>
<tr>
<td>Replacement heifers - 2 yr: 99.6</td>
</tr>
<tr>
<td>Replacement heifers - 1 yr: 101.84</td>
</tr>
<tr>
<td>Weaned replacement heifers: 106.47</td>
</tr>
<tr>
<td>Bulls: 76.0</td>
</tr>
<tr>
<td>Stocker heifers: 106.47</td>
</tr>
<tr>
<td>Stocker steers: 116.01</td>
</tr>
</tbody>
</table>

Instructions:

1. Enter values in price per hundred weight except for the cow/calf pair price.
2. Click the "Submit Data" button.

You are now ready to proceed to the "Make a Decision" portion of the FRAMS site.
The Overall Outlook for Ranch report shows the property’s current forage status and the projected status 30, 60 and 90 days from now.

This page will update each time you execute runs on the “Results by Plant Communities—Execute Runs” page.

If the ranch’s status is below normal or the 30, 60, 90 day forecasts are below normal, you may choose to use the FRAMS website to evaluate your destocking and/or feeding options and the corresponding economic assessments in the “Make a Decision” section of your FRAMS User Menu.

The forage deviations depicted on the Overall Ranch Summary is a weighted average of each of the rain gauges established for the property.

Overall Current Forage Deviation:
The percentage above or below the 50+ year average forage production for the ranch as of right now.

- The greater the negative deviation, the more severe the impacts of inaction are on grassland degradation and on herd productivity.
- Drought mediation is recommended at the Watch and Warning stages to minimize negative effects on herd productivity and limit grassland deterioration.

Overall 30, 60 and 90 day Forage Deviations:
The percentage above or below the 50+ year average forage production for the ranch projected in 30 day intervals.

- These forecasts reflect the impact current conditions have on future forage production. Weather data from the last 52 years is also used to evaluate how the forage may respond in the next 30 days, the next 60 days, etc.
- The 30, 60 and 90 day projections establish a trend line that tells you if the drought is getting worse, staying the same or getting better.
- The predicted forage deviation is within statistical sampling error out to 90 days and is the most likely response.
Overall Outlook for Ranch, cont.

Application of Results

<table>
<thead>
<tr>
<th>Above Normal</th>
<th>&gt;20% deviation</th>
<th>Normal grazing practices continue but monitor steep 30, 60 and 90 day trends as depicted above.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Normal</td>
<td>20% to 0% deviation</td>
<td>Normal grazing practices continue but monitor steep 30, 60 and 90 day trends.</td>
</tr>
<tr>
<td>Watch</td>
<td>0% to -20% deviation</td>
<td>Forage conditions are beginning to fall below long-term normal conditions. Difficult for you to perceive. Early application of supplements, vaccinations, improved parasite control and careful matching of animal physiological status with quality of forage should be pursued. Early sales may be considered.</td>
</tr>
<tr>
<td>Warn</td>
<td>-20% to -40% deviation</td>
<td>Conditions have deteriorated significantly. Potential action should be seriously considered such as early adjustments to animal density (movement, sales) or substantial supplemental feeding.</td>
</tr>
<tr>
<td>Alert</td>
<td>-40% to -60% deviation</td>
<td>Conditions require significant actions to reduce risk of loss of livestock. Water stability comes in question.</td>
</tr>
<tr>
<td>Emergency</td>
<td>-60% to -80% deviation</td>
<td>Forage supplies are becoming scarce. Emergency measures for forage/feed access should be carefully not to result in rangeland deterioration. Loss of perennial grasses begins and accelerates over time resulting in loss of future forage production.</td>
</tr>
<tr>
<td>Disaster</td>
<td>-80% to -100% deviation</td>
<td>The forage is essentially depleted, the remainder of herd should have been moved or destocked well prior to this stage. Retaining animals in areas with this condition results in rangeland deterioration and loss of future forage.</td>
</tr>
</tbody>
</table>

Follow Through:

1. Execute runs and revisit the Overall Outlook for Ranch each month.
2. When the current or 30 to 90 day forage deviations fall below normal, be sure to complete the “Ranch Setup” and “Enter Ranch or Market Information” sections of the User Menu.
3. Review the reports from the “Keep an Feed” and “Destock” options.
The "Make a Decision" section of FRAMS offers 4 reports to facilitate drought mediation. The cow/calf enterprise and stocker enterprise each have a report estimating the net revenue or loss of retaining the herd intact and feeding through a drought period. The manual will discuss in a separate section the destocking reports for the two enterprises.

