

January 2021 Cooper Lake State Park – Do-It-Yourself (DIY) Orienteering Event
Course Setter Notes

Summary – 3 courses: Yellow, Brown, Red. Map scale is 1:7500 and map file sized for 8.5 x 11 letter paper printing. Clue sheets, and legend are on separate pages. There are 4 non-standard symbols to indicate the different types of streams, ditches, and gullies. The legend for these non-standard symbols is on the maps and the legend sheet. Due to recent rain, the trails are somewhat muddy; so trails are closed to horses (but orienteers can ignore the “trail closed” signs). Also, you should bring extra shoes (and probably socks & pants) to change into afterwards. Note that I wore soccer shoes with plastic cleats for better footing. (you will slide if you were smooth soled shoes.)

Background on Cooper Lake State Park and the terrain - Cooper Lake South Sulphur Unit is located in the borderland of the Blackland Prairies and the western edge of the Oak Forest and Prairies ecoregions of Texas. The land was settled by American pioneers starting in the 1850s and farming activity began to alter the natural landscape. Over time, many of the fields were converted to pasture. Small manmade ponds (or “tanks” in Texas lingo) were created to retain water. Berms (or “terraces” in Texas farming lingo – not to be confused with the Orienteering terrace feature) were created to stop erosion. The berms are evident today as low undulations (too small to map) that approximately parallel contours on many of the hillsides. Fence were installed to keep in or keep cattle out of pastures and fields. As fields were plowed, the fence rows often became low linear ridges that remain today even after the fences have fallen down and the fields have grown over and returned to forest. In many places, the berms and fence rows have influenced runoff patterns and created erosional features in unexpected places.

Cooper Lake was created in the mid-1990s and Cooper Lake State Park opened in the late 1990s. The houses were removed, but the fences were left and the fields were allowed to go back to nature. Over time, the fences have deteriorated leaving wire on the ground as well as a few wires up where the trees grew around them or where the posts may not have rotted yet. The ruined fences may often be just a wire or two that is a foot or so off the ground. The ruined fences can be very hard to see in the woods if you are traveling perpendicular to them, but may be followed if you find them.

Equestrian trails were created in the west end. As the equestrian trails were used, ruts were created which grow into gullies and new trails were created to replace the old trails. This leads to an intricate gully and watercourse system, including many watercourses that are not normally seen in nature – such as gullies that go down the crest of a spur where an old trail used to be.

Since the lake was created, the water level has varied. Most of the park lake shore is bordered by one to six foot earth banks associated with the shoreline when the lake is full. When the lake level drops, the gradually sloping lake bottom is exposed. As the time of this writing, the lake level is at a moderate level below the earth bank line and with ten to fifty meters of exposed lake bottom.

The large creeks that feed northward into the lake have carved deeply incised, steep-sided gullies. When the lake water level is high, the lake encroaches up the major feeding creeks into the deep gullies, so that the lake can extend deep into the park. In the most extreme case at Finley Creek, where the gully is up to two contour lines deep, the lake sometimes extends a kilometer southward (although it was not that high in the middle of Jan 2021). This causes the longer Red advanced course to be a “butterfly” course with a mandatory crossing control at the only current safe crossing of the deep, steep Finley Creek gully.

Although there are a variety of small stones and cobbles, there are no rocks large enough to be mapped as boulders.

There are no rock cliffs in the park. However, there are a large variety of erosional landforms, including high earth banks, watercourses, ditches, and gullies. Thus, we used the following non-standard mapping symbology:

The years of farming, ranching, and now horseback riding and hiking have formed an intricate system of watercourses. There are so many small ditches (up to one meter deep), that using the standard brown dotted map symbology was confusing and impossible to read in areas with dense ditches. Thus, we used the **blue dashed small stream symbology** to show a wide range of water courses that can be crossed at speed (for the indicated vegetation). These include shallow reentrants, small ditches, and deeper swales.

One to three meter gullies that are narrow are shown with the **standard brown gully symbol**. Depending upon vegetation, they are crossable or else you only have to go upstream or downstream a short way to cross.

Some of the deep or wider gullies are shown with earthbanks. Where they are most complex, they may be shown with contours or form-lines without hachures. Since there are no rock cliffs, we **use the black cliff symbol in a non-standard way to represent an unpassable earth banks** and the **regular brown earth bank for a passable earth bank**. The brown earth bank indicates a one to four meter tall earth bank that orienteers could traverse. Taller (two to eight meter) earth banks that are too steep to climb are shown using the black cliff symbol. The earth banks symbolized like black cliffs should only be crossed at designated crossing points.

Trails still in use are shown with standard black dashes symbology. **Abandoned trails that are just ruts through the terrain are shown as brown dotted lines (non-standard symbol)**. A control clue of "ruined trail" refers to such a brown dotted line abandoned trail.

If it hasn't rained recently, most all of the watercourses and manmade ponds will dry with the exception of the larger creek gullies that have lake water backed up into them. The dry ponds will look like an earthbank with either a depression form line or depression symbol if the pond is more than 1 meter deep or an intermittent marsh symbol if the pond is less than a half meter deep. If it has rained recently, then many of the watercourses, ponds, depressions, intermittent marshes, and trails may have standing water.

The woods includes a mix of tree with evergreen eastern red cedar and deciduous post oak, winged elm, bois d'arc, Texas honey locust and the Texas redbud which starts blooming in March. The white runnable woods are usually open deciduous oak forest with native prairie grasses or a mix of small brush/trees and vines – typically low green briar. Occasionally, mature stands of evergreen cedar may be fast runnable and also shown as white forest. About half of the white runnable forest is similar to what is often called the "Mid-western style of white runnable forest." Gaiters are needed to protect calves from the low green briar.

The lighter green woods are typically oak forest with patches of taller green briar or an excess of small sapling and vines, or large cedar trees with enough low branches still intact to inhibit direct-line navigating. In low wet areas, light green often represents canebrakes. (A canebrake is a thicket of

bamboo that is one to three meters tall, about the diameter of a pencil and fairly easy to push through, but with very low visibility.)

The darker green woods can be thickets of small trees (including cedars and thorny honey locusts) and green briar that grow up as fields first turn into woodlands or more established woods with a mix of cedar and other trees with extra tall green briar. Often the vegetation is thicker at the edge of the woods where greater sunlight allows a mix of green briar, wild roses, poison ivy, and honey locust to thrive.

Brown Xs indicate root stocks that are at least a meter tall. We did not map the rootstocks in the lake area or within the deep gullies because they can move with each change in water level or flood.

Black Xs and Os indicate manmade features. The Black Xs could be green electric boxes (about 1x1x1 meters), picnic tables on concrete (free standing picnic tables were not mapped since they get moved around), trailside benches, miscellaneous junk (old rusty cars, old motorcycles, old culverts, old metal farm equipment, etc.), and large signs. (Only the very largest signs are mapped, smaller trail signs and road signs are not mapped.)

Black Os could be street light poles, water supply components (ranging from 0.5 to 1 meter high water system access covers to large overflow piping), birdhouses on poles, or pilings. Smaller junk less than 0.5 meters high was not mapped.

The black tunnel “V” symbol is used to indicate road culverts (where quite visible or where significant water courses go under the road).

Please respect the camp sites and stay out of them if people are camping.

The Brown and Red advanced courses will cross the paved road twice. Obviously, watch out and give way to cars as necessary.

If you encounter a horse on the trails, please step off the trail and wait for the horse and rider to pass.

There is no water on the course, so bring your own.

Courses	Number Controls	Length (km)	Climb (meters)
Yellow	12	3.3	36
Brown	11	3.2	36
Red	19	7.1	93