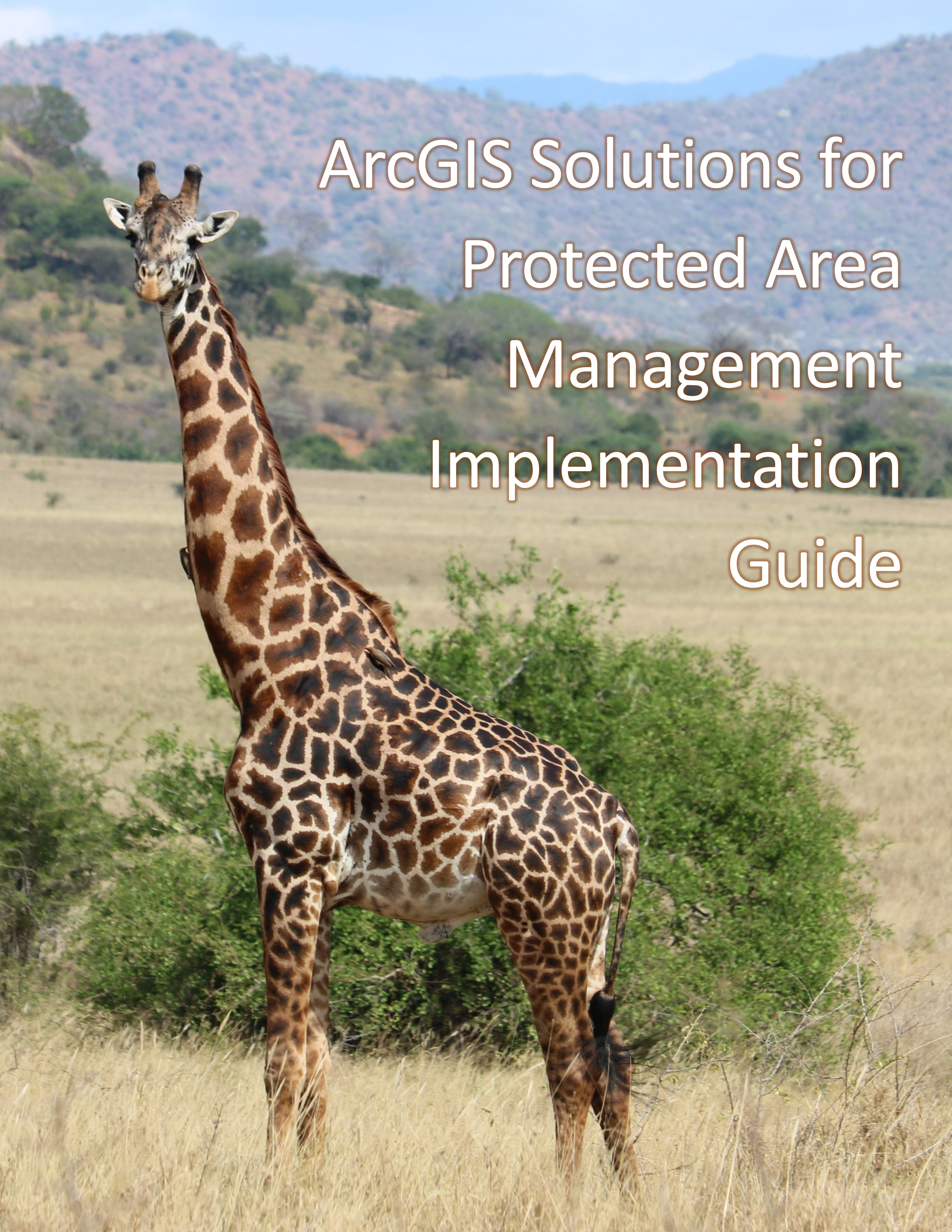
ArcGIS Solutions for Protected Area Management Implementation Guide



Guide checklist

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1. Welcome to the ArcGIS Solutions for Protected Area Management

Around the world, natural areas are set aside to protect their unique biodiversity, landscapes, and cultural and economic significance from damaging human activities. Securing that protection requires holistic management, the expertise of dedicated staff, and the support of local communities.

Protected area organizations know the management practices that result in secure, healthy, and productive parks and community reserves. But they face intense challenges to this goal, where their limited resources are spread across vast, diverse landscapes that are increasingly threatened by human and climate change pressures.

Esri's ArcGIS technology is used around the world by hundreds of thousands of organizations to deliver management outcomes. ArcGIS can be readily used by organizations to enable efficient protected area management. Through a dedicated research and development effort of protected area organization practices, Esri has designed and built a set of ArcGIS Solutions for Protected Area Management.

The Ecology, Infrastructure, Outreach, and Protection Solutions serve the needs of common functions and roles employed by leading African protected area organizations. They enable secure, scalable, and easily deployed workflows for wildlife monitoring, maintaining infrastructure, engaging with communities, and conducting law enforcement patrols.

This document will guide you through deployment of your ArcGIS Solutions for Protected Area Management. It is intended as a reference for the staff members who will be responsible for supporting the use of the Solutions in their organization. It is complemented with extensive Esri technology documentation and tutorials that are referenced throughout. The aim is to enable quick deployment of the Solutions, and to provide a reference for continuous learning, maintenance, and scaling.

Each Solution provides a suite of integrated tools for field data collection, automated data management, situational awareness, and advanced spatial analysis and reporting capabilities that are commonly used in protected areas. ArcGIS offers a secure, hosted, and commercially maintained platform realized through decades of geographic information science and software research and development led by Esri.

