Using the Last Chance Ecosystems web map

Land protection remains a central part of TNC's conservation mission. TNC and our partners have a range of objectives for land protection work around the world, including core considerations of representation, resilience (places of high ecological intactness and of sufficient size, connectedness and diversity to enable resilience in the face of climate change), and our overarching frame of addressing the biggest causes of biodiversity loss. A global view of places important for these objectives is an essential step in prioritizing TNC and partners' significant investments in land protection.

The *Last Chance Ecosystems* bring together multiple, state-of-the-art global assessments developed by TNC and collaborators. Together, they provide a global guide to help TNC and partners identify important places for protection. These maps are dynamic, because some of the underlying data will change over time. For instance, the amount of land protected and land converted in a region will continue to change. Ultimately, decisions about investments in protection are also influenced by a wide range of non-ecological factors, including opportunity, cost, and social and political conditions. The *Last Chance Ecosystems i*ncludes places where TNC is already working and places where we are not.

This document describes the different data that appear in the *Last Chance Ecosystems*, and how to use the web map application that displayed this data.

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Last Chance Ecosystems

Last Chance Ecosystems are all the places that are shown when you first launch the web map. Currently, this is a combination of two layers; last chance places to protect globally representative habitats, and last chance places to reduce mammal extinction risk.

Last Chance Crisis Ecosystems
- Areas within Crisis Ecosystems that remain relatively intact from an ecological point of view (see next slide for definition of Crisis Ecosystems)
- Intact areas are places with low human modification (Human Modification Index <0.1) based on Kennedy et al 2019

Last Chance Mammal Areas
- Areas whose protection is disproportionately important, globally, for reducing extinction risk to mammal species
- Utilizes new global data sets and innovative conservation planning approaches to explicitly link land protection with extinction risk for terrestrial mammals
- Areas are based on a global optimization (utilizing the software Zonation) of where habitat loss would result in the great change in extinction risk
- Current analysis based only on mammal species already classified as threatened
- Collaborators: Heini Kujala (University of Helsinki), Piero Visconti (University College London), Luca Santini (Radboud University), Jelle Hilbers (Radboud University)

Last Chance Wildlands
- FORTHCOMING

Other map layers

Crisis Ecosystems (original extent)
- This layer is not visible when you first open the map
- Natural ecosystems that have suffered high conversion (e.g. clearing for agriculture) and have low current protection
- Categories are defined as:
    - Vulnerable (<30% in protected areas, > 30% converted)
    - Endangered (<17% in protected areas, > 50% converted)
    - Critical (<10% in protected areas, > 80% converted)
- Ecosystems are based on recent definition from Sayre et al 2020 using data on climate, landform and landcover
- In addition, ecosystems were stratified according by Biogeographic Region (see definition below) before assessing their crisis status

Wallace's Biogeographic Regions
- This layer is not visible when you first open the map
- Based on recent updates to Wallace's Biogeographic realms using various taxa (see Holt et al 2013 and Ficetola et al 2017)
- Used to stratify the World Ecosystems so they are representative of the unique biodiversity associated with ecosystems in different parts of the world

World Database of Protected Areas
- This layer is not visible when you first open the map
- Location of nationally recognized Protected Areas from the World Database of Protected Areas
- Click on an individual Protected Area to see it's name