Please keep in mind that the net revenue or loss figures generated by FRAMS are only estimates for comparing outcomes of feeding to potential outcomes of destocking. FRAMS forgoes using a complete enterprise budget. Instead it asks for pertinent marginal costs so to limit the complexity of the data you were asked to enter and to minimize the time you spend keeping your budgets updated online.

Before you continue:

- Established your herd
- Entered typical costs data
- Entered or updated additional costs during drought data
- Entered or updated market conditions
- Updated plant community runs.

Instructions:

1. Review the current and projected forage deviations for the ranch's overall outlook.
2. Select the number of days you are considering to feed. This number also acts as the number of days in the drought period. The maximum option is 90 because the forage deviation projections are limited to 90 days. In this example, you may want to feed for 90 days. If projected deviations had improved, you could have opted to feed only 30 or 60 days.
3. Click the "Generate Report" Button. A separate Report screen opens (which you can print, then close).
**Keep and Feed Option, cont.**

**Review the Keep and Feed Report**

<table>
<thead>
<tr>
<th>Class</th>
<th>Estimated Annual Revenue</th>
<th>Additional Costs</th>
<th>Estimated Net Revenue or Loss</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cows</td>
<td>$50318</td>
<td>$2700</td>
<td>$25033</td>
</tr>
<tr>
<td>Repl Heifers 2yr</td>
<td>$6556</td>
<td>$378</td>
<td>$3468</td>
</tr>
<tr>
<td>Repl Heifers 1yr</td>
<td>$1303</td>
<td>$504</td>
<td>$(-2363)</td>
</tr>
<tr>
<td>Weaned Heifers</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
</tr>
<tr>
<td>Bulls</td>
<td>$1220</td>
<td>$135</td>
<td>$(-44)</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>$59397</strong></td>
<td><strong>$3717</strong></td>
<td><strong>$26094</strong></td>
</tr>
</tbody>
</table>

Projected revenue next season using current prices: $29811

**Annual Normal Costs of Herd**

For your convenience, the report shows an annual normal cost calculated using the typical annual costs you entered for feed, health/vet, hay, and grass lease per head multiplied by number of head.

The rest of the report table shows estimations of this production year’s annual revenue, additional drought costs and net revenue or loss by animal class. Having such estimates for each class in your herd allows you the opportunity to make feed or destock decisions on a herd subgroup level. Depicted here is a cow/calf enterprise report. A stocker enterprise report would only list stocker heifers and stocker steers.

**Estimated Annual Revenue**

The Estimated Annual Revenue is calculated for each class based on the data supplied in your herd structure table and the market condition inputs. From these sources FRAMS projects what was sold and for how much by each animal class. For example, the cow herd generates income from the sell of calves and culled cows. The market data you entered on a previous screen assigns a value to the sold animals. Thus, FRAMS is able to estimate annual revenue for this season.

**Additional Costs**

Additional Costs are calculated for each class using your additional costs during drought inputs and the number of days you selected to feed.

**Estimated Net Revenue or Loss**

The Estimated Net Revenue or Loss is calculated for the current year by subtracting the typical costs for each class category and the Additional Costs due to drought from the estimated annual revenue. For those animal classes that do not generate much revenue (Example: bulls), expect to see a loss.

**Total Estimated Net Revenue or Loss**

The Total Estimated Net Revenue or Loss for the entire enterprise ($26,094 in this example) is for the current production season.