The Solutions are templates that can be used immediately, and they can be continuously adapted to meet specific and changing needs. Esri maintains the software capabilities of the Solutions, and each Protected Area organization retains all data ownership, full control of access, and any new Solutions it creates.

To begin, let’s explore an example from Tanzania National Parks (TANAPA). TANAPA created an ArcGIS Story Map for each of its national parks to interactively describe and communicate with visitors about what they can see and do during a visit to a national park in Tanzania.

- **Explore a Story Map** to preview a visit to Serengeti National Park. Story Maps offer interactive map and multimedia experiences for visitors who may want to preview and plan their visit to one of Tanzania’s world-famous parks. [5 minutes]

2. Activate your organization

The first deployment step is to activate the ArcGIS Online subscription for your organization and make some choices in your organizational settings.

ArcGIS Solutions for Protected Area Management are deployed with ArcGIS Online, a cloud-based mapping and analytics software that you can access via a website and other mobile and desktop apps.

When you are provided with your subscription details from Esri Customer Service via email, you can set up a customized experience that makes sense for your organization. For example, you'll give rangers a set of permissions that will enable them to collect field data during their patrols, while park tourism managers will receive a separate set of permissions to communicate park visitor information to the public. You'll set the security and sharing policies, assign privileges and credits to members based on the work they do, and configure your home page and gallery to reflect your brand. These steps will help your staff familiarize themselves with the Solutions and prevent them from sharing information inappropriately.

Main components

A subscription to ArcGIS Online includes the following:

Home page — Your home page will be the first impression people have of your site. Include an appealing banner and your own logo, feature your best maps and apps, and provide descriptions, links, or resources to help visitors get the most out of your site.

Groups — Groups are a way to organize your members and content around specific projects, workflows, and initiatives. You can set up groups to allow access to specific items based on your organization's structure.

Members — Add new users to ArcGIS Online by inviting them to join or adding them directly. You can add members in bulk or one at a time. You can set up their accounts for them, let them create their own accounts, or use your existing enterprise single sign-on login system.

Content — ArcGIS Online includes everything you need to create layers, maps, and apps. It also provides tools to effectively store, categorize, edit, and share what you've created.

Learn how to activate your subscription.

Getting started

You'll need to decide three things when you set up ArcGIS Online:

A name for your ArcGIS Online site — The organization name is what appears in the banner on the home page. You should choose a distinct and accurate name that represents your organization or the purpose of your ArcGIS Online site.

A short name — The short names appear in the URL link to your ArcGIS Online site (for example, sample-org-name.maps.arcgis.com). Carefully consider the name you want to use. You can change it later, but you may need to manually update the URLs of some of your content.

Administrative contact — Consider having a few administrators as points of contact. These administrators and their email addresses are listed in automatic emails sent from ArcGIS Online when members request password resets, help with their user names, modifications to their accounts, or any issues related to the allocation of credits to their accounts. Contacts also get email notifications about the subscription.

3. Set up your home page

You'll configure ArcGIS Online to meet your organization's needs. For example, you can specify whether members can search for and share content outside the organization. Some configuration is done as part of the subscription activation—for example, setting up your organization's URL. As you get started, focus on the appearance of your home page and the security settings of the site.

Customize the appearance

Think about your brand and how to best represent it on your site. Here are a few recommendations for creating an effective home page:

- Make your home page professional looking and well organized. Use a custom banner and your organization logo and provide information about the purpose of your site.
- Showcase your best maps and apps as featured content on your home page.

Learn how to set up your home page.

Security controls

ArcGIS Online is a secure, reliable, and flexible site. You can configure the privacy and security controls that make sense for your organization. For example, you can configure the password policy, including the password length, complexity, and history requirements. You can choose to allow members to share content outside your organization or only allow sharing within the organization. You can also set up enterprise logins and multifactor authentication.

Esri recommends that you allow access to ArcGIS Online, data, and all other assets through HTTPS only. This level of encryption helps protect your information.

Learn how to set up your security policies.

You can also review ArcGIS Trust Center for additional details about security, privacy, and compliance.

4. Create groups

Groups are a way to organize staff in your organization into teams so that you can share the appropriate content with them. For sensitive internal collaboration and information, you can create groups that are only visible to your organization with membership controlled by invitation only. Or, to share information products with the public, you can create open, public groups.

Groups are essential to providing staff with the appropriate access to the ArcGIS Solutions for Protected Area Management for Ecology, Infrastructure, Outreach, and Protection. For example, administrators can share law enforcement information and apps to the appropriate Protection staff group in the organization.

The ArcGIS Solutions for Protected Area Management rely on the following template groups. Create these groups in your Protected Area Management organization:

- **Administration**
    - Members of this group will publish and maintain Protected Area Management Solutions content.
    - When creating this group, choose the following settings:
        - **Who can view this group?** Only group members
        - **Who can join this group?** Only those invited by a group manager
        - **What items in the group can its members update?** All items
    - Enable **Delete Protection** on the group **Settings** tab.
    - Add a thumbnail and group description, such as Members of this group maintain Protected Area Management Solutions content.
      Note: You'll invite members to this group in section 5.

- **Ecology**
    - Members of this group will access, collect, or analyze wildlife information, for example, park ecologists, wildlife biologists, veterinarians, and rangers who monitor wildlife while on patrol.
    - Choose the following group settings:
        - **Who can view this group?** Only group members
        - **Who can join this group?** Only those invited by a group manager
        - **What items in the group can its members update?** All items

- Add a thumbnail and description, such as Members of this group maintain Protected Area Management Solutions for Ecology activities.
- Enable **Delete Protection** on the group **Settings** tab.
  Note: You'll invite members to this group in section 7.