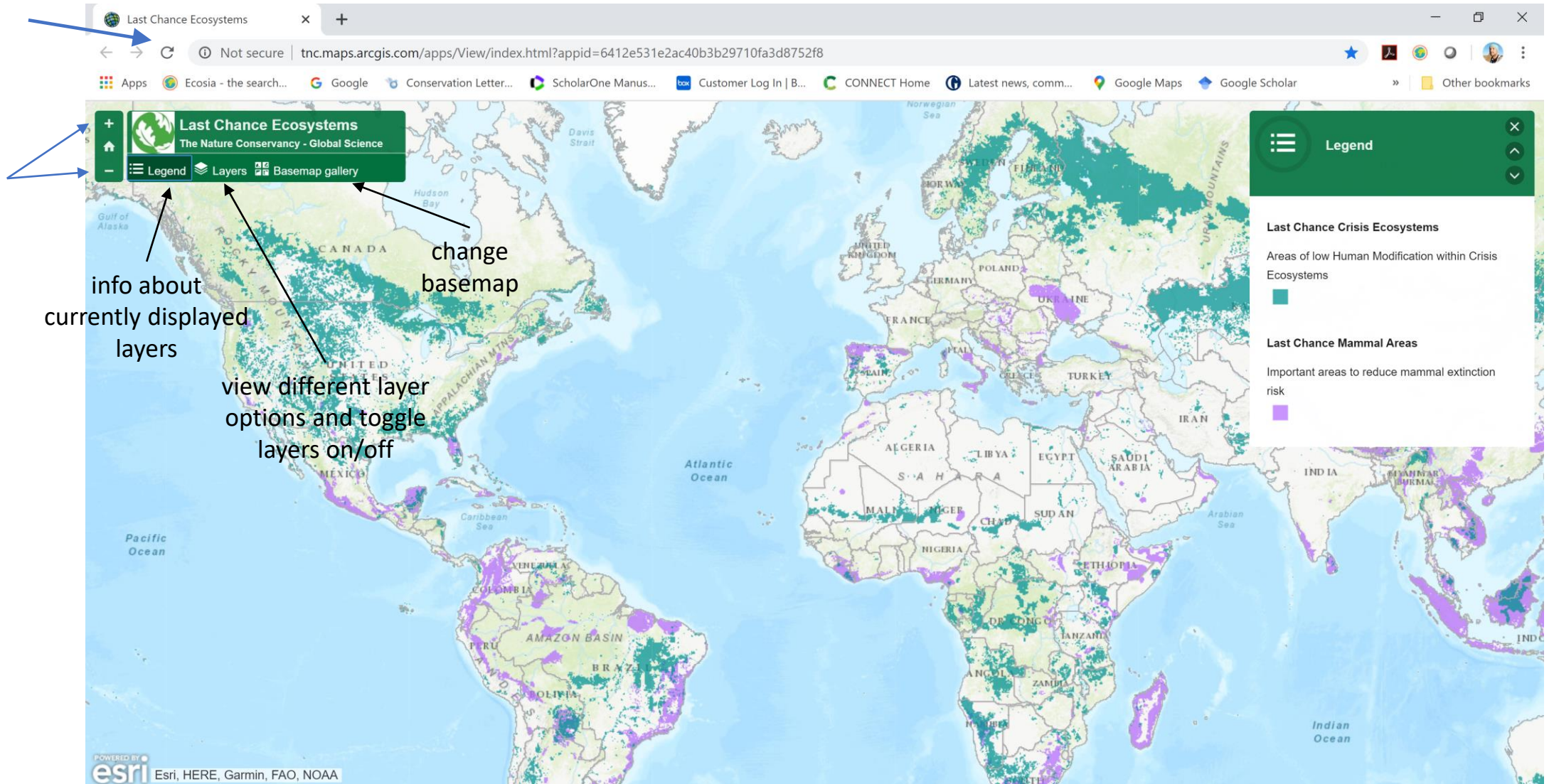**Resilient Connected Network (USA)**
- This layer is not visible when you first open the map
- This layer guides TNC's protection work in North America by identifying a network of resilient sites and connecting corridors that, if conserved, could sustain North America's natural diversity by allowing species to adapt to climate impacts.
- It is built from three independent data layers integrated into a network:
    - **Representative Resilient Sites**: Site Resilience is the ability of a site to sustain biodiversity and function even as the biota changes as defined in Anderson and Ferree 2010
