ACCESSIBILITY@IOWA

Accessible Document Practices in Adobe Acrobat Pro

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Adobe Acrobat lets you create documents in Portable Document Format (PDF) from a variety of sources. Acrobat PDFs are easy to distribute, and remain faithful to the design and layout of the original.

Here are a few tips and tricks to help you provide more accessible PDF documents for your students and others.

Accessible Instructional Materials: PDF

PDF (Portable Document Format) is a popular and commonly-used format for the delivery of visually formatted documents, typically intended for printing.

PDF documents may be created in one of several ways, and may contain text, images, and other kinds of common document objects. Depending on the content and construction of a PDF, it may pose significant accessibility barriers to some users, including users of assistive technology.

Potential PDF Accessibility Barriers

Scanned PDF
A scanned PDF contains no tags, structure, or other information to provide content or context to AT users. The scanned PDF presents a major accessibility barrier, and should not be distributed without significant remediation.

Untagged Text PDF
Untagged text PDFs include content that may be exposed to assistive technology, but that lacks structure, semantics, or order. Untagged PDFs must be tagged and checked for content order before distribution.

PDF with Images
PDFs may contain images that are intended to convey important information to users. These images must be accompanied by a text alternative, so that users are able to determine the purpose or function of the image.

PDF with Tables
PDFs may contain tables that are intended to convey important tabular data to users. If the table does not convey the relationship of header and data cells, or if the table is very complex, users may be unable to determine the context of a given cell or data point.

PDF lacking a Page Title
PDFs should contain a Page Title in the Document Properties, which is exposed to assistive technology when the document is opened. This information assists the user to understand the purpose of the document. If the Page Title is missing, the user may not understand the purpose of the document.

PDF with Forms
PDFs are often used to deliver forms for print or online completion. Form elements must be appropriately labeled to convey their purpose to assistive technology. If form elements are unlabeled or improperly labeled, users may be unable to determine the purpose of the form elements.

PDF with Embedded Multimedia
Embedded multimedia is likely to lack captions, keyboard operable players, and screen reader support. Multimedia embedded in PDF should be avoided altogether.

Start with Accessible Source Documents

The Portable Document Format is a destination form for documents created in a variety of source applications. In many cases, documents are created in Microsoft Word, PowerPoint, Adobe InDesign, and other authoring applications. These documents may carry accessibility features with them when they are exported to PDF.

Repurposed documents
PDFs come from a variety of sources, and not all will include accessibility features that carry forward after conversion. Also, documents that have been scanned or otherwise converted from one document format to PDF may require more remediation. In some cases, it may be best to return to the source document to add or improve features.

Make Sure PDF is the right format
You want to make sure that PDF is the right format for what you're trying to achieve. PDF forms and other interactive documents may require a higher level of development time and effort. You might consider distributing your document in a different format altogether—common alternatives to PDF include Word and HTML

PDF Accessibility Tasks

- Create PDFs from accessible source documents
- Run the Acrobat Accessibility Checker or similar assessment tool
- Check to see whether the document is scanned
- Check whether and how the document is tagged
- Check navigation, bookmarks, tab order, page order
- Check and address alternative text
- Check document properties: security, language, title
- Check tables, forms, media and other embedded objects
- Check for unwanted content and create artifacts
- Touch Up Reading Order (TURO)

Key PDF Accessibility Factors

- Machine-readable text: NOT image-only
- Logical reading order
- Semantic and structural tags, including artifacts
- Navigability: appropriately nested headings, bookmarks
- Keyboard operable: no mouse required
- ALT text for images
- Sufficient color contrast
- Document properties and security

Acrobat Accessibility Tools

Acrobat Accessibility Checker
Acrobat's accessibility checker checks up to 32 accessibility factors in your document. You can select options in four categories and view the resulting report.

Note: The first time you use Acrobat Pro's Accessibility tools, you may need to issue the command through the Tools menu (View→Tools→Accessibility). Now, the Accessibility tools are available in the Tools pane.

You can run accessibility checks using the "Full Check" command, and the results will appear in an Accessibility Checker panel for review.