- **Infrastructure**
  - Members of this group will access, collect, or monitor infrastructure information, for example, public works managers and maintenance and construction crew members.
  - Choose the following group settings:
    - **Who can view this group?** Only group members
    - **Who can join this group?** Only those invited by a group manager
    - **What items in the group can its members update?** All items
  - Add a thumbnail and description, such as Members of this group maintain Protected Area Management Solutions for Infrastructure activities.
  - Enable **Delete Protection** on the group **Settings** tab.
    Note: You'll invite members to this group in section 7.

- **Outreach**
  - Members of this group will access, collect, or analyze community information, for example, community program managers, human and wildlife conflict liaisons, and community program liaisons.
  - Choose the following group settings:
    - **Who can view this group?** Only group members
    - **Who can join this group?** Only those invited by a group manager
    - **What items in the group can its members update?** All items
  - Add a thumbnail and description, such as Members of this group maintain Protected Area Management Solutions for Outreach activities.
  - Enable **Delete Protection** on the group **Settings** tab.
    Note: You'll invite members to this group in section 7.

- **Protection**
  - Members of this group will access, collect, or analyze community information, for example, community program managers, human and wildlife conflict liaisons, and community program liaisons.
  - Choose the following group settings:
    - **Who can view this group?** Only group members
    - **Who can join this group?** Only those invited by a group manager
    - **What items in the group can its members update?** All items

- Add a thumbnail and description, such as Members of this group maintain Protected Area Management Solutions for Protection activities.
- Enable **Delete Protection** on the group **Settings** tab.
  Note: You'll invite members to this group in section 7.

Learn how to create groups.

5. Add members

ArcGIS Online has a flexible system for adding members, called named users, to your organization. You can add individual members one by one automatically or with an email invitation. Or if you have a large group of users you can upload a file and add all members at once. You can also enable enterprise logins to require ArcGIS Online to provide access to staff using their existing organizational credentials.

As part of the invitation process, you can also designate user types, roles, permissions, and group membership.

Protected area organizations should have at least two staff members designated as Administrators. These staff members will be able to support each other in maintenance of the Solutions and support other users. Since Administrators have access to all information, the designated staff members must fully understand the sharing and content ownership capabilities of ArcGIS Online. Once staff members are identified and accounts are created, add these users to the Administrator group.

Learn how to add members.

Best practices

Below are some best practices for adding members, either individually or in a batch using a CSV file. Most can be done as part of the invitation process. Note that when adding multiple users from a spreadsheet, it's easiest to give them all the same permissions.

- **Assign user types**. User types determine the privileges and apps you can give members. There are a variety of user types to match the way your team works. You should assign user types based on the members' needs and requirements. For example, Creators have access to all the capabilities in ArcGIS Online and most of the apps, while Viewers can only view items that are shared with them and have access to a small set of apps.
    - Protected Area Management named users who will collect or analyze data should be given Creator user types, for example, the staff members who will collect data in the field or prepare reports.
    - Named users who will view Dashboards may be assigned Viewer user types. User types can be changed at any time.
    - Learn more about user types.
- **Select roles**. Consider the privileges each member needs. You assign privileges through a default or custom role. You can also create custom roles based on the specific privileges you want that role to have. Every subscription must have at least one administrator.
    - Protected Area Management named users who will collect or analyze data should be given a Publisher role.
    - Named users who will view Dashboards may be assigned a Viewer role.
    - Learn how to configure custom roles.
- **Automatically add members to groups**. Specify the groups you want members to join. Members are added automatically without needing to request membership or accept an invitation.
    - Named users can be assigned to the appropriate Protected Area Management Solution groups as part of their account creation.
    - Learn how to add members to groups.

- **Allocate a credit budget**. You can manage member credit usage by setting a specified number of credits that the member can use for transaction-based services and tools such as geoenrichment and spatial analysis. Learn how to allocate credit budgets.

- **Configure enterprise logins**. If your organization uses a single sign-on system, enable enterprise logins. This allows members to sign in to ArcGIS Online with the same credentials they use in their enterprise system. Learn how to configure enterprise logins.

- **Configure user profiles.** When users first log in, they'll be prompted to enter a new password as well as some profile information. Depending on your organization's preferences, users can enter thumbnails, biographies, contact information, etc. Unless the user is a designated public information official, they should set their profile to be visible only within the organization. Learn more about user profiles

6. Create content for ArcGIS Solutions for Protected Area Management content

ArcGIS Online includes everything you need to create layers, maps, and apps that enable work and decision-making. The ArcGIS Solutions for Protected Area Management have been configured using these same capabilities.

This section of the guide focuses on creating map content for the Solutions. Content is categorized as Basemaps, Reference layers, and Operational layers. ArcGIS Online includes the following content used in the Solutions:

- Basemaps
    - Imagery, Topographic, Open Street Map, and Cartographic basemaps are hosted and maintained by Esri.
- Living Atlas layers
    - A variety of global, regional, and local layers are curated and maintained by Esri and other authoritative data providers.
    - Many layers available in the Living Atlas can provide additional context to your Solution maps and apps.

ArcGIS Online can also host organizational content that you can use in the Solutions. For example, you may have GIS data layers that can provide the most accurate roads, waterways and waterbodies, park infrastructure such as ranger posts or tourist facilities, and field data collected using other methods. This data is described here as reference layers. It is not required for the Solutions, but if available, this data can be added to your organization and used in the Solution tools.