    - **Climate Flow**: Climate flow was used to identify key corridors and movement zones that will allow species to disperse, migrate and adapt to a changing climate.
    - **Recognized Biodiversity Value**: An assessment of biodiversity value based on the presence of a rare species population, exemplary natural community or intact habitats. It was measured using The Nature Conservancy's ecoregions portfolios, the US State Wildlife Action Plan's conservation opportunity areas, and Natural Heritage Program occurrences of biodiversity elements.
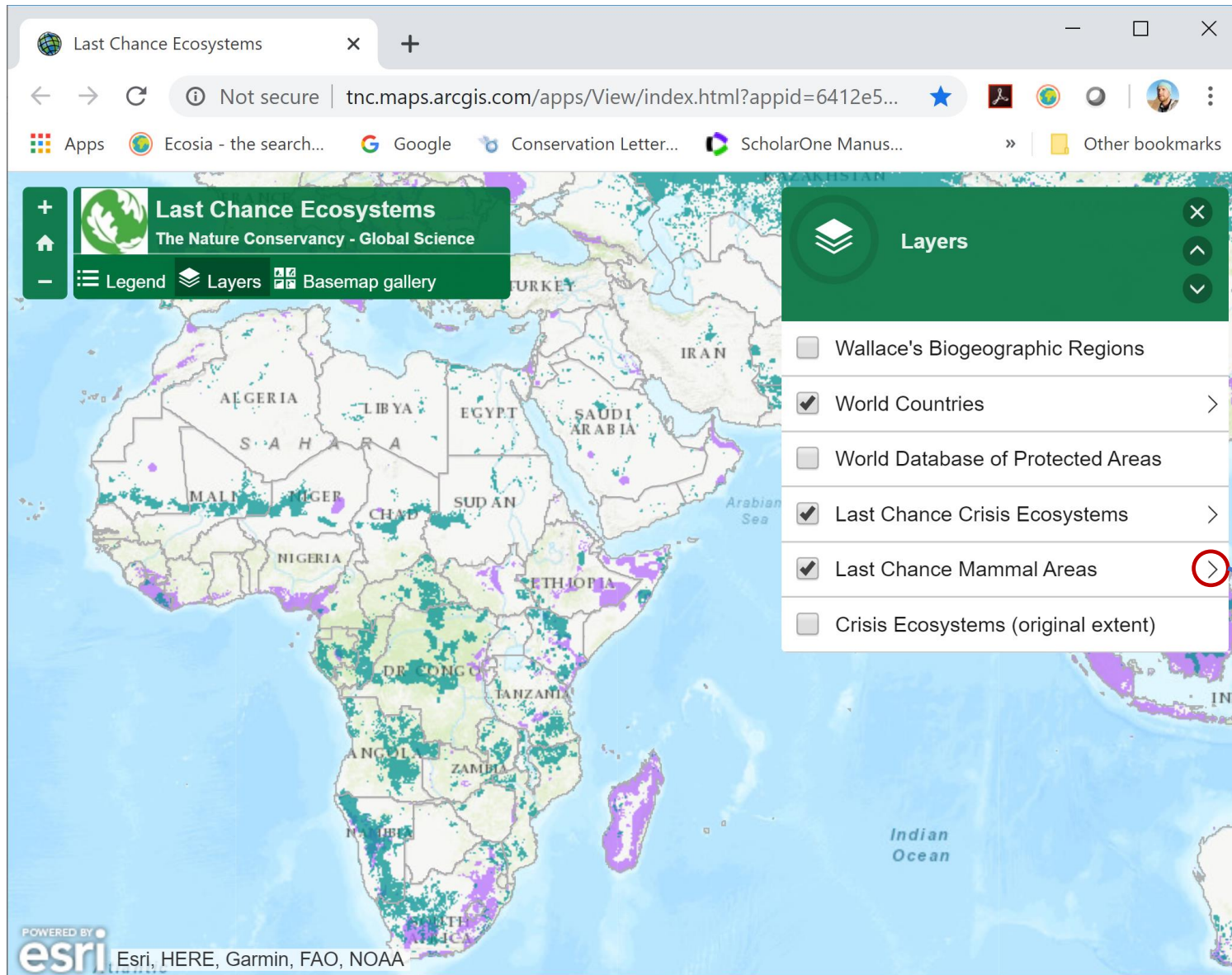
Navigating the Last Chance Ecosystems web map

