



**U.S. Department of the Interior  
Office of the Chief Information Officer**

# Creating Section 508 Compliant Electronic Documents

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# Section 508 of the Rehabilitation Act

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- Section 508 of the Rehabilitation Act of 1973 (29 U.S.C. 794d) applies when Federal Agencies develop, procure, maintain or use Information and Communication Technology (ICT) Section 508 requires ICT to be accessible to individuals with and without disabilities.

# Examples of ICT



Computers, Software, Firmware  
and Peripherals



Video equipment and multimedia  
products distributed on DVDs, CDs,  
video tapes or internet



Telecommunication Products  
*(telephones and faxes)*



Network Services



Information Kiosks and  
Transaction Machines



Support Services



Office Equipment  
*(copiers, fax machines, and calculators)*



Websites, E-mail, and Groupware



Social Media  
*(Facebook, Twitter, etc.)*

# Hierarchy of Section 508 Authority

- **Law**
  - Section 508 of the Rehabilitation Act (as Amended), 29 U.S.C. § 794d
- **Accessibility Standards**
  - U.S. Access Board to create and update ICT Accessibility Standards for Section 508
- **The Federal Acquisition Regulation (FAR)**
  - Law mandates Section 508 Standards clause be included in, and therefore ENFORCED through, the FAR
- **Department/Agency Policy**
  - 375 DM 8, Section 508 Program and Responsibilities
- **Guidance Documents**
  - Accessible Electronic Document Community of Practice (AED COP) Authoring and Testing Guides
  - AED COP [How-to Videos](#)

# Why is Accessibility of Electronic Documents Important?

- Some people with disabilities have ***no other way*** of interacting with people, accessing information, starting a career, getting an education, or contributing to society, other than through the web, ICT and Assistive Technology (AT).
- The Census Bureau reports that 56.7 million Americans report having a disability; that is about 20% of the total population. 59% of those age 21 to 64 who reported a disability are unemployed.
- Approximately 8.8% of DOI's workforce is disabled.
- DOI's goal is to increase hiring of disabled individuals to reach 12% of the workforce.

# Requirements for Accessible Word Documents

- **Document Formatting**

1. Descriptive Filename

- **Text Formatting**

1. Use of styles to create headings
2. Use built-in features to create lists
3. Use built-in features to organize tables
4. Unambiguous names of links

- **Object Formatting**

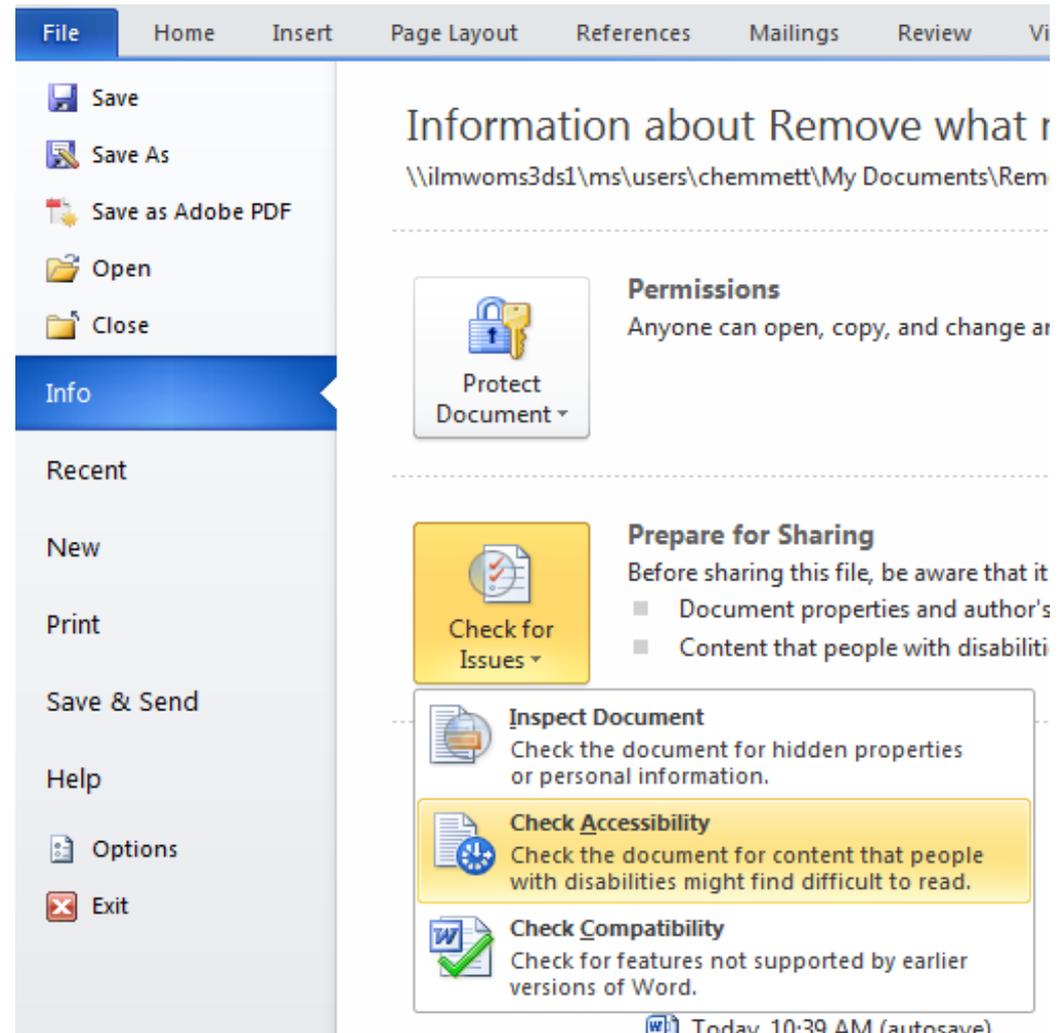
1. Duplicate vital info in headers, footers, and watermarks
2. Use built-in features to create data tables
3. Alternate text for images
4. Accessible text boxes

