

APPENDIX F
WHAP Sampling Strategy

Overview of Wildlife Habitat Appraisal Procedure Sampling Survey

The goal of the Wildlife Habitat Appraisal Procedure (WHAP) survey was to assess habitat quality of a number of sites within the property boundary of Lakes Grapevine and Lewisville to serve as a baseline for future studies and management projects. Habitat quality was surveyed for the following general vegetative categories: Grassland (both native and introduced), Hardwood Forests (both bottomland and upland), and Savanna (forest/grassland mix).

With the consideration that Lakes Grapevine and Lewisville are both located within the Cross Timbers region of North Texas, the vegetation macro-groups are also considered to be the same for the whole project area. Therefore, survey samples on one lake will pertain to the other lake.

The sampling sites are considered to fall within one of two general size categories that will be termed “Large Management Areas” (LMA) and “Corridor Management Area” (CMA). LMAs are large, contiguous blocks of acreage, at a distance from private property (for example, flood prone areas in Bottom Hardwood Forest or Herbaceous Grassland). CMAs are strips of land, generally less than 250 ft. in width, between private property and lake shoreline. These are areas commonly impacted by private development.

Vegetation Macro-Groups (VMG) are broad classifications within the LMA and CMA:

Grassland (G) – Classic prairie type of former cropland in transition

Grassland/Woodland Mix (M) – Prairie – Shrubland – Woodland

Woodland (W) – Upland and Bottomland Hardwood

Within each VMG, habitat will be evaluated for a range of Disturbance, which can be related to habitat quality (see WHAP). For example, a Woodland LMA in a remote area of the upper reaches of Grapevine or Lewisville is most likely to have Low Disturbance whereas a narrow CMA that has been completely mowed most likely demonstrates High Disturbance.

Sampling should be conducted to establish baseline values for Low Disturbance, and thus, one would assume, high quality habitat. This should take place in both LMAs and CMAs, with emphasis on CMAs. It is suggested that 70% of all sampling be conducted in CMAs.

The sampling matrix looks like this:

	LMA W	LMA M	LMA G	CMA W	CMA M	CMA G
Low Dist.						
Mod. Dist.						
High Dist.						

It is possible that there are few LMAs that fall into the High and Mod Disturbance classes due to restricted accessibility. If they do exist, there should be a sample of each. Low Disturbance in both LMA and CMA may serve as baseline for high succession within WHAP.

As many samples as possible should be gathered within the CMAs.

There are 20 crew days available for this survey (2 crews for 10 days). It is assumed that at least one survey can be conducted per crew per day, but hopefully two per day is possible. If so, that will allow, with training time and travel, 30 – 40 samples. If a minimum of 6 samples are taken within LMAs (2 each in W, M and G, assuming Low Dist. areas), then a minimum of 24 samples can be taken in CMAs. If possible, it would be good to have 3 samples for each CMA VMG, requiring 27 samples total.

	LMA W	LMA M	LMA G	CMA W	CMA M	CMA G
Low Dist.	2	2	2	3	3	3
Mod. Dist.				3	3	3
High Dist.				3	3	3

Please Note: This is obviously not a randomized sampling technique. The purpose of this survey, given time and funding constraints, is to obtain a better understanding of the general health, as it pertains to wildlife habitat quality, of the three VMGs around the lakes. If we are able to document a range of habitat qualities within the VMGs, prescriptions for vegetative habitat improvement, in woodlands, mixed vegetation/savanna, and grasslands, may be employed by volunteers and adjoining property owners to raise those habitats to higher successional levels.

Sampling Locations

A total of 63 samples were taken around Lakes Grapevine and Lewisville, 35 at Grapevine and 28 at Lewisville. Sampling site location was recorded using handheld Garmin Etrex GPS units and recorded in UTM meters, WGS 84 datum (Figures 1 and 2).

