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ArcGIS Solutions for Conservation Implementation Guide

Enabling Protected Area Managers with Esri technology
for Monitoring Wildlife, Law Enforcement, and Managing
Human and Wildlife Conflict



Task checklist

TASK	COMPLETE
1. Welcome to the ArcGIS Solutions for Conservation	<input type="checkbox"/>
2. Activate your ArcGIS Online organization	<input type="checkbox"/>
3. Set up your home page	<input type="checkbox"/>
4. Deploy the ArcGIS Solutions for Conservation	<input type="checkbox"/>
5. Implementing the Solutions	<input type="checkbox"/>
6. Addition resources	<input type="checkbox"/>

1. Welcome to the ArcGIS Solutions for Conservation

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 development 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 deployed by organizations to enable holistic 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 Conservation to enable key management activities and outcomes.

The Ecology, Protection, and Outreach Solutions serve the needs of common functions and roles employed by leading protected area organizations. They enable secure, scalable, and easily deployed workflows for wildlife monitoring, conducting law enforcement patrols, and engaging with communities. Additional Solutions are also in development by Esri and conservation organizations.

This document will guide you through deployment of your ArcGIS Solutions for Conservation. 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. Our aim is to enable quick deployment of the Solutions, and to provide a reference for continuous learning, maintenance, and scaling. ArcGIS offers a secure, hosted, globally available and commercially maintained geospatial technology platform realized through decades of geographic information science and software research and development led by Esri.

Each Solution provides a suite of integrated tools for field data collection, automated data management, situational awareness, advanced spatial analysis, visualization and reporting capabilities that are commonly used in protected areas. It's a selected list of capabilities, with many more included that have not covered in depth in this guide.

The Solutions are templates that can be used immediately. They can also 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 Solution workflow that it creates.

To begin, let's explore the Esri resources available to protected area organizations around the world:

- **Esri's Protected Area Management Initiative:** Esri's longstanding commitment to Conservation includes [this latest initiative](#) to serve protected area organizations with the Solutions, software grants, and support. [5 minutes]
- **Learn more about the ArcGIS Solutions for Conservation:** Esri's Solutions for Conservation are described in several online formats, [including an overview](#), and in [documentation](#). You can also try out the apps live in these Solutions product resources. [20 minutes]
- **Apply for the Protected Area Management Conservation Grant:** The Solutions are deployed using Esri's ArcGIS Online hosted software. Any protected area organization can [apply for the ArcGIS Online software](#) through Esri's Conservation Grant program. [20 minutes]
- **Join the ArcGIS Solutions for Conservation Community:** Esri enables users to interact with each other and staff through GeoNet, an online community of practitioners. [Join the ArcGIS Solutions for Protected Area Management group](#) to connect with other practitioners and Esri staff and updates. [5 minutes]

The following Sections will now guide you through the process of deploying your ArcGIS Solutions for Conservation.

2. Activate your ArcGIS Online organization

ArcGIS Solutions for Conservation 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.

The first deployment step is to receive your ArcGIS Online software subscription (web site) from Esri, then activate ArcGIS Online for your organization, and finally to make some choices in your organizational settings to suit your preferences.

When you are provided with your subscription details from Esri Customer Service via email, you can set up a customized end user experience that makes sense for your organization before you deploy the Solutions. You'll set the security and sharing policies, assign privileges to members based on the work they do, and configure your home page to reflect your organizational brand. These steps will help your staff familiarize themselves with the Solutions and prevent them from sharing information inappropriately. This section guides you through this activation step.

ArcGIS Online Main components

An ArcGIS Online organization includes the following:

Home page: Your home page may be the first experience that people have with your Solutions. On the home page you can include an appealing banner and your logo, feature your best maps and apps, and provide descriptions, links, or resources to help users get the most out of your site.