http://tnc.maps.arcgis.com/apps/View/index.html?appid=6412e531e2ac40b3b29710fa3d8752f8

browser refresh to reset

zoom
or use mouse wheel

info about currently displayed layers

view different layer options and toggle layers on/off

change basemap

Click on the **layers** tab to open <u>layers window</u>

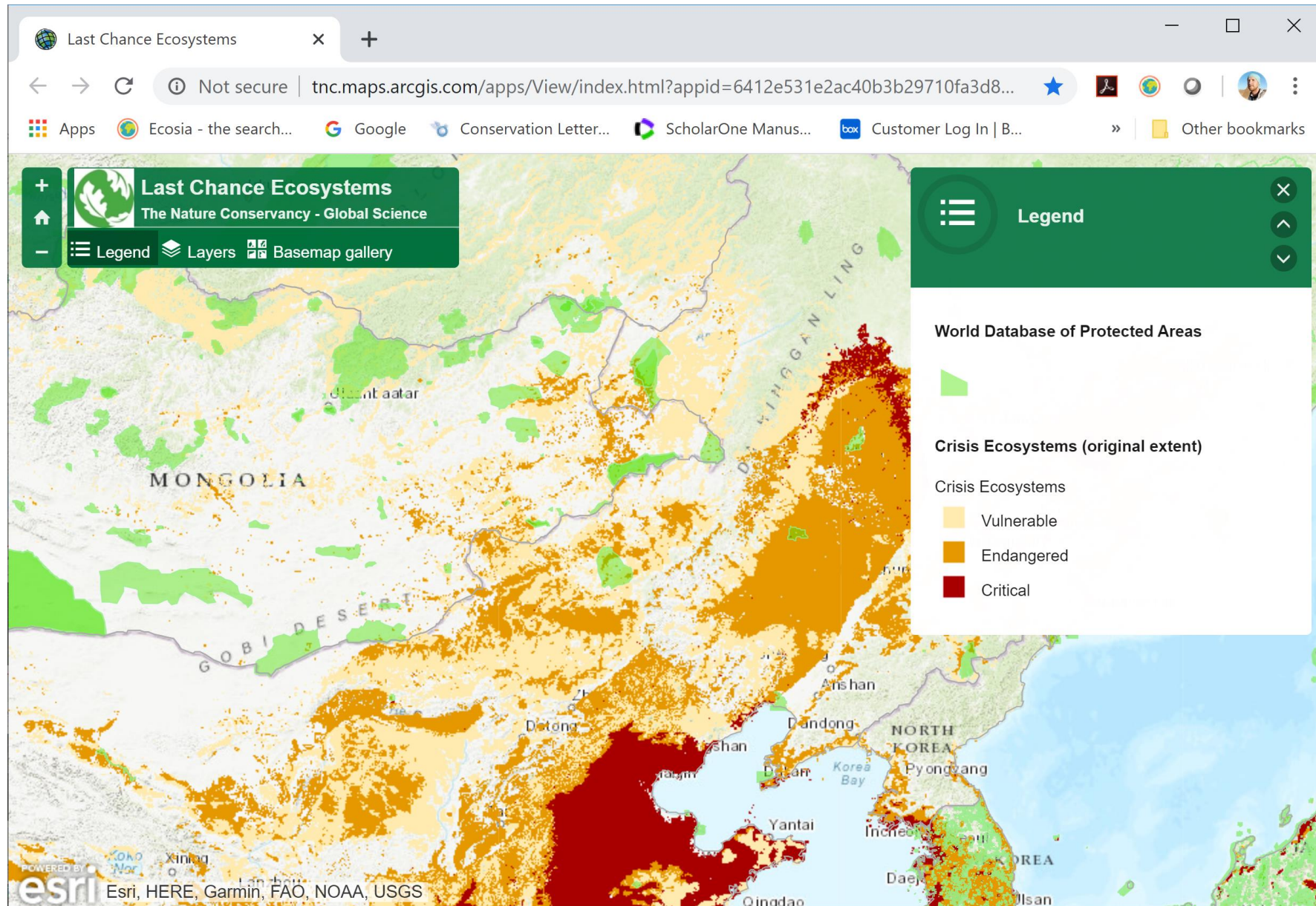Use <u>layers window</u> to toggle layers on/off