- Reference layers
    - Your organization may have GIS data or other location information that you can publish and use in your Protected Area Management Solutions.
    - These layers may provide the most accurate, current, or local reference layers for your users.

Learn how to upload content to your organization.

Each Solution has an operational layer. These layers aggregate data collected in the field and automatically synchronize that data to any app that has access to that layer.

- Operational layers

- Field observations are collected using digital forms provided with each Solution.
- Field staff status and tracks are collected automatically and synchronized in near-real-time for situational awareness.
- Observations and tracking are synchronized in near-real-time between field and office when network connectivity is available.

Operational layers provide the only template data structure for the Protected Area Management Solutions. Deployment of the templates is described in section 7.

In general, when creating content, you should consider how the layer, map, or app will be used and optimize it for the best member experience. The tips below describe the many ways to do this.

For example, you can refine layers with the appropriate symbology, transparency, scale visibility, and labels; configure pop-ups in your maps; and create multiple views of your feature layers with different filters and editing properties applied.

It is important to complete the content Item details so that it is easy to find and use. Designate items as authoritative when you want to promote them as reliable and boost them in search results. Set up content categories for your organization and groups so the content is easy to discover.

Tips

- Creating a map is as simple as combining a basemap with your data. You can apply smart defaults to quickly style the map. Learn how to create maps.

- ArcGIS Online includes a wide variety of templates and widgets to help you create focused web apps. Learn how to create apps.

- You can choose from several templates to create layers for use in your maps and apps to collect data. Learn how to create feature layers.

- When you save or add your content to ArcGIS Online, it’s stored as an item in My Content, where you can search all your items or browse by filters such as item type and date. Learn how to add items.

- All content has an associated item page to provide additional details. You can also modify item settings and access more options to interact with the item. Learn how to use item pages.

- You can use content categories to organize group content and content across your organization. Learn how to set up content categories.
- Once you've added content, you can share it with groups, the organization, or everyone. Learn how to share content.
- If your map is picked up by social media and is viewed by thousands or millions of users at once, you'll want the map to load as quickly as possible. Learn how to optimize maps for high demand.

7. Configure ArcGIS Solutions for Protected Area Management

The ArcGIS Solutions for Protected Area Management are designed to support common activities and workflows. They enable easy, secure field data collection, automatic data organization, and connected decision-support apps. Each Solution includes a set of ArcGIS tools. This section provides a summary of each tool and links to additional product documentation and tutorials that provide step-by-step configuration details, when available.

As you proceed through configuration of the tools, you will enable each Solution in your organization. Following configuration, you will share the tools to the appropriate groups, and update membership of the group to provide access.

Ecology

The Ecology Solution is designed to enable wildlife management activities, including collection of species observations in the field, and analyzing and reporting of wildlife trends.

Wildlife field staff, such as ***rangers, ecologists, or veterinarians***, use the digital Wildlife Observation form to collect species observations with smartphones. The forms capture observation details, location, and photos. The form app enables real-time submission of observations when connected, or storage of the observations until a connection is available.

Wildlife managers can use the Wildlife Analysis and Reporting app to access all species observations collected to date, filter by geography and attribute, perform advanced spatial analysis, and create reports of trends. Analysis can be run any time, and results are stored and available for use in other maps and apps.

Configuring the Ecology Solution

The Ecology Solution use **Survey123 for ArcGIS** and **Web AppBuilder for ArcGIS**.

Survey123 is used to author and publish the Wildlife Observation template form, and to collect observations using a smartphone while in the field. Web AppBuilder is used to visualize the wildlife observations and enable access, query, analysis, and reporting on the observation data being collected over time.

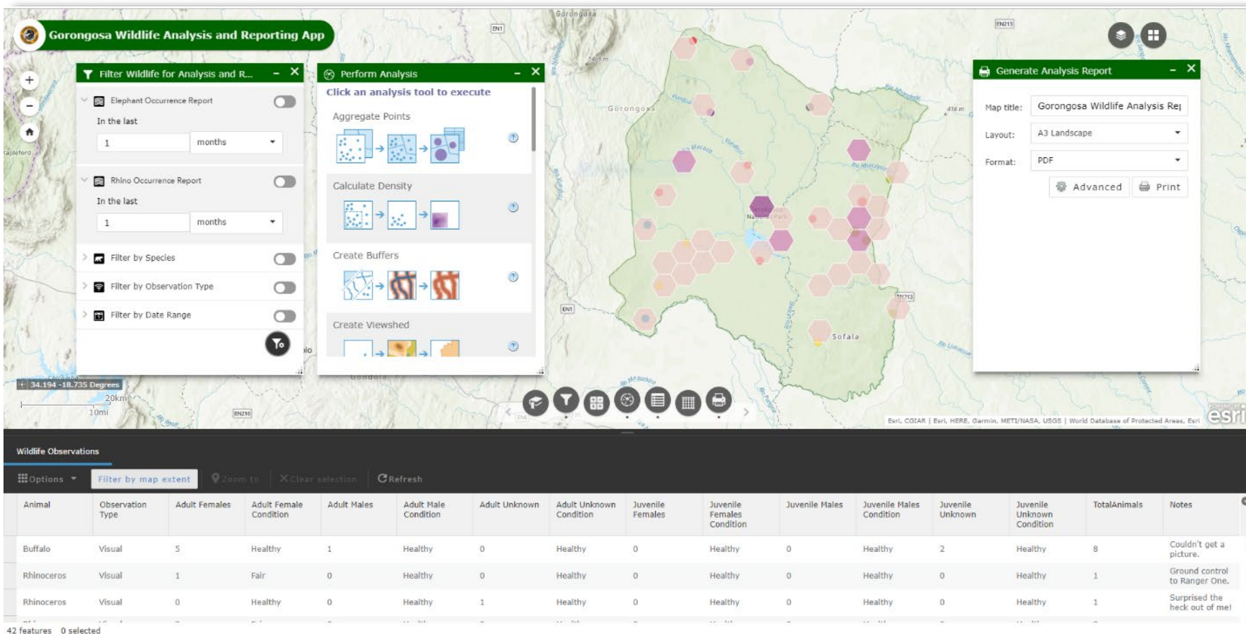
Begin configuration of the Ecology Solution by enabling your Wildlife Observation field data collection with Survey123. Survey123 includes Survey123 Connect, a *desktop app* for form creation and publishing, and a smartphone *mobile app* for form-based field data collection. You will need a good Internet connection to complete this process, but not to collect observations while in the field later.