Members: Knowing the identity of your users ensures secure access. You'll add new users to ArcGIS Online by invitation or in bulk, as needed. You can set up their accounts for them, let them create their own accounts, or use your existing enterprise single sign-on login system.

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

Content: ArcGIS Online includes everything you need to create layers, maps, and apps. It also provides tools to effectively store, categorize, edit, analyze, visualize, and share what you've created. **The ArcGIS Solutions for Conservation are content items that you will load to your organization and share with your members.**

Getting started

You'll need to decide three things when you activate ArcGIS Online for your organization:

A name for your ArcGIS Online organization: The organization name 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, <https://protectedareas.maps.arcgis.com>). Carefully consider the name you want to use.

Note: Esri recommends that you use the primary name or abbreviation of your organization name for the short name to align with your existing web content.

Administrator contacts: An administrator has full control over all members and content in your ArcGIS Online organization. They will be responsible for providing access and privileges for all members, initially for deploying the Solutions, and then for supporting users with knowledge transfer. They will also be the point of contact for Esri communications.

Note: Esri recommends having two administrators, so that more than one person can provide support to users. Limit the number of staff who are administrators in order to limit the number of people who can access all organizational information and capabilities.

With your new ArcGIS Online organization activated, you can begin deploying the ArcGIS Solutions for Conservation.

[Learn how to activate your ArcGIS Online organization.](#)

3. Set up your home page

ArcGIS Online offers many ways to customize the appearance and security settings to suit your needs. The appearance settings enable you to apply your own color schemes and images (branding) to help make your ArcGIS Online organization more consistent with your web content and be familiar to your staff. The security settings enable you to apply appropriate access to members of your organization. In this section you'll update these settings.

Customize your home page appearance

You can customize the appearance of your ArcGIS Online home page by adding images, text, and features that best represent your organization. Here are a few recommendations for creating an effective home page:

Make your home page professional looking and well organized. Use a custom banner (photo) and your organization logo and provide a brief description of the purpose of your site.

Showcase your most important maps and apps as featured content on your home page, to help your members find the content they use most.

[Learn how to configure your home page](#)

Customize security controls

ArcGIS Online provides many privacy and security controls that you can apply to all members and content, as well as to items, groups, and members.

It is important to apply the security settings that make sense for your entire organization, such as requiring passwords, limits for sharing content publicly, and enabling encryption.

[Learn how to configure your security policies](#)

Configure your organizational map

You can set the default extent of all maps in your ArcGIS Online organization so that when you deploy the Solutions and create new maps and apps they will be automatically zoomed to your protected area or areas of interest.

Note: Esri recommends that you set a default map extent to include your protected area, or to include your network of protected areas. Individual maps and apps can have different map extents as needed. This default setting is helpful for both administrators and users as they work with the Solutions in ArcGIS Online.

[Learn how to configure your organizational map](#)

Additional organizational settings can be made. Use these resources to explore the capabilities that you can enable and limit in your organization.

[Get started with ArcGIS Online](#)

[Get started with ArcGIS Online administration](#)

4. Deploy the ArcGIS Solutions for Conservation

The ArcGIS Solutions for Conservation are a collection of maps and apps that you can load to your ArcGIS Online organization to enable wildlife monitoring, conduct law enforcement activities, and manage human and wildlife conflict in support of protected area management.

Deployment of the Solutions is now automated using the Solutions App in the ArcGIS Online App Launcher. The Solutions can also be configured manually, however this approach is not covered in this guide. This approach can be used to design and build new maps and apps and create your own solutions for your organization.

There are three Solutions for Protected Area Management that can be deployed to your ArcGIS Online organization automatically.