**Projected revenue next season**

Next production season’s Total Estimated Net Revenue or Loss for the enterprise is referred to as “Projected revenue next season using current prices” ($29,811 in this example). This figure is calculated using your current herd structure and the market conditions inputs currently entered. No additional costs for drought are assumed for next year.

**Using the Report**

This information was designed to be compared to the estimated net revenue or loss in the Destocking report for the same enterprise. Such a comparison would indicate which mediation decision, feeding or destocking, may have the better bottom line for this year and next year.

The net revenue estimates should NOT be considered as total profit.
The FRAMS "Make a Decision" section offers destocking reports to facilitate drought mediation. The cow/calf enterprise and stocker enterprise each have a report estimating the net revenue or loss for this year and next year as a result of destocking this year. A portion of the destocking report for a cow/calf enterprise reviews the buying back of different classes of reproductive cattle. The manual discusses the Keep and Feed reports for the two enterprises in a separate section. Please keep in mind that the net revenue or loss figures generated by FRAMS are only estimates for comparing outcomes of destocking to potential outcomes of feeding. FRAMS did not ask you to enter a complete enterprise budget so to limit the complexity of the data you were asked to enter and to minimize the amount of time you spent keeping your budgets updated online.

Before you continue:

- Make sure that you have,
  - Established your herd
  - Entered typical costs data
  - Entered or updated additional costs during drought data
  - Entered or updated market conditions
  - Updated plant community runs.

Instructions for entering AUEs to destock:

1. Review the current and projected forage deviations for the ranch’s overall outlook.
2. Click the Destocking Matrix link. The Matrix will help you decide how many AUEs (animal unit equivalency) you want to remove.
3. After reviewing the Destocking Matrix, return to this screen and enter the number of AUEs you chose to destock.
Destock Option, cont.

Destocking Matrix

Instructions:

1. Decide how much of a forage deficit risk you are willing to take. Refer to the Overall Outlook for Ranch section on page 33 for helpful guidelines or consult a grasslands specialist.

2. Review the AUEs at 0, 30, 60 and 90 days that you would need to remove in order to incur no more than the acceptable forage deficit at that time.
   - If 15% deficit is OK, today you may not choose to destock at this time but should prepare for a possible destocking in 60 or 90 days if conditions do not improve between now and then.
   - If no level of forage deficit is acceptable, you would destock 15 AUEs now. (This is the level of destocking used in this example.)

3. Take note of the number of AUEs that you would consider destocking and return to the original screen.

4. Type this number in the screen as shown on the previous page.
   - Remember that you can come back and rerun destocking reports using different AUE numbers.
Destock Option, cont.

Let's review the components of the Destocking screen before entering more data. The screen shot on this page is from the cow/calf enterprise. The stocker table at the bottom is much more simplified.

Classes
Itemized for the appropriate enterprise. Regarding nursing calves—The sex ratio is assumed to be 50:50.

Current Inventory
Inventory is pulled from the herd information you entered and can be edited. It is assumed 100% of predicted calf crop is present.

# Head to Destock
This column is to be entered by you.

Remaining herd
Automatically calculates remaining animals in that class as you enter # head to destock.

Destocked AUEs
Automatically translates the # of head destocked for each class to total AUEs.

AUE Destock Balance
Automatically calculates the number of AUEs you want to destock (Ex. 5.2) minus what you have entered to be destocked.

Instructions:
1. If you were to sell some of your calves this month, what would be their average weight? Type in this estimate.
2. Enter in the prices per hundred weight for the heifers and steers for which you would expect to sell calves.
3. Choose which class or classes from which you might destock.
4. In the "# of Head to Destock" column, enter the number of head you want to destock in the field for the appropriate class.
   • In this example, calves were sold early to relieve the grassland.
5. Continue to enter head to destock until the AUE destock balance is close to 0.
6. Click "Generate Report" button to view report.
7. You may come back to this screen and change your destocking choices (steps 3-6) to compare different destocking options.