Some accessibility issues can be remediated using the Make Accessible Wizard, and some can be addressed via Reading Order, Add Tags, and other tools. The most effective way to remediate an inaccessible PDF is to make changes in the source document where possible.
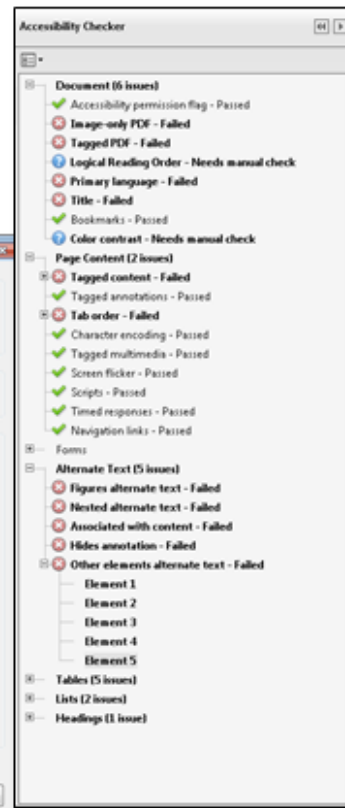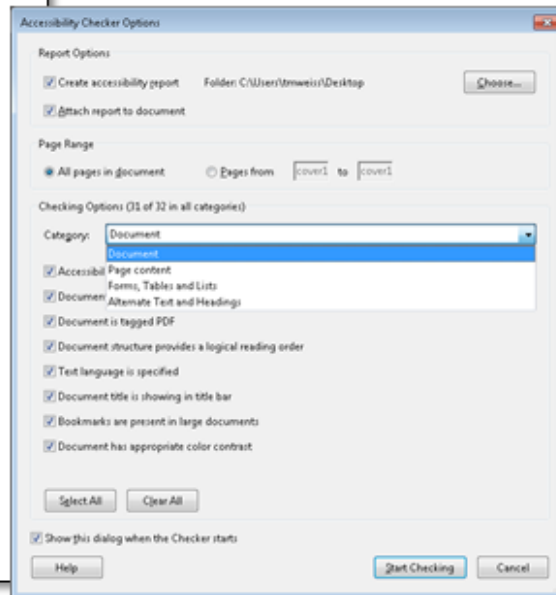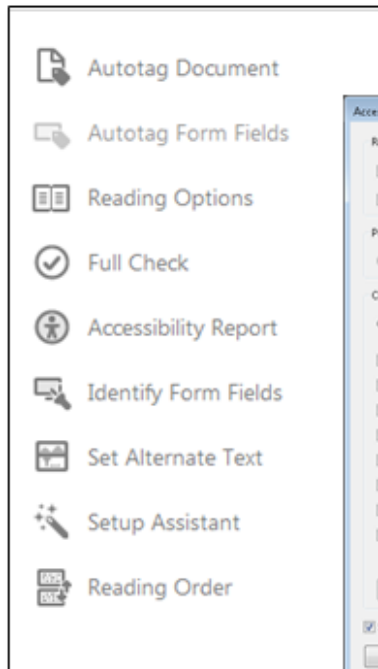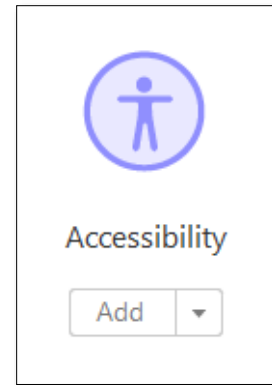
Converting Image-Only Documents to Text

Documents that have been scanned to PDF, printed to PDF, or generated through some third-party PDF makers may render as image-only files. These documents have no machine readable text, but only a flat representation of the text and other content from the original document. These documents are not searchable, they cannot be edited, the text cannot be extracted for citations or other purposes, and they cannot be read by assistive technology such as screen readers.

To make such documents more usable, you can perform Optical Character Recognition (OCR) on your document. Either the Enhance Scans toolset or the Edit PDF toolset can work for this purpose. In this tutorial, we will use the Enhance Scans toolset.

Enhance Scans
The Enhance Scans toolset lets you select a text output option, along with a few other features. The Enhance Scans toolset is located in the Acrobat Tool Center. To use the Enhance Scans/Recognize Text tool:

1. Open the Enhance Scans toolset
2. Apply any settings, including pages, language, output, and resolution
3. Press OK to run the OCR process
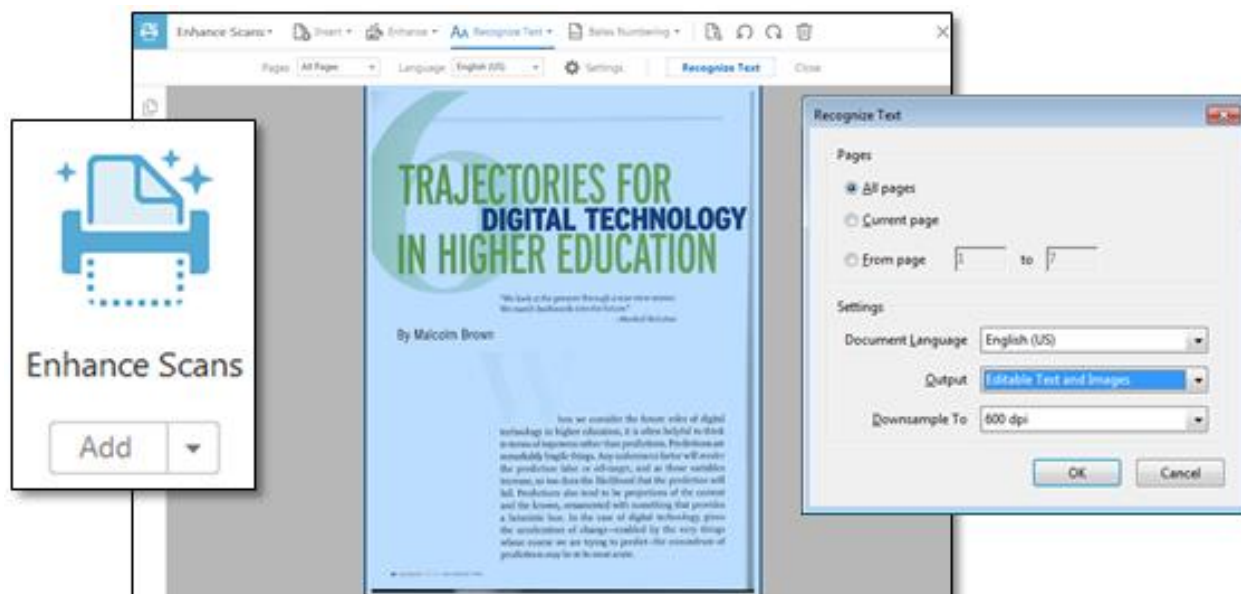
Note: performing OCR is not sufficient to claim accessibility, but it's a good and necessary start. In addition, the quality of text from this process may vary widely, depending on the quality of the original document. Be prepared to work with other aspects of the document, including tags and reading order.

Adding Tags to an Untagged Document

Tags add structure and semantic meaning to elements in your PDF, which means that users of assistive technology can more easily determine what an element does, what it means, and how it might relate to the rest of your document. Headings, paragraph markers, figure and image designations, lists, tables, and artifacts are all examples of tags.

First, you need to determine whether your document is already tagged. This information is found in the File menu, under Properties. Select the "Description" tab, and check in the "Advanced" property set.

Add Tags
If the document is not tagged, you can add tags.

- Select the "VIEW" menu
- Select "Show/Hide"
- Select "Navigation Panes", and then "Tags"
- If the "Tags" pane reads "No Tags Available":
  - Right click on the "No Tags" icon; select Add Tags to Document
  - Use the Make Accessible Wizard to add tags
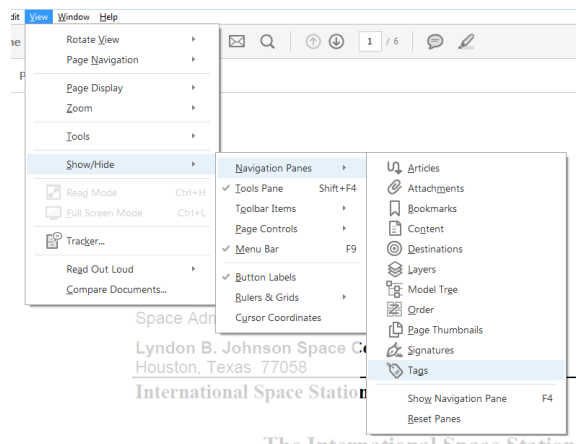
Check your Tags panel
This method places tags in your document, but you still may need to check your tags manually to make sure your document is properly structured.
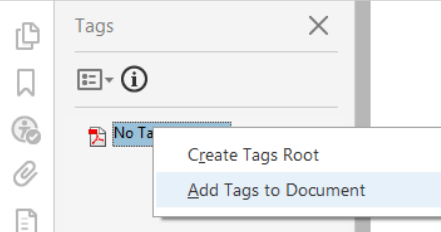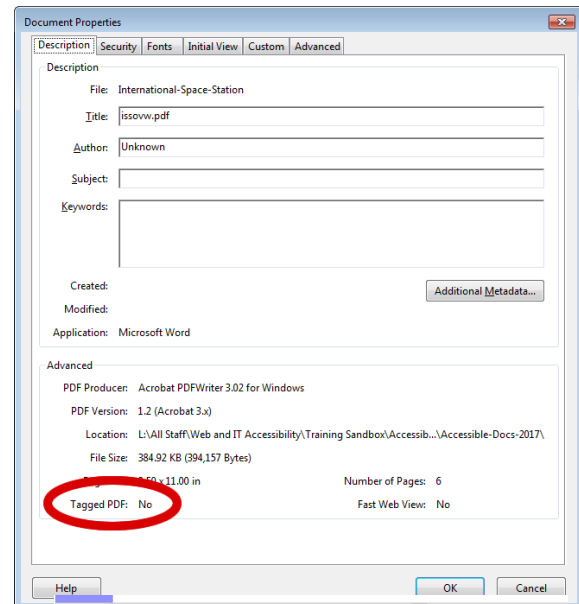
Setting Reading Order

A logical and accurate reading order is vital for the accessibility of your PDF. Even if your document is text-based and tagged, you still may need to adjust the reading order to ensure that the document is screen and machine-readable. You can use the "Touch Up Reading Order" tool to move through your document and correct any issues with reading order.