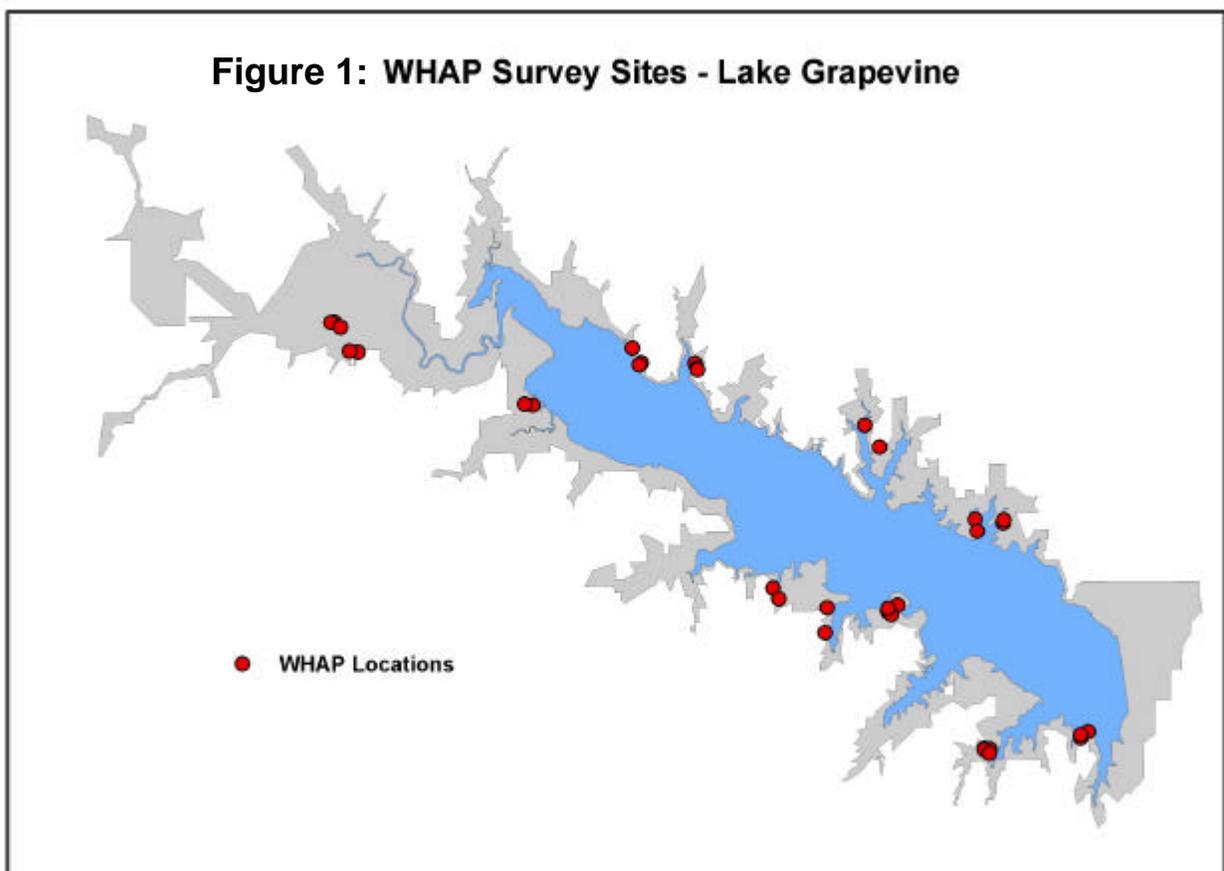
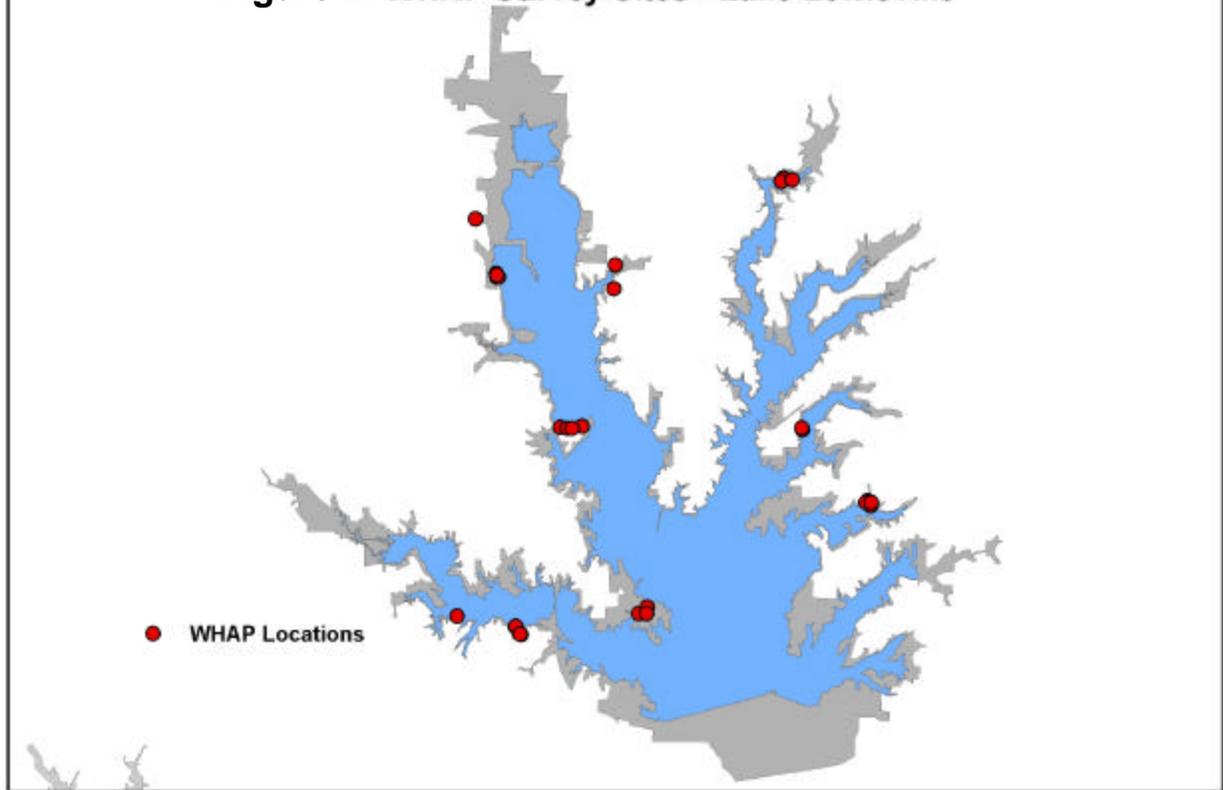


