

Description of Google Earth/Google Maps/iNaturalist Tool for Finding Nature Card Examples in Witty's Lagoon.

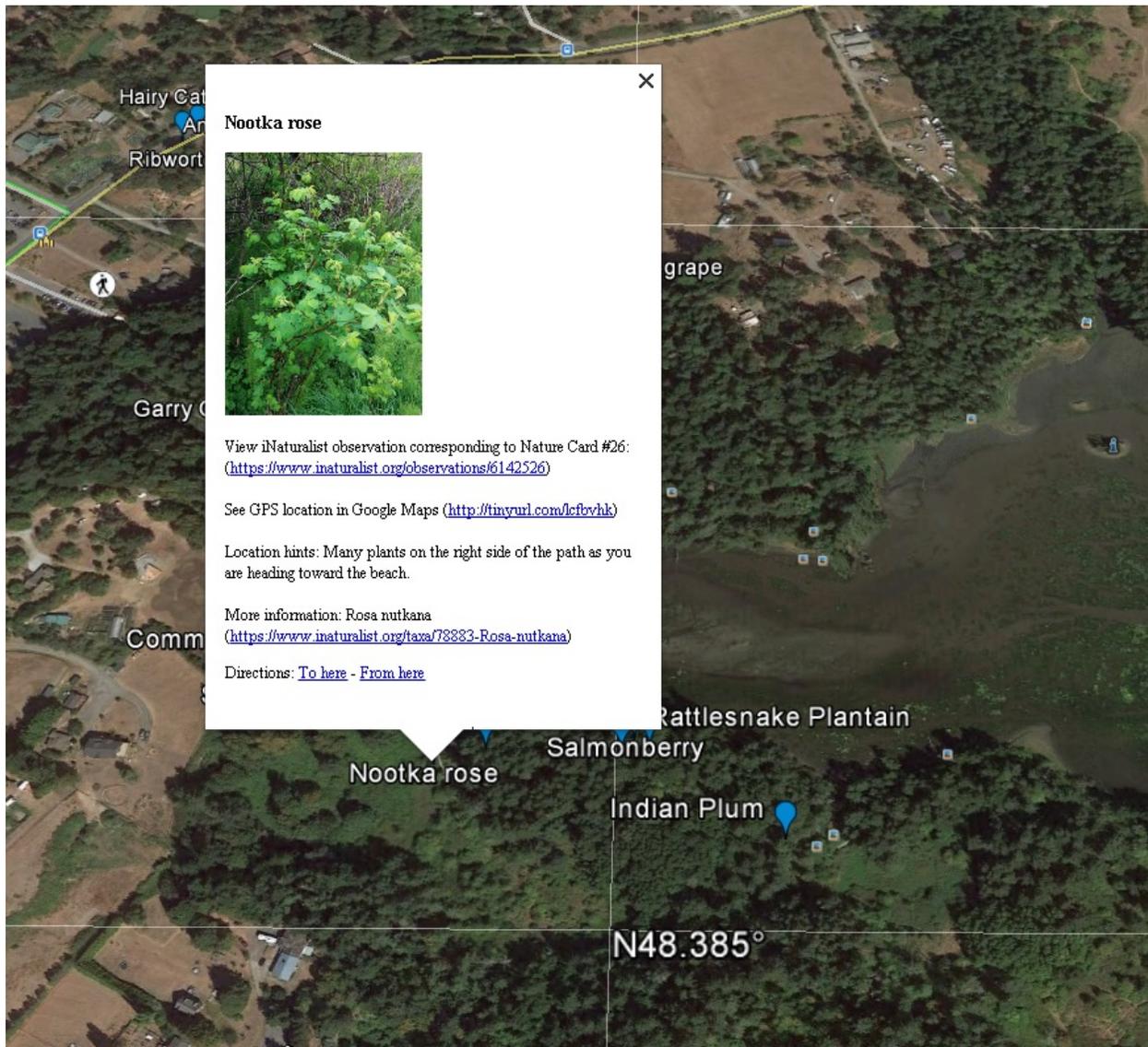
I have now implemented a smartphone/tablet application that finds examples of the Metchosin Foundation Nature Cards in Witty's Lagoon CRD Park. It is in the form of a kml file. The file is named "Nature Cards Witty's Lagoon Observations.kml".

To make this implementation work in its full form, the user needs to have two (free) apps, Google Earth and Google Maps, on a smartphone/tablet. The kml file, with its stickpinned observations, opens up in Google Earth. It looks like this:



Google Earth display with stickpinned specimens

The stickpins, when selected in the Google Earth display, have several links and a Witty's Lagoon picture of the organism:



Display when Google Earth stickpin is clicked.