- Download and install your Survey123 apps.
  - Survey123 Connect for your computer.
  - Survey123 for ArcGIS to your smartphone.
  - Learn how to download and install Survey123 Connect
- Using Survey123 Connect, do the following:
  - Locate the provided Wildlife Observation template form.
  - Review the form and make any necessary edits.
  - Save then Publish the form using your designated Ecology Publisher user account.
  - Learn how to publish your Wildlife Observation Survey123 Form
  - Learn how to modify your Wildlife Observation Survey123 Form
- Log in to ArcGIS Online using the same account.
  - Confirm the form and hosted feature layer have been created in My Content.
  - Update the form and layer Item description details.
  - Enable **Delete Protection** on the item **Settings** tab.
  - Learn how to create a complete item description
- Log in to Survey123 on your smartphone.
  - Download your survey and test the Wildlife Observation form in the app.
  - Learn how to download and install Survey123 for ArcGIS on your device
  - Learn how to download your form and collect observations

Next, you will configure a web map that will power your Web AppBuilder Wildlife Analysis and Reporting tool.

- Log in to ArcGIS Online using your Ecology publisher account.
- In **My Content**, navigate to the item description of the Wildlife Observation form hosted feature layer and open the layer in a Map Viewer.
    - Provide a web map name, summary, and tags such as *Ecology* and *Wildlife.* Enable **Delete Protection** on the item **Settings** tab.
    - Learn how to create a complete item description
- In the Map Viewer, you will save basemap, layer, and web map settings.
    - Choose your preferred basemap for your web map.
        - Topographic is recommended to start.
    - Edit the Wildlife Observations layer name, symbology, and pop-ups.
        - You can return to edit these at any time.
    - Zoom the web map to your area of interest.
        - Add any bookmarks necessary.
    - Save your changes.
    - Learn how to set web map configuration settings
- **Share** your web map as a new application, using Web AppBuilder for ArcGIS.
- In the Web AppBuilder for ArcGIS app builder, set the app theme and widget settings.
    - Choose the **Launchpad Theme** and preferred app **Style** and **Layout**.
    - Accept the default web **Map** settings.
    - Add the following **Widgets** in the upper right menu:
        - Layers
        - Basemap Gallery
    - Add the following widgets in the lower menu:
        - Bookmarks
        - Filter
            - Set any filters that may be repeated often by users and enable users to create custom filters.
        - Summary
            - Set count sums for the gender and age attributes.
        - Spatial Analysis
            - Include all that may be useful for analysis and reporting.
        - Attribute Table
            - Enable wildlife data to be viewed and choose whether to enable export or editing from the table.
        - Grid Overlay
            - Enable if needed.
        - Print
    - Save as you make each selection.

- Launch your application as you work to review how your settings will appear to your users.
- Learn how to configure Web AppBuilder



You have now enabled the Ecology Solution in your organization. Next, log in to the Survey123 app on your smartphone and test the wildlife observation form. Note any changes required in the form. Return to the office, connect the device to Wi-Fi and synchronize all data collected. Then log in to ArcGIS Online and open your Wildlife Analysis and Reporting Web App. Confirm that your observations appear in the map, and test that each widget can access the new features and produce the expected outputs.

To deploy the Ecology Solution to your organization, you can now share the Wildlife Analysis and Reporting App to the Ecology group. You will be asked to update sharing for the underlying web map and layers — accept the recommended sharing updates.

Now add Ecology members to the Ecology group. Test the complete workflow again by using a member account on a smartphone that will be provided to the field user and in ArcGIS Online. This will confirm that users have the correct user type, role, and group access that they need to collect and report on wildlife observations.

Next, you may want to provide a demonstration to key Ecology staff members to show the new capabilities and collect initial feedback. They may want to take time to review and test the tools themselves. Offer to provide them with the smartphones and training they may require you to evaluate the Solution. Discuss ongoing support so they know that you or one of their staff will be able to maintain the tools moving forward.

Establish a schedule of meetings to collect ongoing feedback from field staff using the form, from analysts using the web app, and for communicating about changes that may come when devices, forms, or apps require updates.

Ecology staff members often modify the Wildlife Observation form to include their key species of management concern, or to enable collection of invasive species observations.

Next, we'll repeat this deployment process for the Protection Solution, which includes two additional ArcGIS tools — Workforce for ArcGIS and Operations Dashboard for ArcGIS.

Protection

The Protection Solution is designed to enable law enforcement activities, including collection of incident information in the field, managing of patrol mandates, monitoring active patrols and incidents in near real time, and analyzing and reporting on incident trends.