- **Color Formatting**

1. Use of color to convey meaning
2. Color contrast

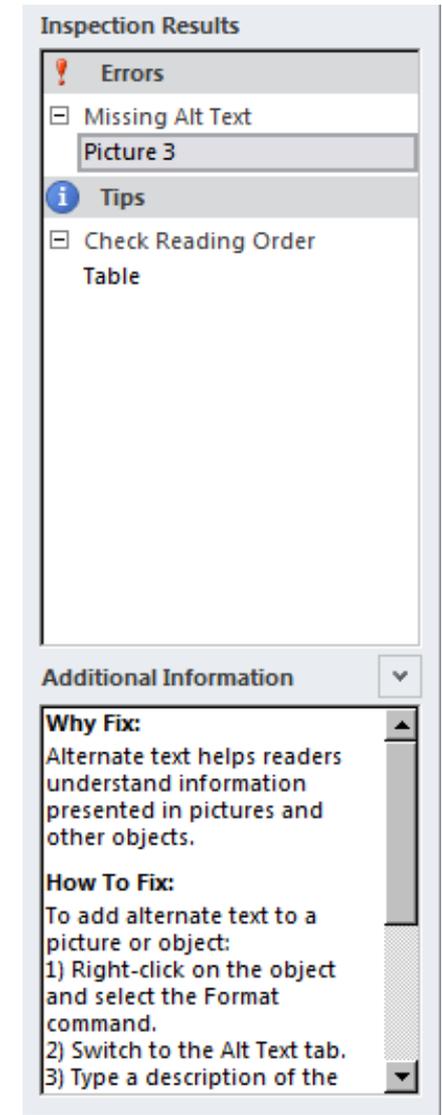
# Word Accessibility Checker

- The Word Accessibility Checker checks documents for any content that people with disabilities may find difficult to read.
- The Accessibility Checker is located in the File tab, under Info, Check for Issues