Entries in the Destocking Table do not change your Herd Structure.
Destock Option, cont.

Reviewing the Destocking Report

The Destocking Report shows estimations of this production year’s revenue and potential sales receipts from destocking by animal class as well as total. Included in the cow/calf report are net present values (NPV) of net revenue and break evens for buying back reproductive females.

Having such estimates by class allows you to make feed or destock decisions on a herd subgroup level. Depicted here is a cow/calf enterprise report. A stocker enterprise report would only list stocker heifers and stocker steers and not include a NPV or Summary report.

# to Destock
Recaps the animals you chose to destock.

Total Sell Value
The projected sales of what you destocked is based on the current market values you entered.

Current Year Revenue
An estimate of this year’s regular cattle sales including animals that were destocked. In this example calves that were sold early.

Net Revenue this year
Total estimated revenue from this drought year minus estimated costs associated with animals destocked.

Net Revenue next year
Estimated net revenue for the next year based on the herd structure remaining after destocking. It is assumed that you did not restock or retain heifers and no drought.

Cow/Calf Enterprise Only
In contrast to a stocker enterprise, often you are faced with having to destock productive females that would have remained in the herd for several years. These females must be replaced in order to maintain a desired revenue.

The Destocking Option report for the cow/calf enterprise helps you make that buyback decision by calculating the short term NPV of net revenue for each female class. FRAMS also summarizes 3 additional factors to consider when choosing what females to restock; years to breakeven, NPV for the remaining life of the female, and the benefit to cost ratio.

Destocking Report

<table>
<thead>
<tr>
<th>Animals Selected for Destocking</th>
<th># to Destock</th>
<th>Total Sell Value</th>
<th>Current Year Revenue</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cows</td>
<td>0</td>
<td>$0</td>
<td>$0</td>
</tr>
<tr>
<td>Mature cow heifer calves</td>
<td>14</td>
<td>$6404</td>
<td>$16814</td>
</tr>
<tr>
<td>Mature cow steer calves</td>
<td>13</td>
<td>$6663</td>
<td>$19461</td>
</tr>
<tr>
<td>Repl Heifers 2yr</td>
<td>0</td>
<td>$0</td>
<td>$0</td>
</tr>
<tr>
<td>Mature cow heifer calves</td>
<td>5</td>
<td>$2267</td>
<td>$0</td>
</tr>
<tr>
<td>Mature cow steer calves</td>
<td>5</td>
<td>$2563</td>
<td>$0</td>
</tr>
<tr>
<td>Repl Heifers 1yr</td>
<td>0</td>
<td>$0</td>
<td>$0</td>
</tr>
<tr>
<td>Weaned Heifers</td>
<td>0</td>
<td>$0</td>
<td>$0</td>
</tr>
<tr>
<td>Bulls</td>
<td>0</td>
<td>$0</td>
<td>$0</td>
</tr>
<tr>
<td>TOTAL</td>
<td></td>
<td>$17917</td>
<td>$36275</td>
</tr>
</tbody>
</table>

Net Revenue this year (removing costs): $24606
Net Revenue next year - no restocking (removing costs): $34756

Short term NPV of Net Revenue

<table>
<thead>
<tr>
<th>Class to buy back</th>
<th>Weaner heifer</th>
<th>1 yr replac heifer</th>
<th>2 yr replac heifer</th>
<th>Mature cow</th>
<th>Cow/Calf pair</th>
</tr>
</thead>
<tbody>
<tr>
<td>Net Revenue Yr 1</td>
<td>$-812.12</td>
<td>$-856.93</td>
<td>$-647.21</td>
<td>$-222.24</td>
<td>$-936</td>
</tr>
<tr>
<td>Net Revenue Yr 2</td>
<td>$-201.01</td>
<td>$294.86</td>
<td>$294.86</td>
<td>$310.90</td>
<td>$310.90</td>
</tr>
<tr>
<td>Net Revenue Yr 3</td>
<td>$273.26</td>
<td>$293.39</td>
<td>$293.39</td>
<td>$293.39</td>
<td>$293.39</td>
</tr>
<tr>
<td>Total</td>
<td>$-738.87</td>
<td>$-273.88</td>
<td>$-64.16</td>
<td>$382.14</td>
<td>$33.62</td>
</tr>
</tbody>
</table>

