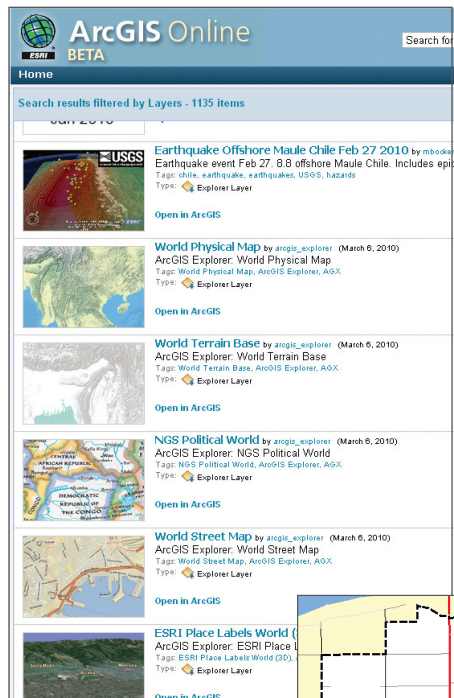


# Making Map Content More Usable

## Best practices for sharing layer packages and map services

Sharing maps and map content saves time and money for organizations, and it's easily accomplished with layer packages or map services or a combination of the two using tools in ArcGIS. However, taking a little time to tweak and document the source map that will be used for layer packages or map services will make these products more valuable because end users will better understand the data and purpose of the map and be able to use them more effectively.



*Maps authored in ArcGIS Desktop can be shared as layer packages and shared on ArcGIS online. Layer packages can also be distributed via e-mail, CD, or network drive.*

*Before sharing maps, take time to document the map and layers to ensure that those who use the map will understand the map's data and purpose.*

Layer packages, introduced at ArcGIS 9.3.1, are a single, ready-to-use file that encapsulates the source data, cartography, and other properties of the layer that was authored in ArcMap. Layer packages are easy to share—they can be e-mailed, published on CDs and

DVDs, placed on network drives, or shared via ArcGIS online. Like a ZIP file, a layer package (LPK) can be downloaded, unpacked, and used immediately or can be added to a geodatabase. Creating a layer package requires nothing more than right-clicking on the layer and choosing Create Layer Package. Layer packages work well when sharing locally held data of a limited size. A useful way to ensure that all the data is saved as part of the layer package is to use a file geodatabase as the data source for the map layer.

For sharing maps that use many layers with associated datasets and/or that incorporate basemaps from ArcGIS online, map services are a better choice. A map service is used to publish maps to the Web using ArcGIS and makes maps, features, and attribute data available inside many types of client applications. ESRI provides .NET, Java, SOAP, and REST interfaces for working with map services. Map services are often used to show business data on top of basemap tiles from ArcGIS online, Bing Maps (formerly Microsoft Virtual Earth), or Google Maps.

Publishing a map service is also straightforward. Tools in the Map Service Publishing toolbar in ArcMap can be used to optimize and tune map documents and saved as a map service definition (MSD). To support optimized map services using MSDs, ArcGIS includes a

tional data and basemaps, layer packages and map services can be combined. If map content will be published online mashed up with other sources, it may be a good idea to consider using a different coordinate system. If it will be used with online basemaps, those from ESRI, Bing, or Google, Web Mercator may be a better choice of map projection.

No matter the method used for sharing map content, maps should be prepared before sharing them. Taking some time to document the map will ensure that those who use the layer will understand the data and the map's purpose.

1. Right-click on the layer to be packaged, open the layer properties for that layer, and begin by clicking the General tab.

- a. Update the layer name from the default name (which is the same as the layer source) to a name that is more useful.

- b. Add a description for the layer. The description will automatically appear with the shared content. Making an effort to include useful names and map properties in the description will make layer packages easier to discover.

- c. Include any copyright or source information in the Credits field.

- d. Adjust the Scale Range (if desired).

2. Click the Display tab.

- a. Adjust transparency (if applicable) and adjust layer visibility to show symbols or sub-layers.

3. Click the Symbology tab.

- a. Update Labels with user-friendly names.

- b. Update the symbol properties so that all items of the same type (points, lines, polygons) are represented in a similar way. Uncheck the All Other Values option because it is not needed and will appear in the final legend.

- c. Make any other necessary adjustments to the symbology.