Click arrow to right of layer name to expand:
- Shows legend
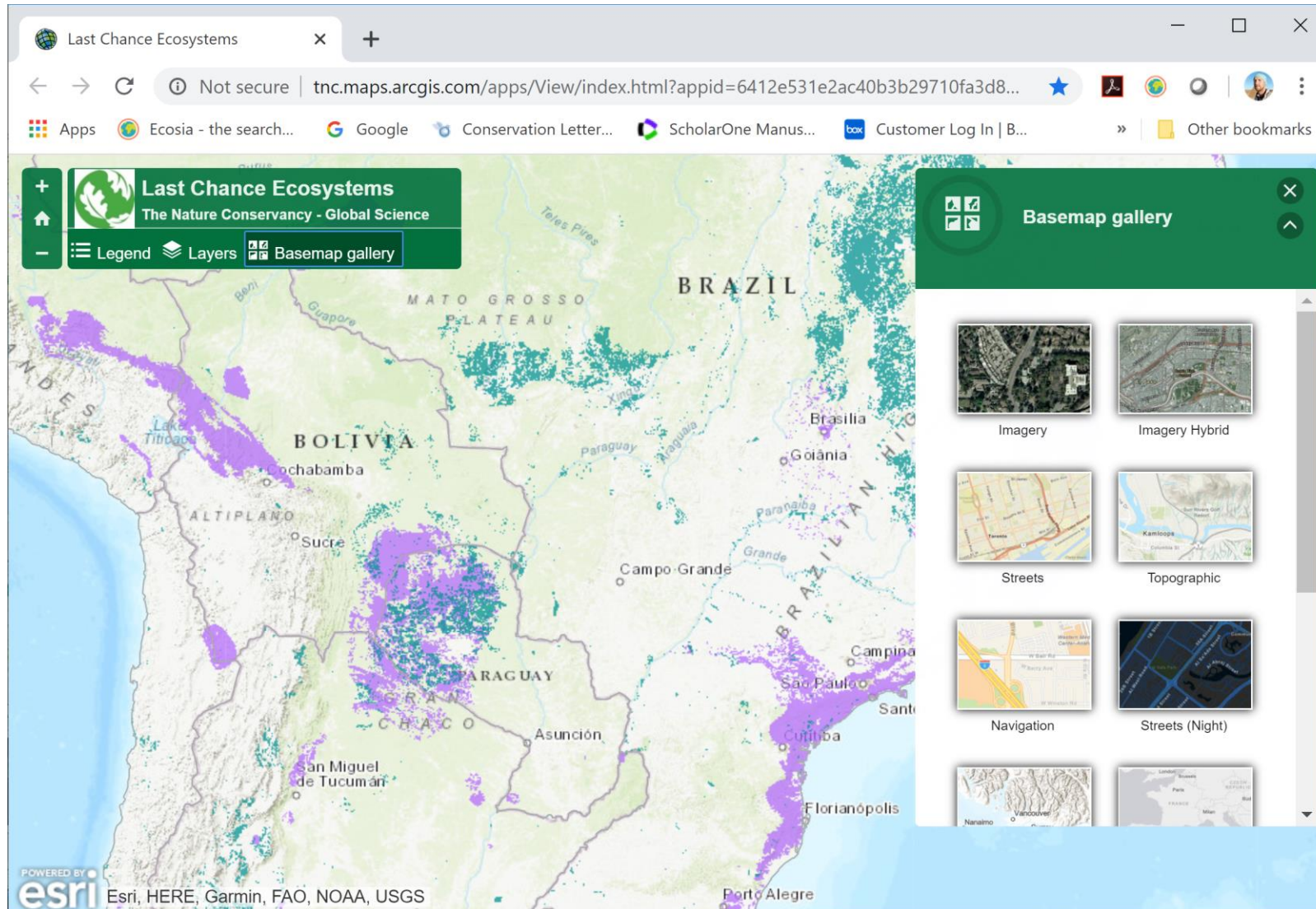- Allows user to change layer opacity

