CHAPTER 3
CONSIDERATIONS FOR METADATA GATHERING

One factor that network managers will need to consider when reporting metadata is the amount of information that is made publicly available. Some networks make nearly all metadata openly available (e.g., National Ecological Observatory Network [NEON] monitoring sites), whereas other networks make only basic metadata information available. The restriction of metadata sharing may be done for many reasons, including the cost of maintaining data availability, privacy for the landowners, the prevention of vandalism by limiting site location information, etc.

When deciding which information to make public, networks should consider the purpose of their network and the need for certain metadata to be easily accessible, either to the public or for research purposes. For example, a network whose purpose is to improve agricultural water management by employing soil moisture sensors may have photos or soil property data from the soil profile in which the sensors are installed. These photos and data likely contain information that would aid producers in the correct interpretation of data from that site and should be made publicly available. On the other hand, perhaps information regarding the exact location of a monitoring site is not pertinent to the interpretation of the data from that site or should not be shared publicly. For example, if the site is installed on private property, less-precise geographic coordinates (i.e., latitude and longitude to only 1 or 2 decimal places) are likely acceptable for providing general location information about a site while minimizing the risk of trespassing and vandalism.

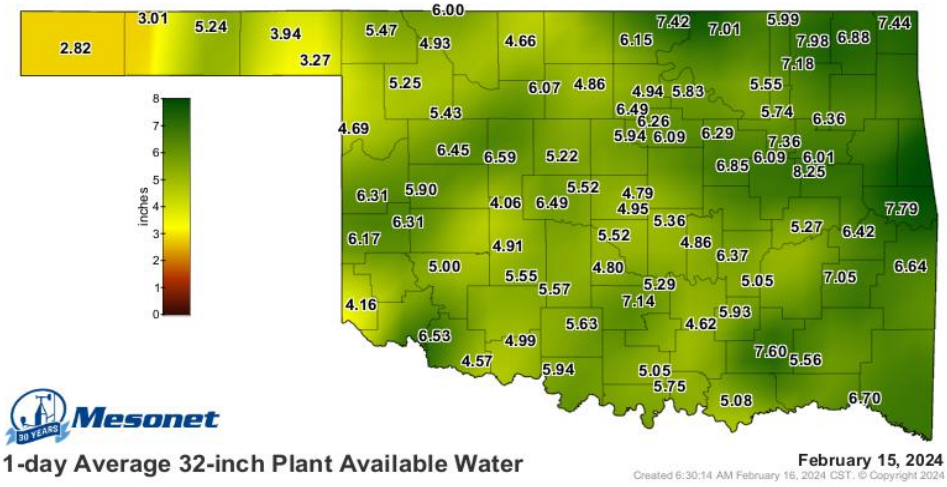

Figure 1. Map of plant available water (PAW) created using soil moisture data from the Oklahoma Mesonet. Image Credit: Oklahoma Mesonet.

The types of metadata described in this document have a wide variety of potential applications. For example:

- Site location information can be used to extract point data to support the evaluation of numerical models and remotely sensed products.
- Soil profile photos and measured soil properties can be used to interpret data and develop derived products such as the plant available water (PAW), which provides an estimate of the depth of water currently in the soil and available for plants to take up (Figure 1). The PAW variable has been used by many mesonets as a way of increasing the understanding and utility of soil moisture information by the public, but these derived values may only be estimated if site-specific soil property data are available.
- Photos of the monitoring site at the time of installation and in different seasons can provide context for interpreting both above-ground and below-ground variables.

Generally speaking, the more metadata a network is able to provide publicly, the more utility the data will have for both public and research uses, although it should be acknowledged that in some instances there are reasons to limit the amount of information shared publicly.