The first link leads to the iNaturalist observation page (you don't need an iNaturalist account to view these pages). The iNaturalist page has the in situ picture that I took of the local organism, images of the front and back of the relevant Nature Card, and the Nature Card number (the in situ picture and card number are also on the Google Earth stickpin). Here is a sample iNaturalist page:

The screenshot shows the iNaturalist.org website interface. At the top, there is a navigation bar with the iNaturalist logo and menu items: Observations, Species, Projects, Places, Guides, and People. Below the navigation bar, the page title is "Your observations". The main heading is "Nootka rose (*Rosa nutkana*)", followed by "Observed by kem_luther · May 8, 2017 · 12:14 PM PDT". There are several action buttons: Edit, Copy, Delete, Add to favorites, Identify, Add to project, and Share. The page features a large photo of the Nootka rose plant on the left. To the right of the photo is a map showing the location in Victoria, BC, with a green pin. Below the photo, there is a caption: "Photo © kem_luther, some rights reserved" and a link "Add more photos". Below the map, there is a location description: "Location: 4195 Still Meadow Road Victoria, BC V9C 4H8 (Google, OSM)", "Places: CA-BC-CP, Vancouver Island, CA-BC, CA, North America, NA More...", "Lat 48.38607205, Lon -123.52142755", "Accuracy: 10m", and "Geoprivacy: open Edit". At the bottom of the page, there is a link "Hide details".

The iNaturalist page for the Nature Card organism observation.

Another link in the expanded stickpin leads to a general information page about the organism (usually a Wikipedia page formatted by iNaturalist). Example:

The screenshot shows the iNaturalist.org interface for the species *Rosa nutkana*. The page includes a navigation bar with categories like Observations, Species, Projects, Places, Guides, and People. A breadcrumb trail indicates the path: Life > Plants > ... > Roses > Nootka rose. A search bar is located in the top right corner.

The main content area is divided into several sections:

- Image:** A large, vibrant photograph of a pink Nootka rose flower with a yellow center. A "View More" link is visible at the bottom of the image.
- Observer/Identifier Stats:** On the right, there are statistics for the top observer (ksayce, 12 observations) and top identifier (ajwright, 65 observations). Below this, the last observation date is listed as May 08, 2017, and the total number of observations is 265.
- Plant Phenology:** A line graph showing the seasonal frequency of observations. The x-axis represents months from JAN to DEC, and the y-axis represents the number of observations (0 to 80). The graph shows a peak in May, with approximately 55 observations recorded.
- Navigation:** A horizontal menu below the image and graph includes links for Map, About (which is currently selected), Taxonomy, Status, Similar Species, and Curation.
- Source: Wikipedia:** A section providing a brief description of the species: "*Rosa nutkana*, the Nootka rose,^[3] bristly rose, or wild rose is a 2-10 feet (0.61-3.05 m) tall perennial shrub in the rose family (Rosaceae).^{[4][5][6]} The species name *nootka* comes from the Nootka Sound of Vancouver Island, where the plant was first described.^[7] This plant is native to Western North America.^[6] There are 2 varieties: *hispida* grows in the Intermountain
- More Info:** A sidebar on the right offers additional resources such as "Tree of Life", "Tropicos", and "California".

Page of general information in iNaturalist

Another link in the stickpin popup, when clicked, takes the user to Google Maps and shows a marker at the GPS location. Using the Google Maps display, which shows both the smartphone location and the target location, the user can walk to a spot within a few feet of the place where the iNaturalist picture was taken and view a living example of the Nature Card.



Google Maps display showing target location. If you were viewing this on a smartphone/tablet and you were in the scope of this map, your location would also be visible.

Some implementation considerations:

(1) The Google Earth part of the procedure also works on a desktop computer. With a fixed-location computer, however, you can't walk to the site, so the Google Maps part would not work. (In fact, if you try to use the Google Maps part in a fixed-location computer, you can end up with an infinitely refreshing display. The way to avoid this is to go into Google Earth and select Tools | Options | General and click on "Show web results in external browser.")

(2) When you view the stickpins in Google Earth, Google Earth will ask you, when you leave the program, if you want to save the stickpins to your "My locations" folder. If you do this, you may find that the next time you use Google Earth by double-clicking the kml file, all the stickpins will be doubled. You should choose the "discard" option when you close Google Earth.