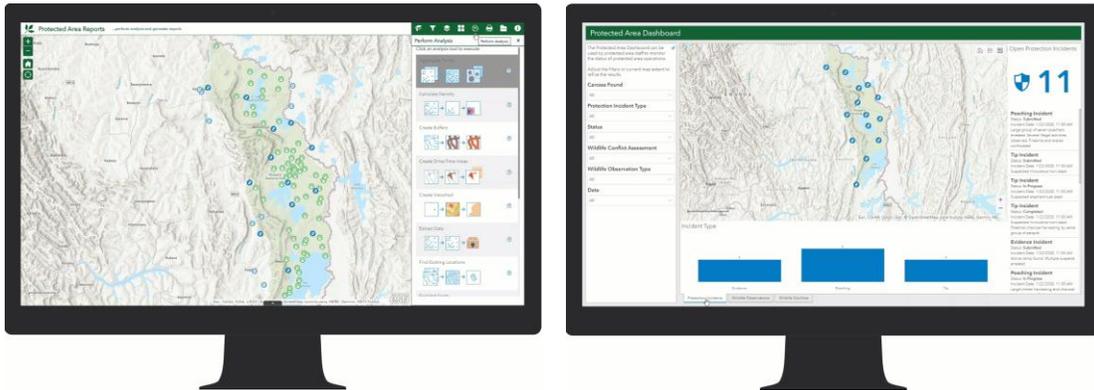
- Wildlife Management Solution for Ecology departments
- Protection Operations Solution for Law Enforcement departments
- Conservation Outreach Solution for Community departments

[Learn more about the Solutions App in the ArcGIS Online App Launcher](#)

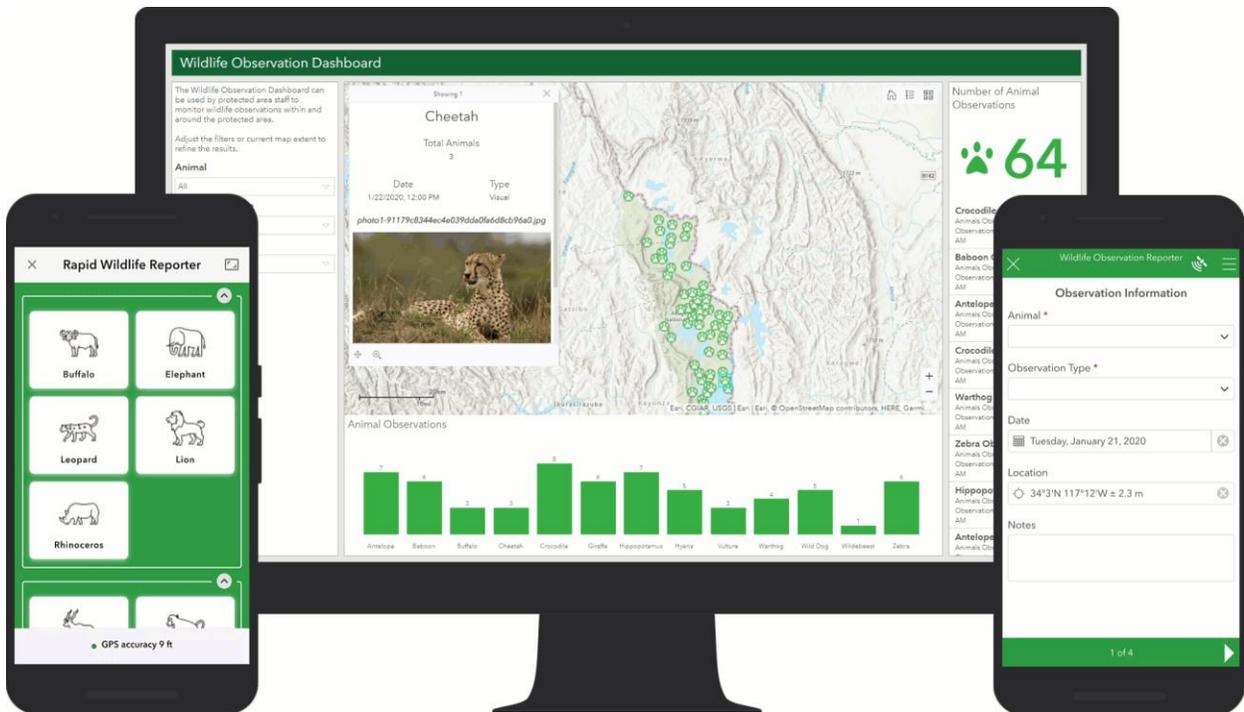
You can deploy the Solutions individually or as a complete collection. The Solutions are maintained and documented by Esri, and after they are deployed you can customize them. You can repeat Solution deployment as often as you'd like in order to use these templates for multiple groups of users.