The accompanying screen shots illustrate what a document might look like after OCR and tagging. Note that the page order runs across columns, into sidebars, and splits unpredictably in ways that obscure the text order and readability of the content. "TURO" lets you manually correct reading order issues by selecting and retagging blocks of content.

The Reading Order tool is located in the Accessibility tools pane.

Touch Up Reading Order

- Select "Reading Order" from the Accessibility tools pane
- To view your document's reading order, select the "Show Order Panel" button
- If you want to start fresh with your page structure, select the "Clear Page Structure" button
- Draw a rectangle around any element you wish to update, and select the button that describe that element
- You can also right click on an order number and select a tag from the context menu
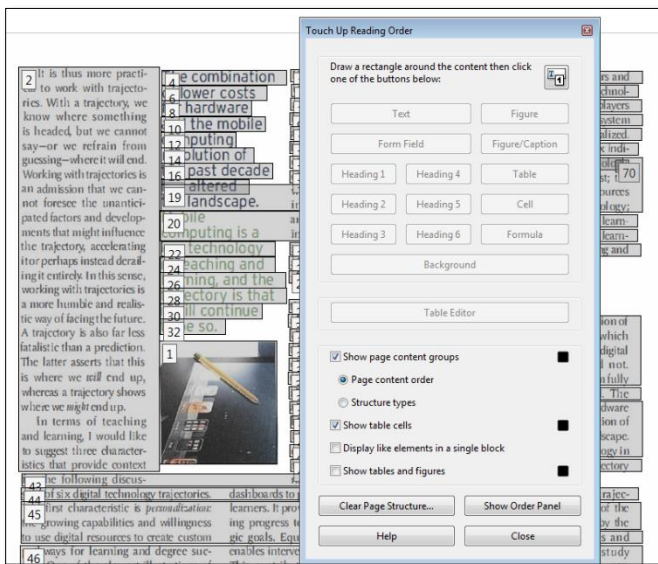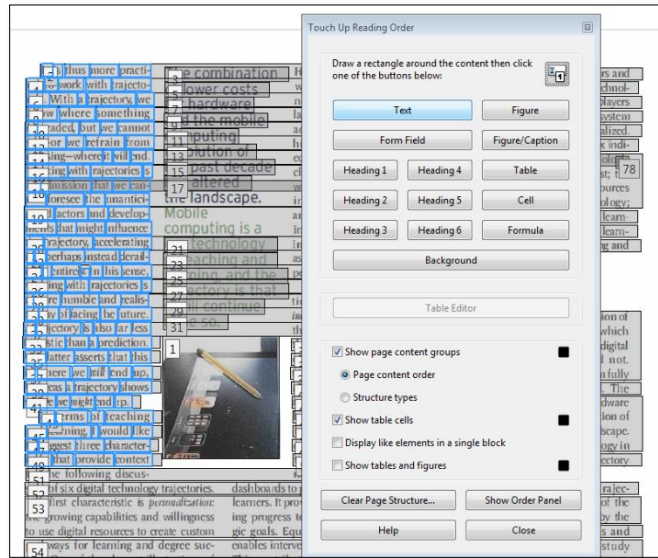
Manage Reading Order in Navigation Pane

Although your PDF document may look fine, the background data may not accurately reflect the logical reading order of the document. The Navigation Pane, and particularly the Tags panel and the Order panel, let you manage tags, reading order, and bookmarks to provide a reliable reading order for all users, including users of assistive technology.

