

Blockhouse Ranch- Project Update

My first task in this project was to define the study area. After I created an ArcMap document and added a topographic base map layer, I began by obtaining a shapefile of the state of Texas as well as a shapefile of the counties of Texas. I will primarily be concerned with Mason County, but I will also be concerned with small portions of McCulloch and Menard counties. These counties border Mason County on the North and West sides respectively.



Figure 1: Upper and Lower Calf Creek Watersheds

Since the area I will be concerned with is only the area that drains to Calf Creek, I also obtained the Watershed Boundary Dataset Hydrologic Unit Code 12 (HUC 12) watersheds shapefile. Two subwatersheds will make up the area of this study: Upper Calf Creek and Lower Calf Creek. Figure 1 shows these two watersheds selected in ArcGIS. The HUC 12 identifying number and area of these watersheds is summarized in Table 1. The total study area is 43,604 acres.

Table 1: Calf Creek Watersheds

HUC 12 Name	HUC 12 Number	Area (acres)
Upper Calf Creek	120901090603	33,656
Lower Calf Creek	120901090604	9,948

Next, I added the NHD flowline shapefile, which does include both the San Saba River and its tributary Calf Creek which will be the focus of my study. This data will later help define the connectivity of the stream network draining into Calf Creek.

Another important part of this feasibility study was researching the legal restrictions related to creating a dam. Chapter 297 of Title 30 of the Texas Administrative Code is concerned with Substantive Water Rights. Part (b) of Rule 297.21, Domestic Livestock and Wildlife Permit Exemptions, of Subchapter C, Use Exempt from Permitting, states that “a person may construct on the person's own property a dam or reservoir with a normal storage of not more than 200 acre-feet of state water for domestic and livestock purposes without obtaining a permit.” The goal of this project will be to ensure that any potential reservoir created by a dam on Calf Creek does not exceed this limit.

Thus far, shapefiles have been obtained for the state of Texas; Mason, McCulloch, and Menard Counties; NHD flowlines; and HUC 12 Watershed Boundaries. Other data that must be obtained includes elevation data for the three counties within the two watersheds and rainfall data for the same area. The elevation data will be obtained from the National Elevation Dataset and the Rainfall Data will be obtained from the USGS Stream Gauge Network.