Economic Summary Report

<table>
<thead>
<tr>
<th>Discount interest rate</th>
<th>Weaner heifer</th>
<th>1 yr replac heifer</th>
<th>2 yr replac heifer</th>
<th>Mature cow</th>
<th>Cow/Calf pair</th>
</tr>
</thead>
<tbody>
<tr>
<td>6.00%</td>
<td>6.00%</td>
<td>6.00%</td>
<td>6.00%</td>
<td>6.00%</td>
<td>6.00%</td>
</tr>
<tr>
<td>Years to break even</td>
<td>6</td>
<td>4</td>
<td>4</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Total NPV for life of animal</td>
<td>$702.81</td>
<td>$961.98</td>
<td>$952.46</td>
<td>$920.04</td>
<td>$504.26</td>
</tr>
<tr>
<td>Benefit to cost ratio</td>
<td>1.5</td>
<td>1.81</td>
<td>1.53</td>
<td>1.68</td>
<td>1.33</td>
</tr>
</tbody>
</table>
Destock Option, cont.

These figures are on a per head basis and assume that the female does not miss a calf.

Overview of Short term NPV:
Compares the net present values for the estimated net revenues of buying back a weaner heifer, a 1-year-old heifer, a 2-year-old heifer, a mature cow, or a cow/calf pair over a three year period.

Net Revenue Year 1
Takes the revenue from each animal and subtracts the purchase price and normal costs of keeping that animal. Revenue and purchase price is based upon market condition data you have entered.

Net Revenue Years 2 and 3
Only subtracts normal costs from each years projected revenue. Revenue and costs are assumed to remain the same.

The Total
Shows you each animals estimated net revenue after 3 years.

Overview of Economic Summary Report:
Compares number of years to break even, total net present value for the life of the animal, and the benefit to cost ratio for each of the following classes; a weaner heifer, a 1-year-old heifer, a 2-year-old heifer, a mature cow, or a cow/calf pair.

Years to break even
Projects how many years it will take for the animal to pay for itself and its annual maintenance costs.

Total NPV for the life of the animal
Compares the total revenue each class may earn for you for the remainder of her useful life.

Benefit to cost ratio
Is the animal's total revenue divided by her total cost (purchase price + annual costs) for her remaining useful life. Ratio <1.0, she lost money. The greater the ratio, the more money the animal should make.

Enter Precipitation Data By Month

The purpose of keeping an online precipitation log is to enable FRAMS to generate status reports specific to your site's rainfall.

This section will instruct you regarding entering any historical rainfall records you have for your site and help you keep your FRAMS precipitation log up to date.

Submit precipitation data for your ranch regularly. Although this section is referred to as "Enter precipitation by month, we recommend that you document rain events as they occur so that the FRAMS projections are using up to date information. If you choose not to enter your own rainfall, FRAMS will default to NOAA's records.

Rainfall data is critical to the function of FRAMS. FRAMS was designed to use precipitation data collected onsite with NOAA weather data as a back up. Therefore, please follow these instructions carefully.

Understanding use of Precipitation Data

FRAMS downloads weather data including precipitation from NOAA daily. NOAA's precipitation data is used for current and future forage deviation projections in the absence of rain gauge entries. One of the problems with using NOAA weather data is that it documents trace amounts of rainfall that does not actually fall on the site but affect the cumulative rainfall totals over time. This in turn causes the PHYGROW model to over predict the amount of forage produced thus skewing the forage deviation results.