Change reading order using the Order panel

- In the navigation panel, activate the Order pane; a reading order overlay appears on the document
- Drag and drop items in the Order pane until the document overlay reflects your intended reading order.
- In the screen shots below, note that the items in the Order panel reflect the visual page order.
- For elements that you want to exclude from the reading order, select "Background" to create an Artifact.
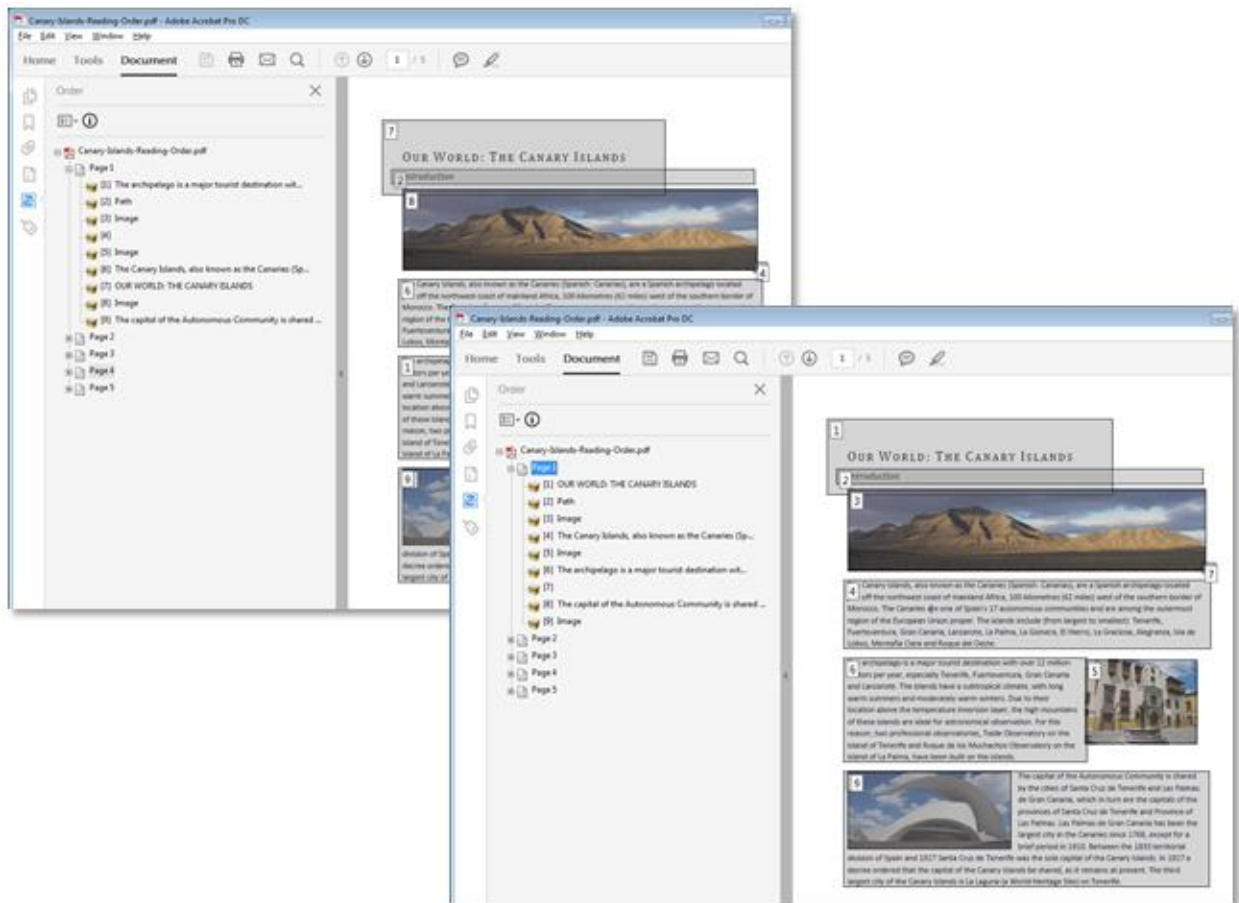
Add Headings and Other Tags

As with other document formats, you can greatly improve navigation and access in PDF by providing a logical reading order and robust semantic structure. Screen reader users are able to traverse a document effectively using headings; other users may benefit from Bookmarks navigation.