The following section provides views of the Solution apps and links to live versions that you can interact with.

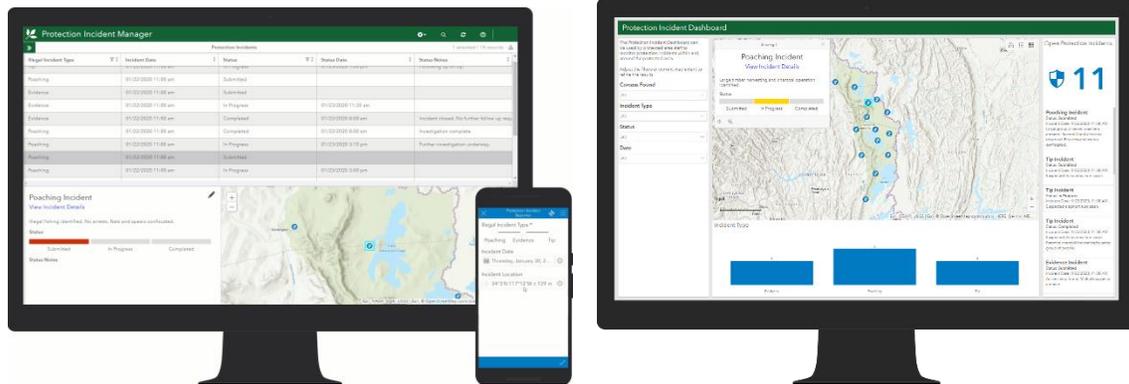
Learn more about all of the ArcGIS Solutions for Conservation shown below



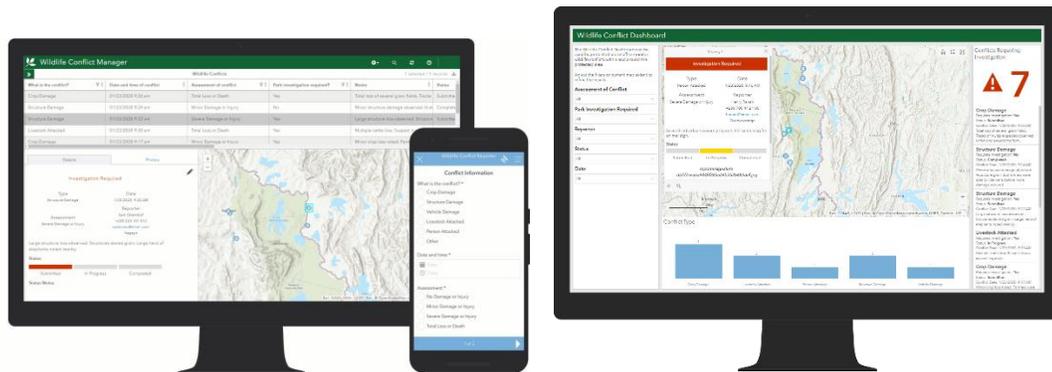
Learn more about the Wildlife Management Solution shown below



Learn more about the Protection Operations Solution shown below



Learn more about the Conservation Outreach Solution shown below



You can also manually configure the Solutions using ArcGIS Online capabilities. Manual configuration enables you to create custom solutions for your needs, as needed.