For this reason, documenting actual rainfall and keeping your entries up to date is very important. The entry screen is formatted by month to make this process quick and easy. However, it is recommended to enter precipitation as it occurs so that your FRAMS runs are always up to date.

Helpful tip:
You may follow the steps in this section to enter any historical rainfall you have for your ranch. If you do not have previous months' or years' data continue to Page 43.
Enter Precipitation Data By Month, cont...

**Select a gauge to bring up calendar for data entry.**

<table>
<thead>
<tr>
<th>Rain gauge:</th>
<th>West Mesa</th>
</tr>
</thead>
<tbody>
<tr>
<td>Year (four digits)</td>
<td>2006</td>
</tr>
<tr>
<td>Month</td>
<td>July</td>
</tr>
</tbody>
</table>

**Instructions:**

After clicking on the "Enter precipitation data by month" link, complete the screen shown above.

1. Select a rain gauge,
2. Enter a four digit year, example 2006.
3. Select a month.
4. Click the "Show Calendar" button after you have entered the data for steps 1-3.
5. The screen will then display a calendar for that month and year. (If you forget to enter a year, you will get an error. Click the button to go back to the previous screen and reenter data, completing steps 1-4.)
6. Enter rainfall amounts in inches for each day. Do not type "in" or "inches".
7. Select the "Submit Rainfall" button.

**TIPS**

- By default, a 0 will appear in each day’s field. You need only to modify fields for the days that you had precipitation.
- Moving your mouse across a day highlights the day you are working on for easier identification and typing.

**Month with no rain**

You should enter rainfall data for every month in a year - even if you did not receive any precipitation in a month. If you did not receive any rainfall within a particular month, once the zeros appear on the screen, your simply select the "Submit Rainfall" button. The calendar will overwrite the NOAA generated weather for every day in the month. You can not assume that NOAA recorded null values when it did not rain on your site.

**Enter daily rainfall in inches in the boxes in the calendar. Click the Submit Data button to send your rainfall to FRAMS.**

<table>
<thead>
<tr>
<th>Mon</th>
<th>Tue</th>
<th>Wed</th>
<th>Thu</th>
<th>Fri</th>
<th>Sat</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
</tr>
<tr>
<td>0.24</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>9</td>
<td>10</td>
<td>11</td>
<td>12</td>
<td>13</td>
<td>14</td>
</tr>
<tr>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>16</td>
<td>17</td>
<td>18</td>
<td>19</td>
<td>20</td>
<td>21</td>
</tr>
<tr>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>23</td>
<td>24</td>
<td>25</td>
<td>26</td>
<td>27</td>
<td>28</td>
</tr>
<tr>
<td>0</td>
<td>0.08</td>
<td>0</td>
<td>0.2</td>
<td>0.2</td>
<td>0</td>
</tr>
<tr>
<td>30</td>
<td>31</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>0</td>
<td>0.03</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Submit Rainfall
Enter Precipitation Data By Month, cont...

Entering Historical Rainfall data, cont...

Instructions (continued):

After clicking the Submit Rainfall button, you will receive a report of the rainfall data that was sent to the FRAMS database. (Below)

The following dates and rainfall amounts were submitted:

<table>
<thead>
<tr>
<th>Date</th>
<th>Rainfall</th>
</tr>
</thead>
<tbody>
<tr>
<td>2006-07-01</td>
<td>0</td>
</tr>
<tr>
<td>2006-07-02</td>
<td>0</td>
</tr>
<tr>
<td>2006-07-03</td>
<td>0.24</td>
</tr>
<tr>
<td>2006-07-04</td>
<td>0</td>
</tr>
<tr>
<td>2006-07-05</td>
<td>0</td>
</tr>
<tr>
<td>2006-07-06</td>
<td>0</td>
</tr>
<tr>
<td>2006-07-07</td>
<td>0</td>
</tr>
<tr>
<td>2006-07-08</td>
<td>0</td>
</tr>
<tr>
<td>2006-07-09</td>
<td>0</td>
</tr>
<tr>
<td>2006-07-10</td>
<td>0</td>
</tr>
<tr>
<td>2006-07-11</td>
<td>0</td>
</tr>
<tr>
<td>2006-07-12</td>
<td>0</td>
</tr>
<tr>
<td>2006-07-13</td>
<td>0</td>
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<td>2006-07-14</td>
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<td>2006-07-15</td>
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<td>2006-07-16</td>
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<tr>
<td>2006-07-20</td>
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</tr>
<tr>
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</tr>
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<td>2006-07-22</td>
<td>0</td>
</tr>
<tr>
<td>2006-07-23</td>
<td>0</td>
</tr>
<tr>
<td>2006-07-24</td>
<td>0</td>
</tr>
<tr>
<td>2006-07-25</td>
<td>0.08</td>
</tr>
<tr>
<td>2006-07-26</td>
<td>0</td>
</tr>
<tr>
<td>2006-07-27</td>
<td>0.2</td>
</tr>
<tr>
<td>2006-07-28</td>
<td>0</td>
</tr>
<tr>
<td>2006-07-29</td>
<td>0</td>
</tr>
<tr>
<td>2006-07-30</td>
<td>0</td>
</tr>
<tr>
<td>2006-07-31</td>
<td>0</td>
</tr>
</tbody>
</table>

10. When you are finished, click the "Return to Main Menu" link.

Once you have finished adding your data and returned to the main menu, click the "Results by Plant Communities - Execute runs" link.

You should see your results by rain gauge page like the one at the bottom of the page.

The results that is currently displayed on the screen does not reflect the rainfall you just entered.

In order for new rainfall amounts to take effect and for the deviations to change, you have to resubmit each plant community run.

11. Click the "Run It" button. You will receive a message that the run has been submitted to the server. Click the Back button on your browser to return to the run page.

12. Click "Run It" for each of your plant communities for every rain gauge.

The PHYGROW server is restarting your plant community prediction from 1999 to the present. This process ensures that any changes made to your weather data is being picked up by the model. When the Run is complete, you will see numbers in the columns again and the Run Status will be "Done". Each run will take between 10-20 minutes, depending on server load.

Once the process is complete, you may view the cumulative rainfall total on your plant community report.

Remember that the PHYGROW model uses centimeters, so there is a conversion factor between what was entered and what the models needs as a parameter. There may be a slight difference between any spreadsheet total that you have and what the total shows, but it will be less than 1/10 of an inch in most cases.

The "Overall Outlook for Ranch" page will update automatically after the runs are completed. (Run Status says "Done" for all gauges and plant communities.)
Questions and Answers

Q. Can I start using the FRAMS site with just this manual?

A. No. Producers selected to participate in this sponsored program must first have a PHYGROW forage survey conducted on their site before the FRAMS website can be made ready for their use.

Q. Do I have to keep up with my rainfall data?

A. It is recommended. However, the FRAMS system was designed to function using NOAA data in the event that onsite rainfall was unavailable.

Q. What if I forget my ID and password?

A. Contact Kris Banik via email, krisw@cnrit.tamu.edu, or phone, 979-845-3958.

Q. Can I send the Grazingland Animal Nutrition Lab samples from herds or ranches not enrolled in the FRAMS project?

A. Yes. However, there will be a service fee incurred for non-FRAMS samples. Please inform the lab that such samples are not apart of the FRAMS project.

Q. Can the Automated NIRS/NUTBAL Online System work with analysis other than a fecal sample?

A. No. The online system is an automated service provided by the Grazingland Animal Nutrition Lab constructed to specifically use their fecal sample analysis. However, the stand-alone version of the NUTBAL software accepts forage quality results from other sources and can be run by trained users to generate reports similar to the online system reports.

Q. Why does the FRAMS website automatically log out if I walk away from my computer for awhile?

A. This is a security feature to protect your information and the website.
A dynamic risk management decision tool for the ranching industry.

Contacts

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