Section rangers use a workforce web app to create patrol mandates and task teams or individuals and track their status and location.

Rangers use smartphone apps to accept mandates in the field, and use the digital form to collect informant tips, evidence of illegal activity, and poaching incident reports. The forms capture incident details, location, and photos, and will store observations if the smartphone is disconnected.

Law enforcement managers and control room operators use the Protection Operations Dashboard to monitor in near real time the location of rangers and any incidents that are reported.

The ***protection analyst*** uses the Protection Analysis and Reporting App to access all incidents and ranger tracks collected to date, filter by geography and attribute, perform advanced spatial analysis, and create report outputs. Analysis can be run any time, and results are stored and available for use in other maps and apps.

Configuring the Protection Solution

The Protection Solution uses **Survey123 for ArcGIS** and **Web AppBuilder for ArcGIS**. **Workforce for ArcGIS** and **Operations Dashboard for ArcGIS** are also used to meet the needs of additional Protection roles.

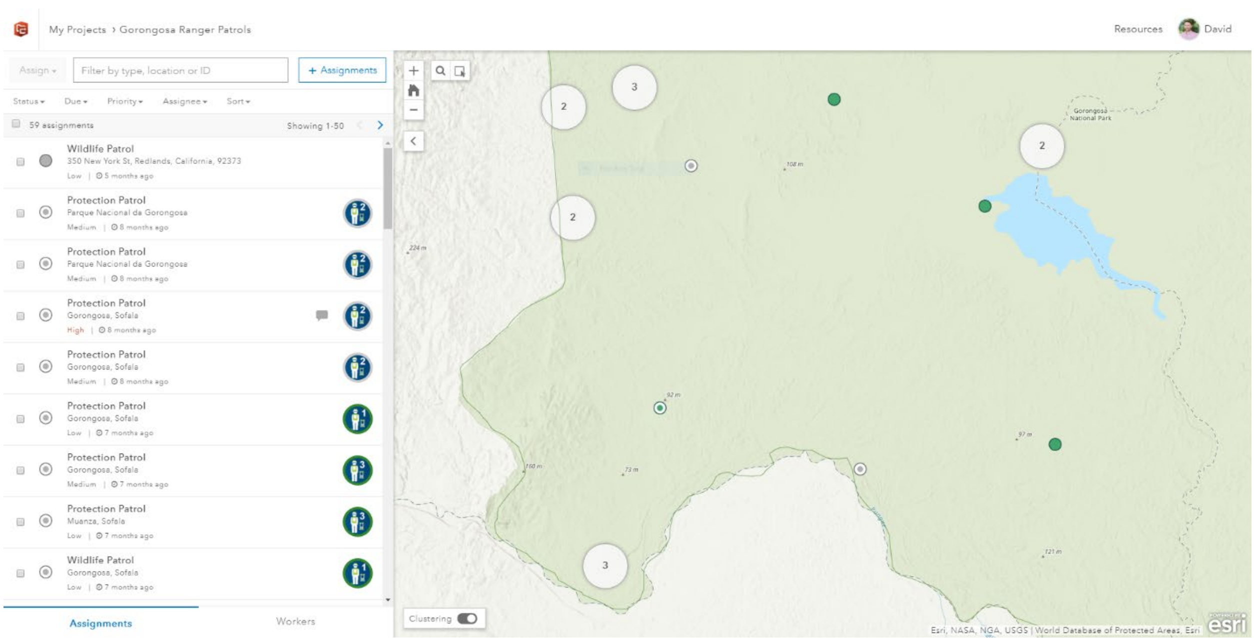
As in the Ecology Solution, Survey123 is used to author and publish the Protection Incidents template form, and to collect observations using a smartphone while in the field. Web AppBuilder is used to visualize the Protection incidents and enable access, query, analysis, and reporting on the data being collected over time. Repeat the steps provided in the Ecology section above to publish the Survey123 Protection form to your organization and configure a Protection Analysis and Reporting App using Web AppBuilder.

Next, we'll configure **Workforce for ArcGIS** to enable assignment and tracking of your ranger force.

- Log in to ArcGIS Online as an Administrator and review the user types, roles, and profile settings of the section rangers who will be charge of creating patrol assignments or mandates for rangers.
    - Each account should be a Creator user type with a Publisher role.
    - Create any new users with a password provided, if needed.
    - Add the members who are rangers and will be assigned patrols, using a Creator type with a Publisher role, including passwords.
    - Set the visibility of each user Profile to Organization.
    - Sign out of ArcGIS Online.
- Sign in as a Section Ranger and open the App Launcher and select Workforce for ArcGIS.
    - Create a project for Protection Rangers.
        - Create the Assignment Types.
            - Wildlife and Protection Patrols can be set at this time.
            - Assignment types can be changed or added later.
        - Add the Dispatcher and Mobile workers.
            - Dispatchers are Section Rangers; Mobile workers are Rangers.
        - Set the Dispatcher and Mobile worker maps.
            - Choose an appropriate basemap and add reference layers, such as ranger posts or park section boundaries, if desired.
            - Set the map extent.
        - In Advanced settings, do the following:
            - Associate the appropriate Survey123 form to the appropriate assignment type (patrol).
            - Enable Tracking so that you can see Ranger locations while they are connected and Save.
    - Open the Protection Rangers Workforce project and create several assignments for rangers.
    - Exit Workforce for ArcGIS and sign out of ArcGIS Online.
- On your Ranger smartphone, open the app store and download and install Workforce for ArcGIS and Survey123 for ArcGIS.
    - Log in to the Workforce for ArcGIS smartphone app using an account of one of the rangers who was given a new assignment in the Workforce web app project.
    - Confirm that you can accept an assignment, open the associated Survey123 form, and complete an assignment. You must be connected to interact with assignments, but not to complete a Survey123 form after it is downloaded to the smartphone.