[Learn more about ArcGIS configurable apps](#)

[And ArcGIS app configuration documentation](#)

Deploy the Solutions to your organization

The Solutions have been designed to work together to provide Protected Area Managers with a holistic view of Ecology, Protection, and Community Outreach activities for their protected area.

Note: Esri recommends deploying all of the Solutions so that you can quickly experience the holistic information management approach that has been enabled.

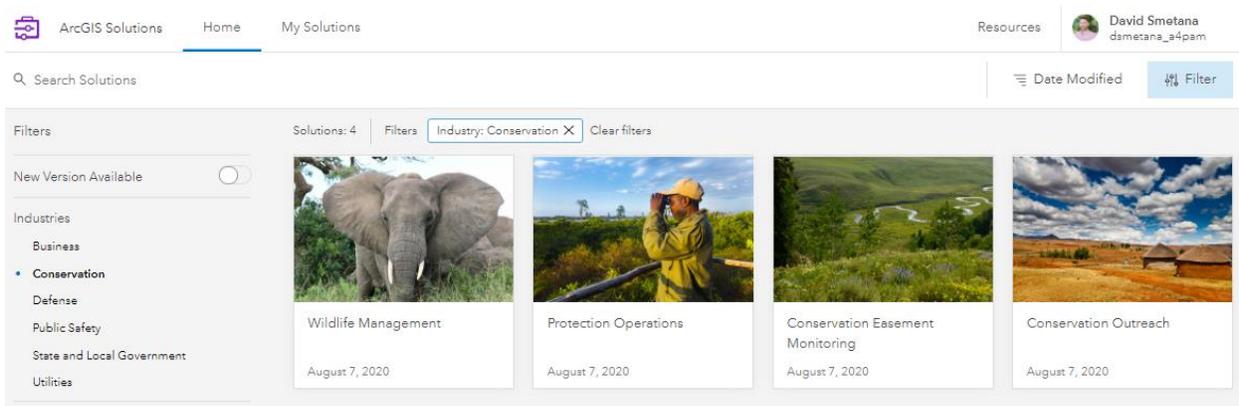
Follow these steps to automatically deploy the Solutions to your organization:

1. **Identify the member** who will deploy the Solutions. This staff member will maintain the Solution maps and apps and provide access to other members who will use the maps and apps in their work.

Note: The member must have an ArcGIS Online account that is a Creator user type with a Publisher role.

[Learn more about user types and roles](#)

2. **Login to ArcGIS Online.** Navigate to the App Launcher and open the Solutions app. In the left menu, select Conservation to limit the view to the available Conservation Solutions.



3. **Deploy the Solutions to your organization** by clicking on each Solution card and choose Get Now. This will load the Solution components to your Content.

4. **Navigate to your Content and review the Solution items now available.** When you deploy the Solutions, each of the included forms, layers, maps, and apps will be loaded to your organization. They are only visible to you until you share them with Groups of members in your organization.

Note: The ArcGIS Solutions for Conservation documentation provides a list of the items that you get when the Solutions are deployed. Esri recommends using this list to tour the Solutions in your organization.

[What you get with the Wildlife Management Solution](#)

[What you get with the Protection Operations Solution](#)

[What you get with the Conservation Outreach Solution](#)

With the Solutions deployed, you can now begin using them with staff members. Next you will enhance the Solutions with your own information and provide members with access to the apps that they will use in their work in Ecology, Protection, and Outreach.

Note: It is important to remember that the Solutions are templates and can be modified if your need to make changes in the forms, maps, or even the capabilities in the apps. You can start using them immediately, but it is helpful for your users to enhance the Solutions with information that they will recognize.

Add your own data

Many organizations have map information (GIS or other spatial or tabular data) that can be added to the Solution maps and apps. ArcGIS Online provides a large amount of spatial data for you to use, and it can also store all your spatial information and act as a central data catalogue for your organization. After you add your own data to ArcGIS Online, you can then add those data to the Solution maps and apps to enhance them with your organizational information. This enables you to incorporate historical data, data from other tools, and fully customize the Solutions for your members.