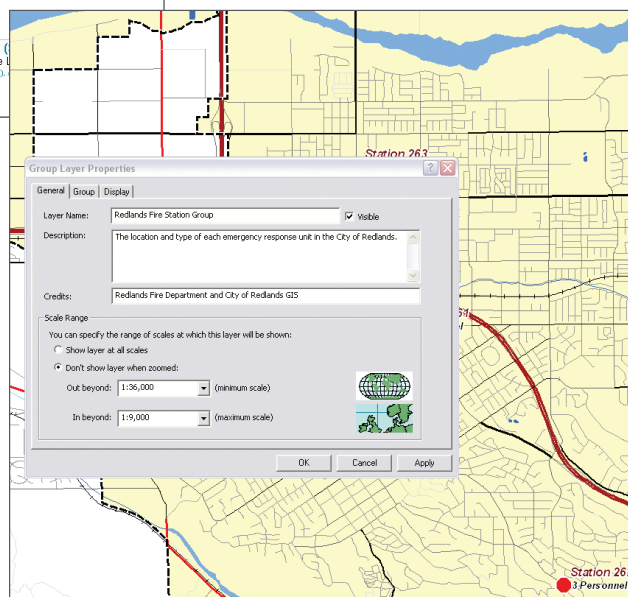
4. Click the Fields tab.

- a. Uncheck fields that are irrelevant to the user or that do not provide essential information.

- b. Enter aliases for any checked fields that do not have user-friendly names.

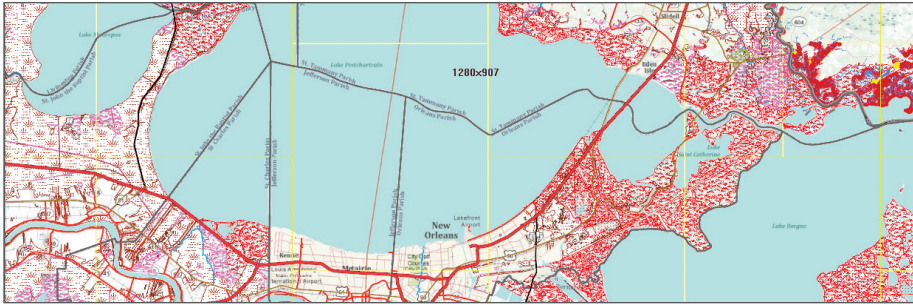
5. Click OK to apply these changes.

Another way to improve the "shareability" of maps is to improve the overall cartographic quality of those maps. Map templates downloaded at no charge from the ESRI Resource Center ([resources.esri.com/maptemplates](http://resources.esri.com/maptemplates)) not only speed up the process of creating maps but enhance map design. Because these map templates are the same ones ESRI uses in developing content for ArcGIS online, using map templates standardizes maps so they are



high-performance, scalable mapping engine, which can generate dynamic, high-performance maps on the fly (as well as cached map services) using the advanced cartography designed in ArcMap.

To share map content that uses local opera-



*ArcGIS.com makes maps and layers, such as this map of the Gulf oil spill, available via many methods including ArcGIS Explorer Online.*

more easily shared. A companion article in this section, "Superior Results in a Fraction of the Time: Map templates enhance productivity and skills," describes how to use free map templates available from ESRI to design more professional-looking maps quickly.

#### A Platform for Sharing Maps and Map Content

For the last several years, ArcGIS online has provided a common platform for ArcGIS users to discover and share geographic content and build GIS applications. Users can directly connect to maps, layers, tasks, and tools published by ESRI and other ArcGIS users.

Users can collaborate with other users who

share a common interest and develop Web applications using ArcGIS Web Mapping APIs and ready-to-use ArcGIS online content that is continually updated. ArcGIS online is hosted by ESRI and powered by ArcGIS Server. Every ArcGIS user has 1 gigabyte of free storage.

ArcGIS online is evolving from a destination to an integrated and integral aspect of the ArcGIS user experience for providing data, tools, and sharing. Content can be shared with the entire GIS community or specific groups and it is available 24/7, hosted by ESRI. ArcGIS.com is a new platform that will give GIS users an easy way to find, use, and share content from ESRI and other users

and employ services, such as geocoding, gazetteer, and routing. All ArcGIS.com resources will be available at no charge to current ArcGIS users for internal and noncommercial use. Basemap galleries make it easy to locate ready-to-use imagery, street, topographic, and thematic maps from ESRI. The tools available at ArcGIS.com include Web mapping applications, Web GIS applications, mobile applications, ArcGIS Explorer Online, and code and application templates. JavaScript, Flex, and Silverlight APIs; ArcGIS online applications such as Business Analyst Online; and cloud services are also available at the site.

#### Resources

For more information on sharing GIS resources, visit the ESRI Resource Center ([resources.esri.com/maptemplates](http://resources.esri.com/maptemplates)) and the ESRI Mapping Center ([mappingcenter.esri.com](http://mappingcenter.esri.com)). An ESRI instructor-led class, *Creating and Publishing Maps with ArcGIS*, is also available. Visit [www.esri.com/training](http://www.esri.com/training) to learn more about this class.

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Thomas Trammell, Engineer Tech  
City of Bakersfield, CA

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