- Using a Section Ranger account (Dispatcher), log in to ArcGIS Online and confirm that the ranger assignment update has synchronized. You may also see the ranger tracks in the map if enabled.

When the Protection Workforce project is created, and tracking is enabled, new hosted feature layers will be created in the project owner's **My Content**. These layers can be added to the web map used for the Protection Analysis and Reporting App. If added, these layers can provide protection analysts with the assignment locations, near-real-time ranger locations, and ranger tracks. These layers can then be used in analysis and reports.

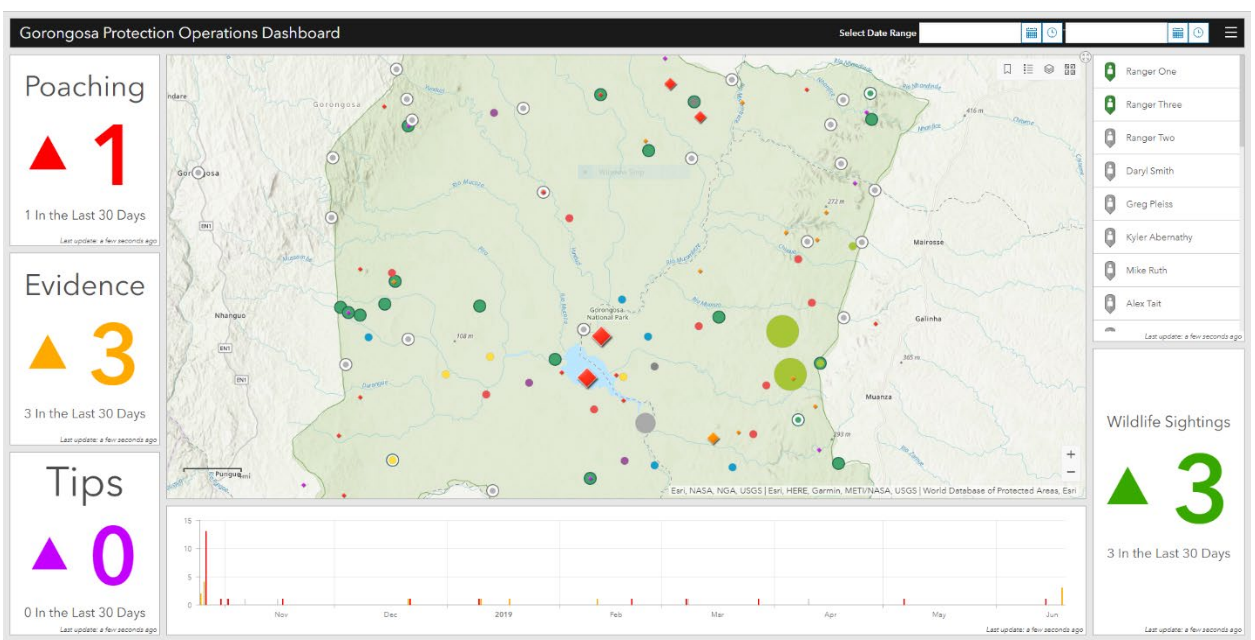


Learn how to configure Workforce for ArcGIS projects

The Head of Enforcement and Control Room operators in a protected area depend on a variety of relevant information being available to support decision-making. **Operations Dashboard for ArcGIS** is used in the Protection Solution to provide near-real-time situational awareness for law enforcement managers by summarizing the most recent incidents and ranger activities in a single app.

- Log in to ArcGIS Online as the designated Protection publisher.
    - Add the members who will view the Protection Operations Dashboard.
    - Use a Viewer user type, in the Viewer role.
    - Create the users with a password provided.

    - If there are several managers, create an account for each individual, and give them the same account settings.
- Create a web map for an Operations Dashboard.
    - Open the Protection Analysis and Reporting app web map and **Save As** a new web map.
        - This web map will serve a new Operations Dashboard app for the Head of Enforcement or Control Room.
    - If not done previously, add the Workforce assignment, worker, and tracking layers.
    - Adjust any web map basemap, extent, and bookmarks, and layer symbology, filters, or pop-ups.
    - **Save**, then **Share**, and select Operations Dashboard.
- In the new Operations Dashboard configuration, do the following:
    - Set the map, indicator, chart, and other elements to suit your Head of Enforcement/Control Room staff decision-making information needs.
    - Save, then share the new Operations Dashboard to the Protection group.
        - Accept any recommended sharing updates required.
    - Sign out of ArcGIS Online.
- Log in to ArcGIS Online using the Head of Enforcement or Control Room user accounts. Test that you can access the Operations Dashboard but not edit any elements. Sign out.
- Log in to ArcGIS Online using an Ecology user account. Confirm that you cannot see any of the Protection group content.



You have now enabled the Protection Solution in your organization. It is important to log in as each of the solution roles to confirm the correct access to forms and web apps, and that in that role you can perform the necessary task of creating an assignment, accepting an assignment, completing a form, analyzing protection data, or monitoring law enforcement activities.

Next, you may want to provide a demonstration to key Protection staff members to show the new capabilities and collect initial feedback. They may want to take time to review and test the Solution themselves. Offer to provide them with the smartphones and training that they may require to evaluate the tools. Discuss ongoing support so they know that you or one of their staff will be able to maintain the tools moving forward.