If you created your PDF from a well-developed source document, you should already have a robust heading structure in place. With the Reading Order panel, you can take advantage of up to six heading levels, and other tags
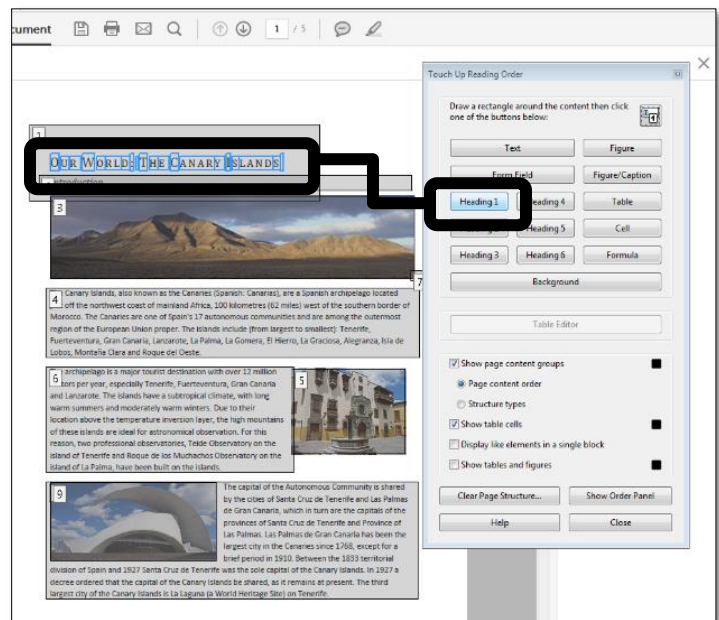
The Reading Order panel lets you view your document's reading order, and update tags for headings, figures, table structure, and other aspects of your document. You can also create artifacts to hide unwanted content from assistive technologies. After you have established the general reading order for your document, consider reviewing the document and adding structural tags where appropriate.

Artifacts

For elements that you want to exclude from the reading order, select "Background" to create an Artifact. Artifacts are elements that are removed from a document's content order and placed in the background, where they are not exposed to assistive technologies. Artifacts are particularly useful in the remediation process, as you can use them to hide indicia like page numbers, gutter shadows, decorative images, and other superfluous remnants of the original document.

Generating Bookmarks from Page Structure

One benefit of a well-structured document is that readers can quickly locate specific information by scanning the document's topic headings. Users of assistive technology are beneficiaries of well-defined document outlines, as are people who prefer to scan a table of contents or landmark list to quickly find the content they want.

Your bookmark structure is directly influenced by the markup choices you make when you add headings using the Touch Up Reading Order tool.

Generate Bookmarks from a selection
To generate a bookmark from a selection:

- Open the Bookmarks navigation pane
- Select (highlight) the text you want the bookmark to point to
- Select the Add Bookmark tool in the navigation pane (Ctrl+B)
- Enter the name of the Bookmark
- Repeat the process until you have created the bookmarks you want

Generate Bookmarks from Structure
If your document structure is consistent and robust, you may want to create a group of bookmarks all at once. To generate bookmarks from structural elements:

- Open the Bookmarks navigation pane
- In the "Options" menu, select "New Bookmarks from Structure"
- Select the element from which you want to create bookmarks
- Label your Bookmark set as desired
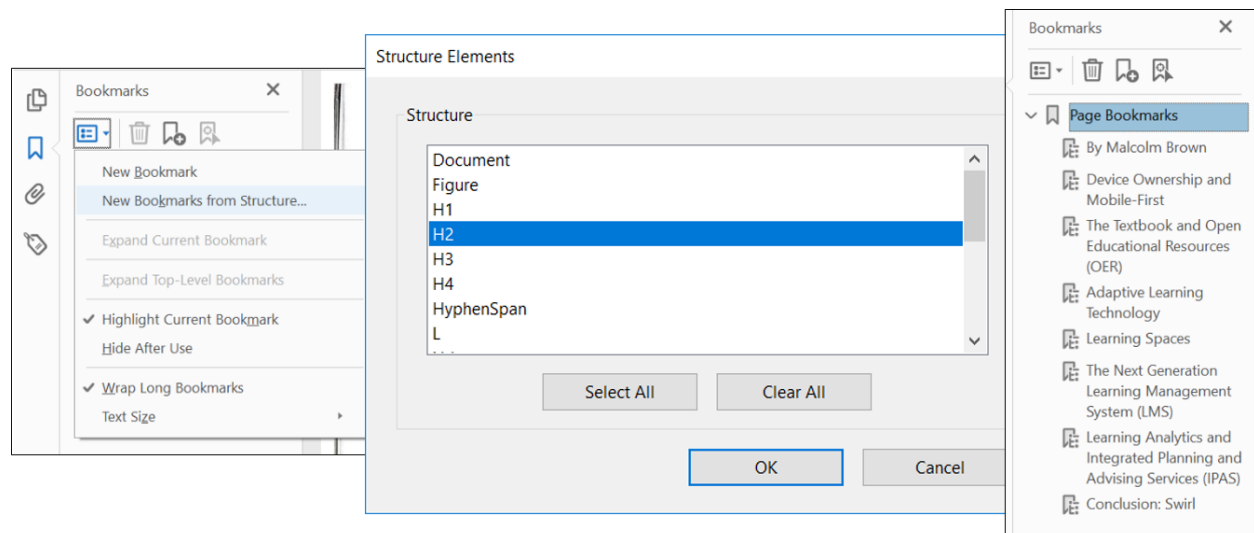
Provide Alternative Text for Figures and Images

As with other document formats, PDF permits the use of alternative text (ALT text) with embedded images and figures. Photographs, illustrations, charts and graphs, logos, and diagrams are a few examples of embedded images that rely on ALT text to convey their meaning to assistive technology.