Figure 2: WHAP Survey Sites - Lake Lewisville



Sample location X,Y coordinates, location ID (based upon team A or B) and date were recorded for each site, as well as the actual information pertaining to vegetation sampling. Data sheets were collected at the end of each day, collated and data entered into a spreadsheet. Outputs for total plant species within each VMG and dominant species for each group were produced.

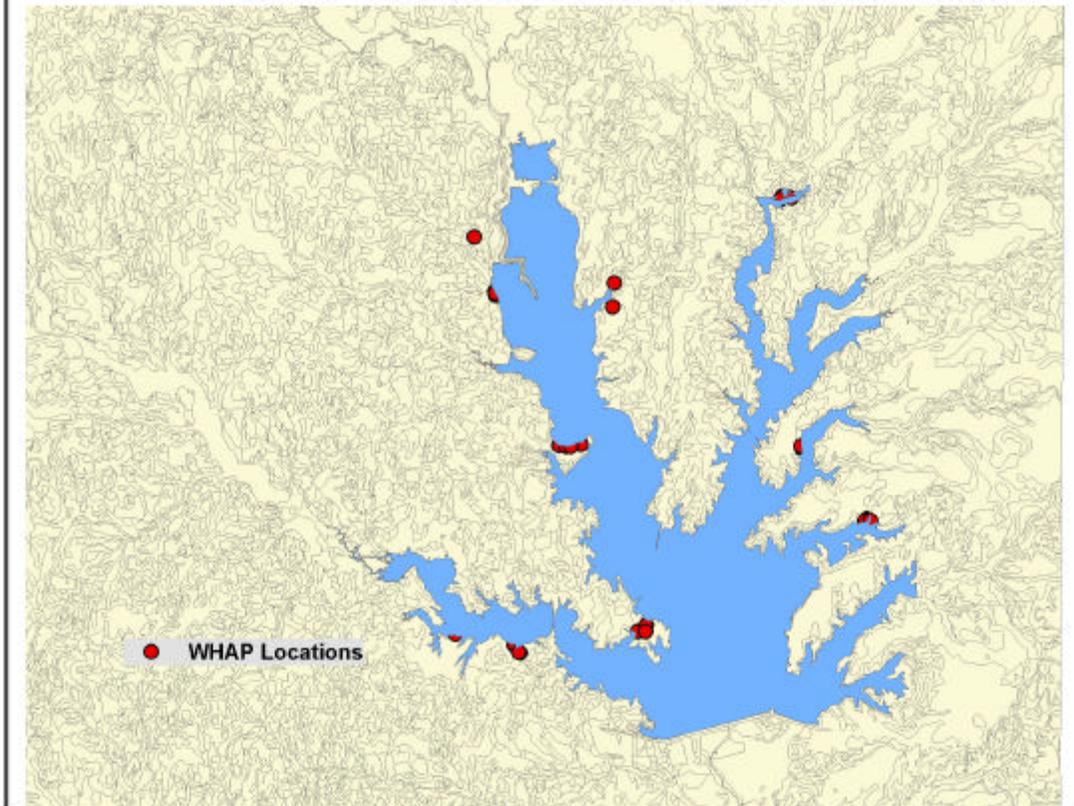
Soil Component

A component of the WHAP is the soil characteristics, such as flood frequency, soil depth and organic content associated with vegetation classes. In order to determine soil characteristics for the sampling sites, the GPSed points were overlaid on top of the National Resource and Conservation Service, Soil Conservation Service, digital soil series GIS files (Figure 3). Soil characteristics were determined for each sampling location and used in the WHAP assessment.

WHAP Output

The final WHAP values were calculated using criteria (Frye, 1995) and Habitat Quality Units were generated for the study area.

Figure 3: WHAP Survey Sites and Soil Series- Lake Lewisville



Bibliography

Frye, R. 1995. Wildlife Habitat Appraisal Procedure (WHAP). Texas Parks and Wildlife Department, Austin, TX.