

# Introduction to GPS

Name \_\_\_\_\_

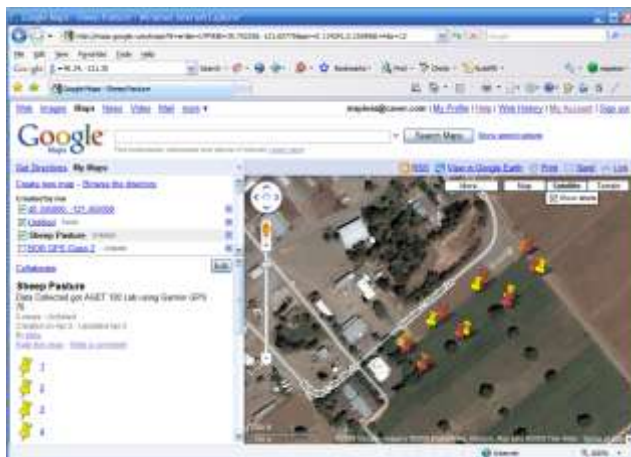
Global Positioning Systems (GPS) are becoming common in agriculture for field mapping and precision agriculture applications. This exercise uses WAAS corrected GPS units so accuracy is limited, but demonstrates the utility of GPS and how it works.

1. Take turns using the GPS unit. Turn on the GPS Unit. For this exercise the GPS units must be set to decimal degrees (dd.ddd).
2. In the field, complete part "A" of the data sheet
3. Following the instructor instructions, collect location information for each point and record the Northing and Easting in the data table.
4. Complete Part "C" before leaving the field.
5. Turn off your GPS.
6. Using Google Maps (<http://www.google.com/maps>) create a map of your data.
7. Complete the questions in part "D"
8. Attach the map to the lab.

## Using Google Maps

1. Open the Google Map Site at: <http://www.google.com/maps>
2. Login using your gmail account.
3. Select the My Maps Link. Then choose Create a New Map, add a title, and click on the SAVE button.
4. Enter the latitude and longitude of each point in the search box. For example: 40.245, -121.234
5. When Google finds the point, click on the Save to My Maps link and select your map by name.
6. Repeat this process until all points are entered.
7. When you have entered all the points, click on Save to save the map.

You may wish to edit the description and/or the icon. See Help for more information. You may use Alt-PrtScn to capture the screen and paste into a Word Document or use the View in Google Earth link to view your points in Google Earth (available in the campus labs or download for free at: <http://Earth.Google.com/> )



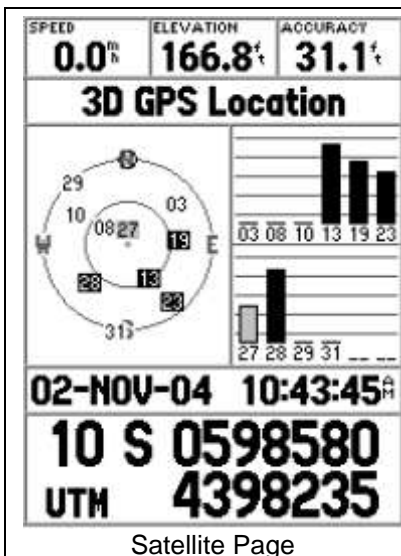
Screen Capture



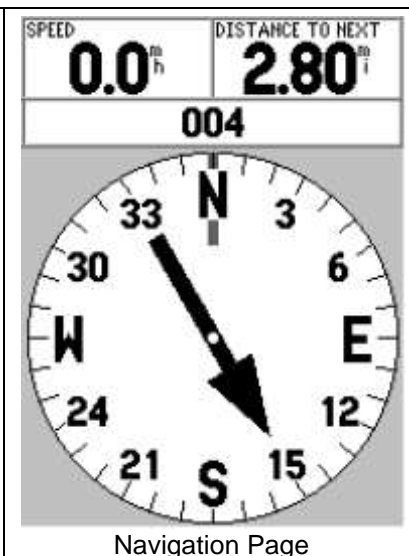
Google Earth Image

## Quick Guide to GPS Map 76

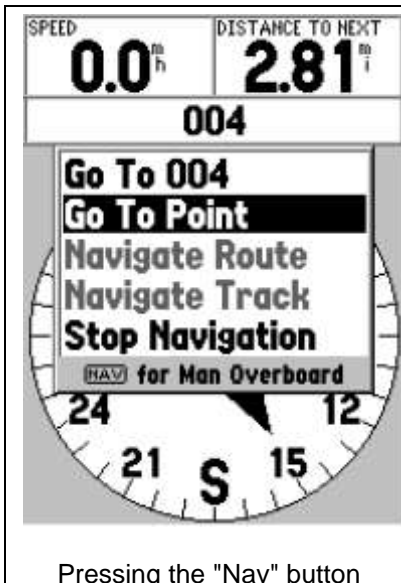
- 1) Press the Light Bulb button to turn on the GPS. (Press and hold to turn off)
- 2) Use the **Page** button to change the display between the various pages.
- 3) The **Satellite** page displays the current status of the GPS. 3D should be displayed (see screen below)
- 4) The **Navigation** page displays the distance and bearing to the next waypoint (see screen below). Always point the GPS in the direction of travel to get an accurate indication of the direction to the waypoint. NOTE: You need to be moving for the GPS to determine your direction of travel.
- 5) Press **Nav** button to load a waypoint. Use the cursor (big round button) to select GoTo Point then press Enter, Press Enter to select Waypoints, use the cursor to select the desired waypoint, then press Enter. Press Enter again to "goto" the waypoint.



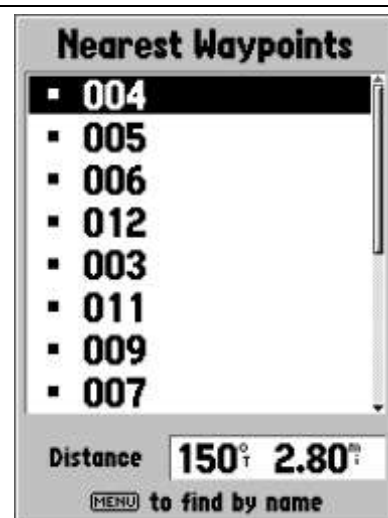
Satellite Page



Navigation Page



Pressing the "Nav" button



Selecting a Waypoint



Waypoint Screen

Part A – Before starting.

How many satellites are being tracked (dark)? \_\_\_\_\_

List the satellites by number. |\_\_\_\_|\_\_\_\_|\_\_\_\_|\_\_\_\_|\_\_\_\_|\_\_\_\_|\_\_\_\_|\_\_\_\_|\_\_\_\_|\_\_\_\_|\_\_\_\_|\_\_\_\_|

What is the reported accuracy? \_\_\_\_\_

Part B – Collecting GPS Data

Record your data points (decimal degrees) in the table below.

Latitude #1	Longitude #1	Latitude #2	Longitude #2	Description

Part C – After collecting data.

How many satellites are being tracked (dark)? \_\_\_\_\_

List satellites by number. |\_\_\_\_|\_\_\_\_|\_\_\_\_|\_\_\_\_|\_\_\_\_|\_\_\_\_|\_\_\_\_|\_\_\_\_|\_\_\_\_|\_\_\_\_|\_\_\_\_|\_\_\_\_|

What is the reported accuracy? \_\_\_\_\_

Part D – Questions.

1. How did the accuracy change during your measurements?

\_\_\_\_\_

2. Why did the accuracy change?

\_\_\_\_\_

3. How did you points change between the two collection passes and why?

\_\_\_\_\_