To edit or add ALT text in Acrobat, you need to select the image (or *figure*) for which you want to provide the text.

Add ALT text from the tags tree

- Reveal the tags navigation pane (View→Show/Hide→Navigation Panes→Tags)
- In the Tags pane, locate the Figure tag for which you want to provide ALT text
- Right click on the Figure element and select properties
- Enter your ALT text for this element
- Pro tip: when the Touch Up Reading Order panel is active, you can right click on Figures and add ALT text
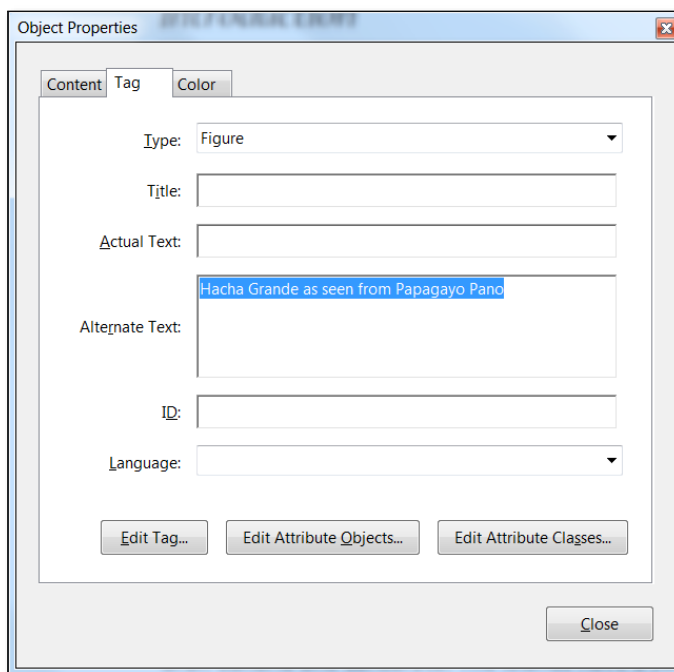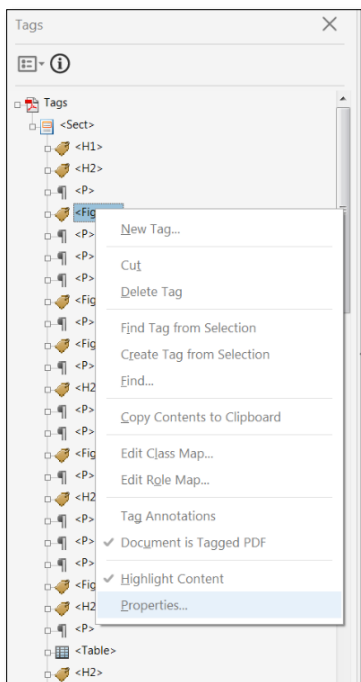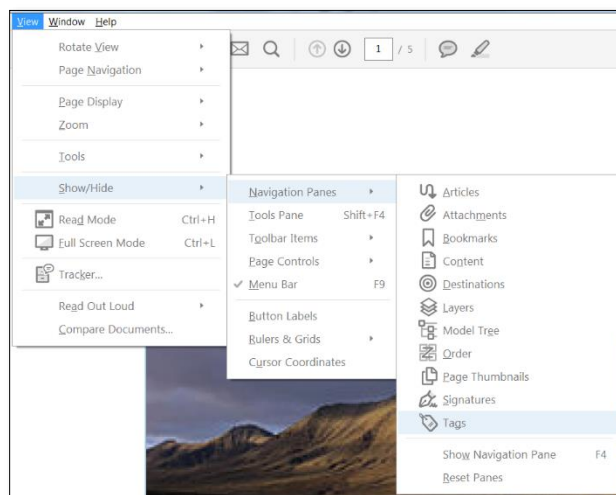
Document Properties

PDF documents include several properties that can help users remain oriented as they open and move through them.

Title: The *Title* property is announced to the user when the document is opened. A relevant and meaningful *Title* property lets the user know which document has been opened. The *Title* property is exposed to the user when the *Show* option reads "Document Title" in the Initial View tab.

