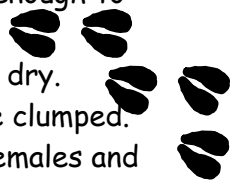
Deer Tracks: Activity Sheet II

Okay… Now that you have had a chance to examine the Forest Image and Map in some detail, it is time to return to the work of the ecologists at the Tatanka Ecological Research Station. You have been selected with several of your classmates to spend a week at the research station studying the behavior and movements of a large herd of deer that are presently living in the area. Specifically, your job is to document the movement patterns of the herd in the forest from day to day. Also, you have been asked to try to determine a reasonable estimation of the total number of deer in the herd based on sightings of the deer themselves, as well as other evidence you might find (such as deer tracks, bedding areas, etc.).

Task #1: Why might it be important for forest rangers and the ecologists at the research station to know about the size of the herd, as well as their movement patterns? In other words, why is your research on these deer important?

Prior to your arrival at the station, the ecologists send you a detailed image map of the region (see **Forest Image #2**), and some information about the habits of deer. Using this information, they want you to select three campsites on the map that will make good outpost research stations. As you think about the best places for these campsites, consider the following information sent by the ecologists:

- Deer tend to be most active (feeding and traveling) early in the morning and in the evening.
- Deer like to feed on tender shrubs and grasses. The water in these plants is often enough to keep a deer from getting thirsty.
- Deer usually head for water in the mornings, especially when the plants they eat are dry.
- Deer usually seek shelter, protection, and shade in forest areas where the trees are clumped.
- Adult male deer (called bucks) tend to stay by themselves most of the year, while females and young tend to stay close together for most of the year.
- Deer have extremely good vision, an excellent sense of smell, and are very good at hearing with their big ears. These senses help them detect danger from far away.



Task #2: Given this information about the living habits and movement patterns of the deer, use the coordinate grid system on **Forest Image #1** to answer the following questions.

1) List the coordinates of two likely places where the deer might seek shelter:(___ , ___) (___ , ___)

2) List three places the deer might feed on shrubs and grasses: (___ , ___) (___ , ___) (___ , ___)

3) Where would deer coming out of the Southeast Woods likely go for water if the plants were dry? (___ , ___) (___ , ___)

4) Do you see any paths on the image that might be used by the deer as they travel through the forest? Highlight one of these paths on Forest Image #1 with a crayon, and describe why the deer might use it.

Task #3: To see the deer as often as possible, it makes sense to spread out your outpost campsites so

that you have a chance to see the herd in the morning, daytime, evening, and in transition from one location to another. Using the coordinate grid system on **Forest Image #1**, identify three locations for your outpost stations. Record the coordinates below, and mark each location with a "Δ" on the map.

Campsite #1: (___ , ___) Campsite #2: (___ , ___) Campsite #3: (___ , ___)

We chose the location for Campsite #1 because…

We chose the location for Campsite #2 because…

We chose the location for Campsite #3 because…

Back to the story… At the end of the second day on the research trip, no sightings or signs of the large group of deer had been seen. Fearing that the deer might have moved out of the area, the ecologists at the research station decide to split the group in to three small research teams that would each look for the deer in a different part of the forest. Others would stay behind at the campsite outposts, keeping an eye on those areas as well. Perhaps with everyone splitting up across the forest, some new signs would be found.

Well… it worked! Just before 6 a.m. the next morning, Team #1 came across fresh deer tracks – lots of them – as they were hiking along the Mato Path. They used a radio to contact the research station, and reported that they found tracks at the coordinates of (1200E, 400N). They also reported that the tracks appeared to be heading almost directly west.

Task #4: On the **Forest Image #1** map, mark the location of the deer tracks that Team #1 reported at (1200E, 400N) with the symbol of deer tracks: **( )**. According to their report, the deer were heading straight west. Draw an arrow on the map that indicates the direction the deer were headed.

The ecologists figured that the deer were probably headed for the grassy meadows and water that could be found on the southwest end of Tatanka Lake. Team #3 had been assigned to follow the stream that fed into Tatanka Lake from the south, and they seemed like the most likely group at the time to run across the herd. So, the ecologists sent a radio message to Team #3 to move as quickly and as quietly as they could from their present location at (400E, 500N) to (700E, 500N).

Task #5: Mark these two locations on your map (using the symbol "T3"), and put a line between them with an arrow indicating the direction the team walked to get to the new location. How many meters did Team #3 have to walk to get to (700E, 500N)? _____ About how long do you think it took the team to walk between the two points? _____

Unfortunately, when Team #3 got to the tip of Tatanka Lake at about 6:20 a.m., they did not see any evidence of the deer. They decided that the deer must have headed north along the east side of Tatanka Lake. They looked at their Forest Image map to see what the terrain was like on the east side of the lake.

Task #6: Look at your map as well – how would you describe the forest along the east edge of the lake? _____ Would it be easy to spot the deer if they had gone that direction? Why/why not? _____
_____

The team decided to spread out and try to find tracks around the south and east end of the lake. Finally, at about 7:00 a.m., they found the trail again! Two students came across a muddy area at about (900E, 600N) that was filled with fresh tracks, **heading north**. Mark this spot on your map with the same deer print symbol you used earlier: **( ).**

After hearing this news, the research station quickly contacted Team #2 by radio. Team #2 had been assigned to watch for the deer from atop the rock outcrop near Paha Hill. Team #2 was told to get off the outcrop as quickly as they could, and then travel **due north** for exactly 100 meters, and then go **straight east** for 400 meters. They were told to make sure they stayed in good forest cover (that is, stay in the trees) so as not to be seen by any deer that might already be visible ahead.

Task #7: Place the symbol "T2" on your map at the new location of Team #2. What are the coordinates of this new location for Team #2? (___ , ___) Based on what you can tell from **Forest Image #1**, at this location, are the students still under the protective cover of the forest? _____ How do you know (based on what you can see in the image)? _____
_____

If Team #2 was to continue to creep forward (still directly east), in approximately how many meters would they reach the place where the edge of the forest appears to meet the grassy meadow? ____

Sure enough! There they were! Team #3 crept silently to the edge of the meadow just in time to see first three, then five, then 12, then… almost 150 deer emerge from the forest directly across the river! Mark the location where the deer came out of the forest with the symbol for deer tracks: **( ).** Well done!! Due to the great work of each of the teams, the tracking mission was a total success!

Task #8: Take a few minutes to reflect on what you learned in this activity by answering the following:

1) What is a coordinate?

2) How did you use coordinates in this activity?

3) When you looked at the satellite image of the forest, what things could you identify?

4) What did you learn about the habits of deer?