Click to expand
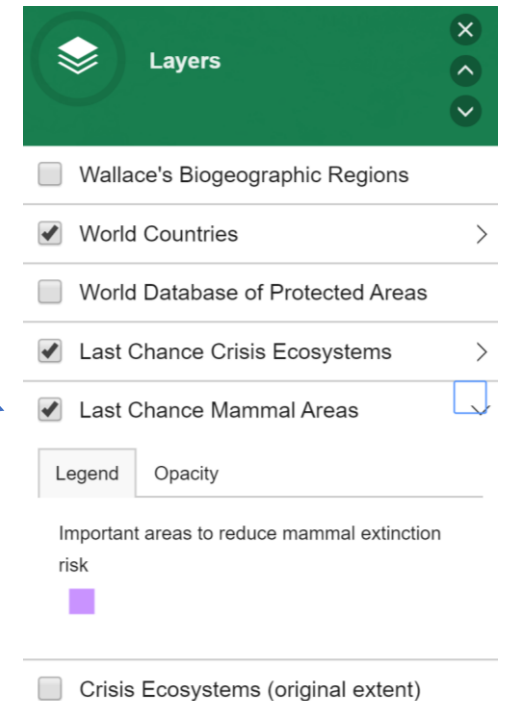
Click on the **legend** tab to show information (color, name) of current "on" layers
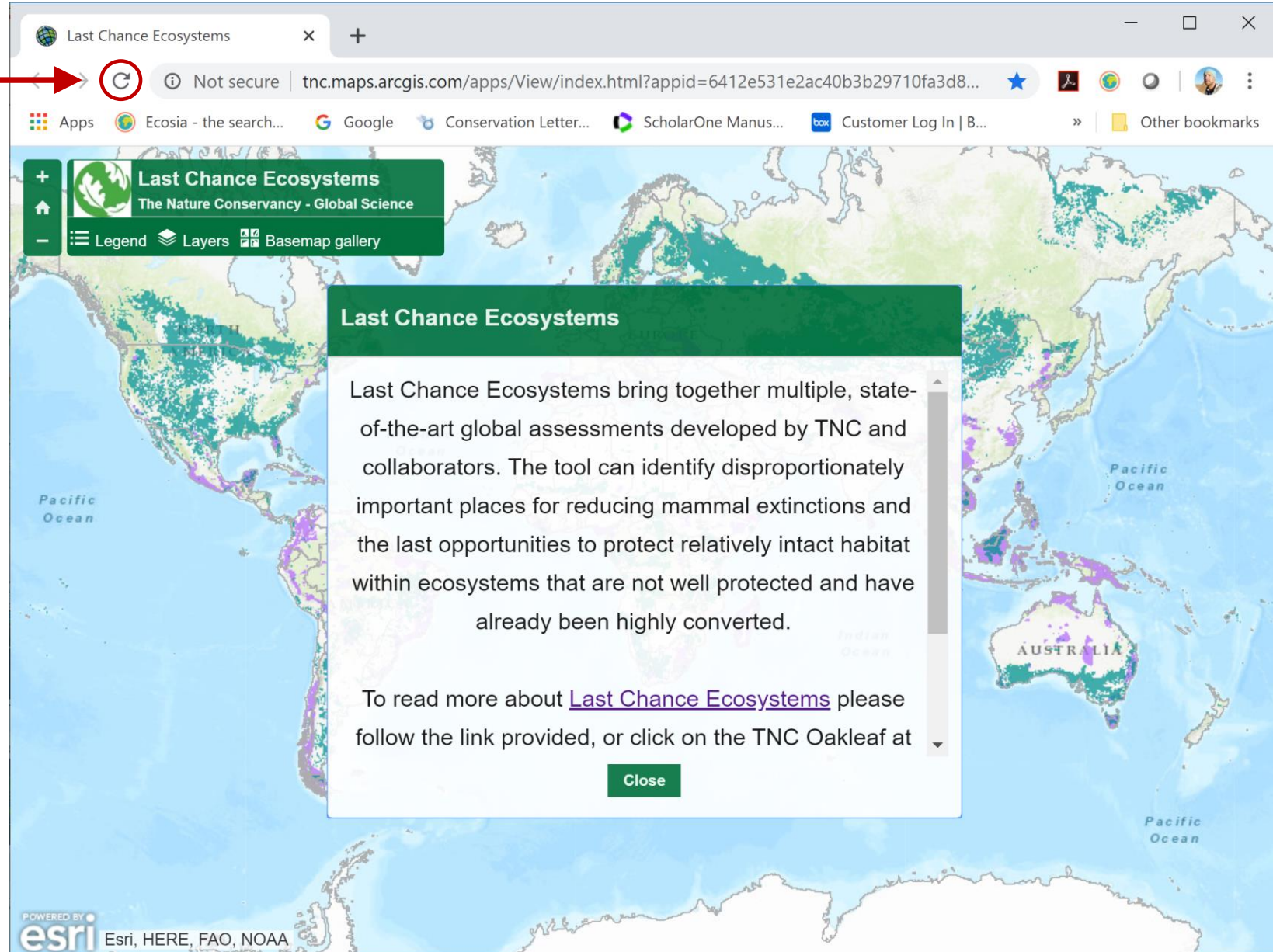
Click on the **basemap** tab to open <u>basemap gallery window</u>

Use <u>basemap window</u> to select different basemaps

Use your browser 'refresh' button to reset any changes and go back to initial screen

Refresh on Chrome

When you refresh or close the browser window, any changes you made will be lost