Language: Defining the human language of a document lets screen readers provide correct pronunciation and inflection when rendering human languages. This property is especially important for documents that use multiple languages. The language property can be set in multiple places in Acrobat, including the *Advanced* tab in Document Properties.
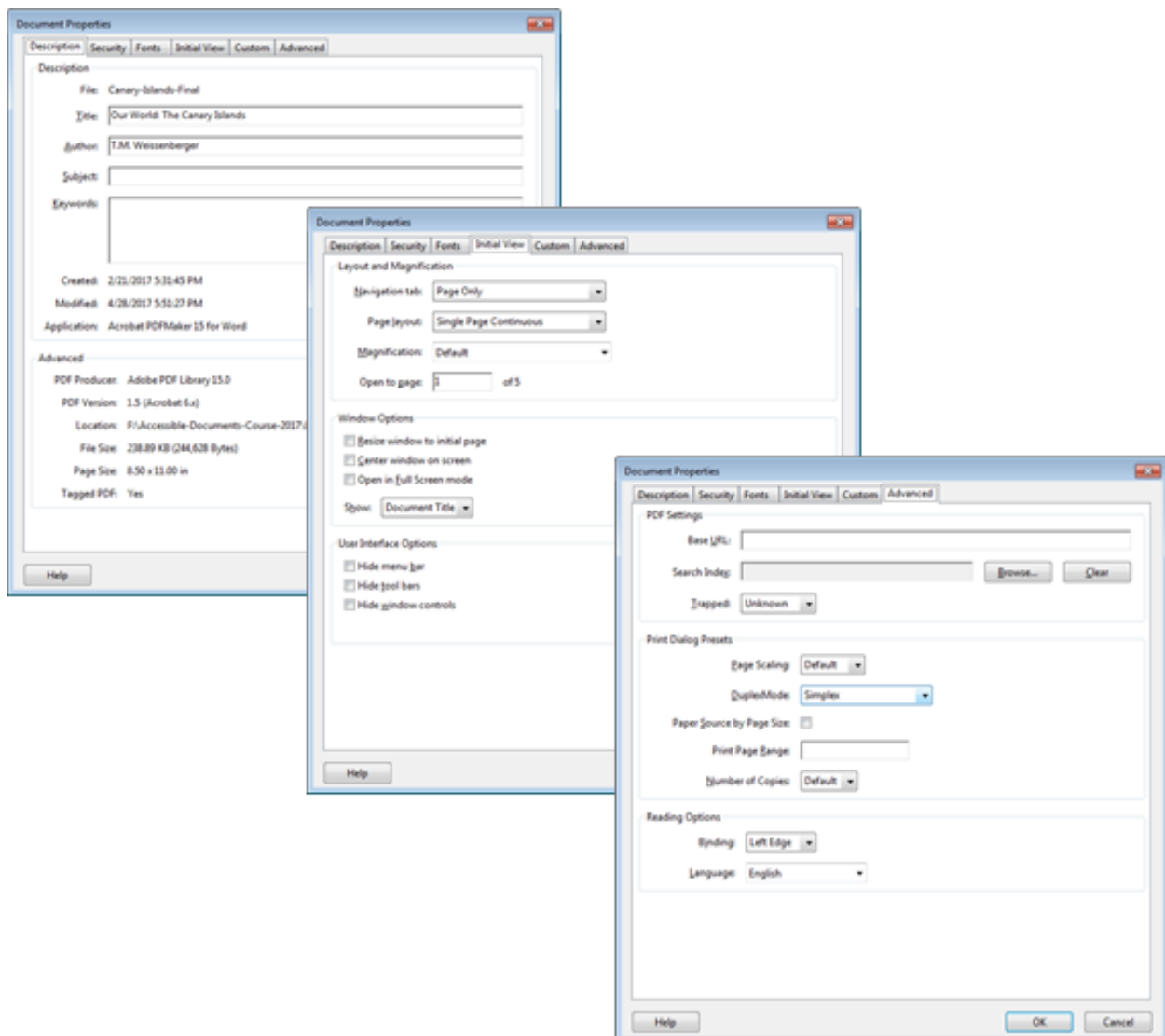
Use the Make Accessible Wizard

The Make Accessible Wizard is one of the Action Wizards available in Acrobat DC. The "Make Accessible Wizard" guides you through a series of actions that can mitigate the barriers found in some PDF documents, including many that are addressed elsewhere in this tutorial. The Wizard is a good place to start remediating an existing PDF, but you will probably still need to modify some tags manually to normalize the structure of your document.

The Make Accessible Wizard provides an automated means of adding tags and other accessibility features to your document. For best results, you should review the tags, title, and other information to make sure it meets the needs of your document and your users. Note also that the Make Accessible Wizard will overwrite any accessibility features you may have previously included in your document.

To run the Make Accessible Wizard
- From the Tools pane, select the Action Wizard
- In the Actions list, select "Make Accessible"
- For each step in the Make Accessible Wizard, provide appropriate information
- Review the information and proceed with further remediation as necessary