Most interactive map applications include a **basemap**, such as topography or imagery, which provide a canvas on which you can overlay each of your map layers. **Reference layers** such as boundaries, settlements, or roads and waterways, are

overlaid onto the basemap to provide relevant, consistent information in all of your maps. **Operational layers**, are the map layers that show the assets which are being actively managed, such as staff, vehicle, and animal locations, incidents of poaching or human and wildlife conflict, or facilities that need repair, etc.

ArcGIS Online includes many basemaps and reference layers that the Solutions are built with. It's likely that you will be able to find relevant layers that you can use to map your protected areas in the Solutions. It's also likely that you will have detailed local reference layers and historical operational data that you can add to the Solutions as well.

You can change this basemap in any of the Solution apps using the app editing tools included. Basemap options can be added to your Solution apps so that you can toggle between topographic or imagery for example, or you can simply change the basemap to suit your user needs.

[Learn more about basemaps](#) then look at each of your Solution apps to determine if any should provide imagery, or other basemap content to your users. You can then update the app basemaps using the app editing tools.

There are several ways to add **reference layers** to your map. The **Living Atlas of the World** included in ArcGIS Online provides a vast library of reference layers including natural, human, and real time information. You can also **upload your own GIS layers** from shp, csv, file geodatabase, and other spatial data formats. This enables you to store one boundary layer for your protected area or areas that can be added to any of your Solution maps and provide a consistent reference for all members. You can also use this feature to make historical data available in your Solutions.

You can also add content from other web sources, such as government or authoritative agencies.

[Learn more about adding layers to ArcGIS Online and your Solution maps](#)

[Learn more about the ArcGIS Living Atlas of the World](#)

[Learn more about adding content to ArcGIS Online](#)

Operational layers are those that show the key information that are managed in the Solutions, such as wildlife observations, evidence of poaching, or human and wildlife

conflict incidents. These operational layers are pre-configured in the Solutions, so you do not need to create these. You can customize them however to suit your specific information needs or add related historical data to these layers.

[Learn how to customize the wildlife observation form](#)

[Learn how to manage data in ArcGIS Online](#)

Add members

After you have enhanced your Solutions with relevant content, you will be ready to invite staff to access and use the field data collection apps, data management and analysis apps, and the operations dashboards included in the Solutions. ArcGIS Online secures all access to information through identity. In other words, each staff member or user will have their own login to ArcGIS Online. By knowing who is in your organization, you can control what information each member is able to access or create.

ArcGIS Online enables you to add members as needed, one by one, or through email invitation, or you can add entire staff membership at once. As part of the invitation process you designate the member's user type, role, and group membership. This enables you to finely control which members can generate new data, such as field rangers or biologists, and which member can access sensitive data for analysis, such as law enforcement analysts, and which members can access all information for decision making, such as park executives.

[Learn how to invite and add members](#)

After members are added, you will then add them to an ArcGIS Online group. Groups are used to create teams of staff and give them access to Solution apps that they will need to do their job. For example, the law enforcement team members can be added to a group so that they can collect incident information and share it with their managers but not with all staff. When the Solutions are loaded to ArcGIS Online, template groups are created, which you can add your members to so that they have access to that collection of Solution maps and apps. You can rename these groups, or create new ones, as needed.

[Learn how to manage groups](#)

With the Solutions deployed to your ArcGIS Online organization, the content enhanced with local and historical information, and your members provided with necessary access, you can now begin provisioning the Solutions to staff who will use them in their daily activities. This implementation process can be organic or highly structured. It's likely that some management and operational staff introduction, training, and support planning will be required. The next section provides some recommendations for this final and continuous phase of your ArcGIS Solutions for Conservation implementation.