Establish a schedule of meetings to collect ongoing feedback from Protection staff and for communicating about changes that may come when devices, forms, or apps require updates. Ensure that Protection management and staff understand the security enabled through their user accounts, and that they should never share their user names or passwords.

Infrastructure

The Infrastructure Solution is designed to enable asset management activities, including collection of asset information in the field, managing of maintenance crews, monitoring productivity in near real-time, and visualizing the location and condition of assets.

Workforce managers use a workforce web app to create asset data collection assignments and track their status and location.

Maintenance crews use smartphone apps to accept assignments in the field and use the digital form to collect asset information. The forms capture asset details, location, and photos, and will store observations if the smartphone is disconnected.

The ***Infrastructure manager*** uses the Asset Operations Dashboard to monitor in near real time the location of crews and monitor their progress on work assignments.

The ***Planner*** uses the Infrastructure Asset Viewer App to access all asset information collected to date, filter by geography and attribute, and create report outputs.

Configuring the Infrastructure Solution

The Infrastructure Solution tools use **Survey123 for ArcGIS**, **Web AppBuilder for ArcGIS, Workforce for ArcGIS,** and **Operations Dashboard for ArcGIS**. Use the steps above to configure the Infrastructure Solution tools to suit your organizational needs.

Outreach

The Outreach Solution is designed to enable community engagement activities, including collection of human and wildlife conflict information in the field, monitoring of those incidents in near real-time, and communication with protected area stakeholders and visitors about the resources and activities under management.

Community liaisons use a smartphone app with digital forms to collect human and wildlife conflict incident details, location, and photos from people living near the protected area. The app will store surveys if the smartphone is disconnected.

The ***Outreach Coordinator*** and control room operators use the Human and Wildlife Conflict Operations Dashboard to monitor in near-real-time any incidents that are reported.

The ***communications staff*** use Story Map apps to share information with public audiences about the features and activities available in their protected area. In addition to interactive maps, the app can include descriptions, photos, and video features and can be embedded in web pages for easy access in a web browser.

Configuring the Outreach Solution

The Outreach Solution tools use **Survey123 for ArcGIS, Story Maps for ArcGIS,** and **Operations Dashboard for ArcGIS**. Use the steps above to configure the Outreach Solution tools.

Protected Area organizations often modify or create new community outreach forms. In addition to human and wildlife conflict, protected areas engage communities in a variety of ways, such as establishing living fences, honey production, and environmental education programs.

Story Maps often include multimedia content and are intended for public audiences. Configuring a Story Map should include marketing and communication staff to advise on the content that is included with the interactive maps.

Learn how to configure a Story Map

8. Learn more

As an administrator, you're responsible for setting up ArcGIS Online. It's equally important to maintain members, items, and groups to keep your organization uncluttered and up to date. The resources in this section can help you with these maintenance tasks. They also help you learn more about ArcGIS Online.

Monitor your organizational activity

Access activity-based metrics and real-time usage reports to help monitor content and members. Item reports illustrate how users are creating, using, and sharing geographic content. Member reports reveal how users are contributing to ArcGIS Online. Group reports provide a sense of active collaborations across and within organizations. Learn how to use activity reports.

Credit usage

ArcGIS Online is a paid subscription service. Esri assigns each subscription service credits that act as currency. You use credits when using certain content, analytical functions, and data storage. You can enable credit budgeting to manage credits for transaction-based services and tools, such as spatial analysis. Assign a flexible allocation of credits to some or all organization members or set a default allocation for new members. Learn more about credit usage.

Additional resources

- ArcGIS Online help is a key resource for learning how to use the software in general and to perform specific tasks. It also includes best practices for organization maintenance, what's new, troubleshooting, and FAQ.
- The Learn ArcGIS gallery has a collection of lessons, articles, Story Maps, and videos that help you learn about ArcGIS. It also includes paths of related resources about a specific topic such as administration.
- Esri Training includes web courses, training seminars, lessons, and videos to help you learn more about managing an ArcGIS Online organization.
- The GIS community, including Esri, shares thousands of ready-to-use authoritative datasets in ArcGIS Living Atlas of the World. Living Atlas covers everything from

historical census data to environmental conditions derived from live sensor networks and earth observations.

- ArcGIS API for Python can help you expedite and maintain administrative tasks. For example, use the API to set up the folder structure in My Content. You can also use it to update URLs for service or app items.

- ArcGIS Marketplace includes solutions from Esri partners to help with administrative tasks.

- Get the latest information on service availability from ArcGIS Online Status.

FAQ

Can I try ArcGIS Online before purchasing a subscription?

Yes. If you don't have an account yet, you can join the Learn ArcGIS organization for a free 60-day membership. Getting a Learn account is an easy way to explore mapping and analysis, but your content is deleted after 60 days and you won't be able to configure the organization. To try setting up and configuring ArcGIS Online, you can get a free trial. With a trial, you act as the administrator.

Can I add more members or credits at any time?

Yes. ArcGIS Online subscriptions have the flexibility to grow with your organization. You can add more members or credits at any time.

How can I provide feedback about this guide?

Please send us an email to arcgis-guides-feedback@esri.com.

Where can I get answers to more questions?

Esri has created a private GeoNet group where ArcGIS Solutions for Protected Area Management organizations can interact with each other in forums. Esri and organizations regularly post blogs and updates to the guide here as well.

Read the ArcGIS Online FAQ, explore GeoNet discussions, or contact Esri.

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