5. Implementing the Solutions

Implementation of the Solutions with your organization is essentially a process of change. You will be introducing new tools that staff will use to do the jobs they have been doing in other ways. This will require you to plan and engage with teams in your organization to identify the staff and workflows that are ready for this change, to have management approval to move forward with the changes, and have the time and resources available to train and become proficient with the new tools. With proficiency, your management will be confident in the reliability of the tools and the ability of staff to use them.

Staff receiving the new tools will also advise you on how they perform, and you will need to be responsive to their requests to learn more, to modify the information in the apps, or modify how they are used. ArcGIS Online and the Solutions provide you with many customization options, so you will be able to make these modifications as needed. You will have to invest time in preparing the necessary computers and smart phones, training sessions and documentation, and be available to support the use of the tools over time.

Esri is continuously improving ArcGIS Online and Solution content and capabilities. This means that you will see changes appear in ArcGIS Online and Solution apps a few times a year. Esri communicates to ArcGIS Online administrators via email about upcoming changes, and also documents them and provides introductions to changes through our ArcGIS Online Resources and ArcGIS Blog. Check these regularly to understand the changes coming to the software that make up the ArcGIS Solutions for Conservation.

[Learn more about What's New in ArcGIS Online here](#)

[Learn about ArcGIS news, capabilities, events, and more here](#)

Consider the following as you plan and conduct your Solutions implementation:

1. **Review Esri Solution materials and present to your management the benefits and costs that may be realized with implementation.** Be sure that they understand the operational challenges that they address, the efficiencies gained, and the changes that will be required to current operations. With management approval, you can begin preparing for your implementation.

2. **Develop your implementation plan** with schedule, budget, and hardware and staff needs. This can be as simple or detailed as you'd like, however consider that you will need time to order devices, ensure Internet availability where needed, and plan when different teams will be trained and ready to work with the new technology. Plan how they will provide you with feedback during a pilot phase and time to make modifications before your roll out changes.
3. **Consider phasing your implementation.** By working with one team first, you can work closely with a core group of staff who will collaborate with you to make the implementation of the Solutions with their team a success. Implementation can begin with just one individual, or a small team, or a single department. You will learn valuable insight about what is required in your protected area for the Solutions and technology to be reliable enough for use in day to day operations. With these lessons learned, you can then refine your implementation plans. Be sure to keep your management informed of your implementation progress so that they can continue to provide you with executive support.
4. **Communication is a required activity in your implementation.** Throughout the implementation you must regularly communicate with your management and the staff that are adopting the Solutions so that they understand why the changes are happening, how they will benefit their work and the organization, and what support they will receive in changing how they work so that they can be confident that they will be successful. If at any point in your implementation this is in doubt, pause, listen, and communicate more.
5. **Remember that your implementation will be continuous.** Your use of the Solutions will evolve over time and you will introduce new tools and practices as you and your organization learn the benefits and costs of the technology. You must be ready to continuously evaluate whether the tools and workflows that you have deployed are working for each staff involved. By continuously monitoring and evaluating the technology, you will proactively avoid challenges and continue to realize benefits and understand true costs.

There are many consulting resources available to help you in your implementation. Esri also provides technical support for the Solutions, and [a GeoNet community of users](#) with whom you can ask questions and receive support.

Additional resources

The ArcGIS Solutions for Conservation are built with Esri's ArcGIS Online capabilities and apps. Each of these are extensively documented. Here are additional resources for each of the software products used in the Solutions.

- [ArcGIS Online documentation](#) is the best 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](#), [troubleshoot](#), and [FAQ](#).
- The [Learn ArcGIS gallery](#) includes a collection of lessons, articles, Story Maps, and videos that help you learn about ArcGIS. It will soon include [learning paths](#) specific to the ArcGIS Solutions for Conservation.
- You can evaluate the security and privacy controls that are included with ArcGIS Online at <https://trust.arcgis.com/en/>