# Word Accessibility Checker Results

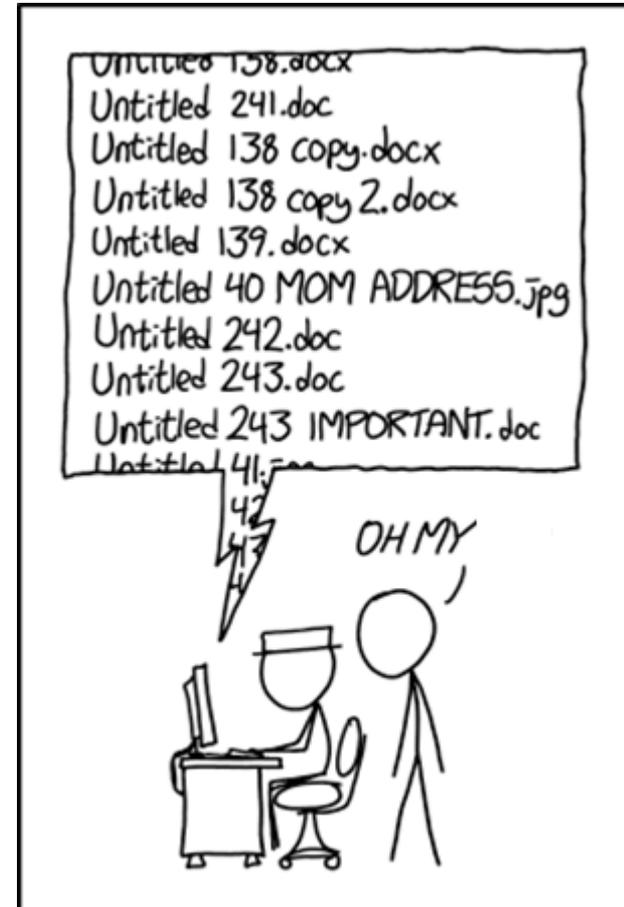
- Results of the Accessibility Check are displayed on the right side of the screen.
- The inspection results also include additional information explaining why errors should be fixed and instructions on how to fix them.



# Word Document Formatting – Descriptive Filename

- A descriptive filename identifies the document or its purpose and helps everyone locate, open and switch between documents.

Nondescriptive Filename	Descriptive Filename
Untitled1.pdf	OMB_Report_2_5_16.pdf
Document1.pdf	2015_Security_Training.pdf
Report2016.pdf	2016 Section 508 Annual Report.pdf

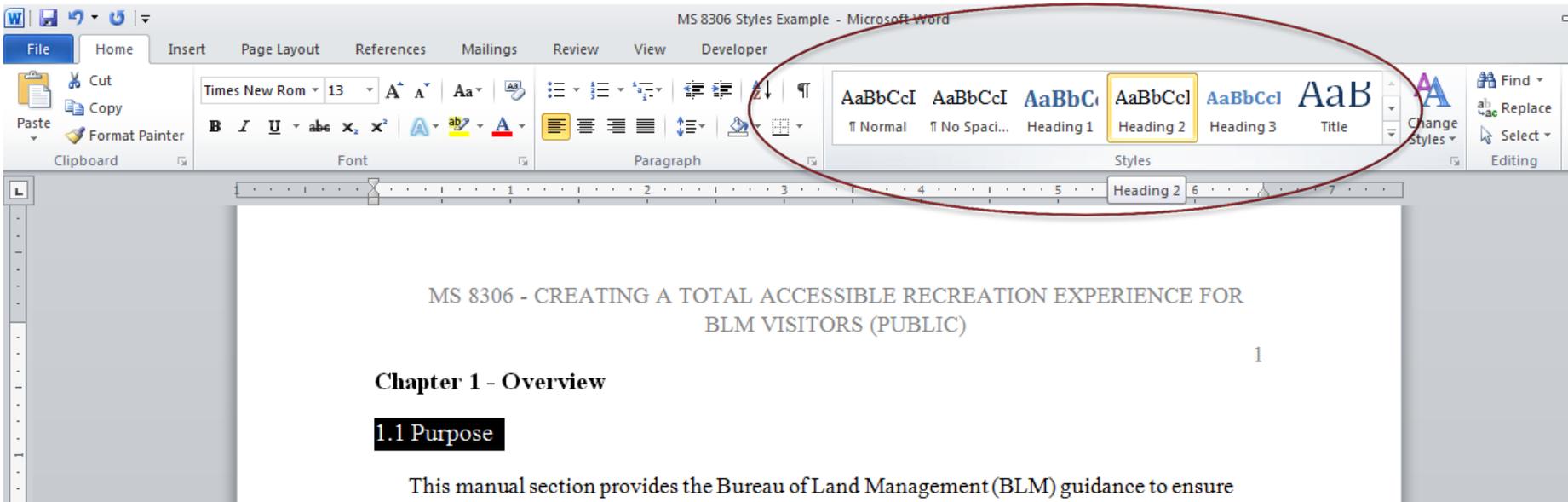


PRO TIP: NEVER LOOK IN SOMEONE ELSE'S DOCUMENTS FOLDER.

XKCD

# Text Formatting - Use Styles to Create Headings

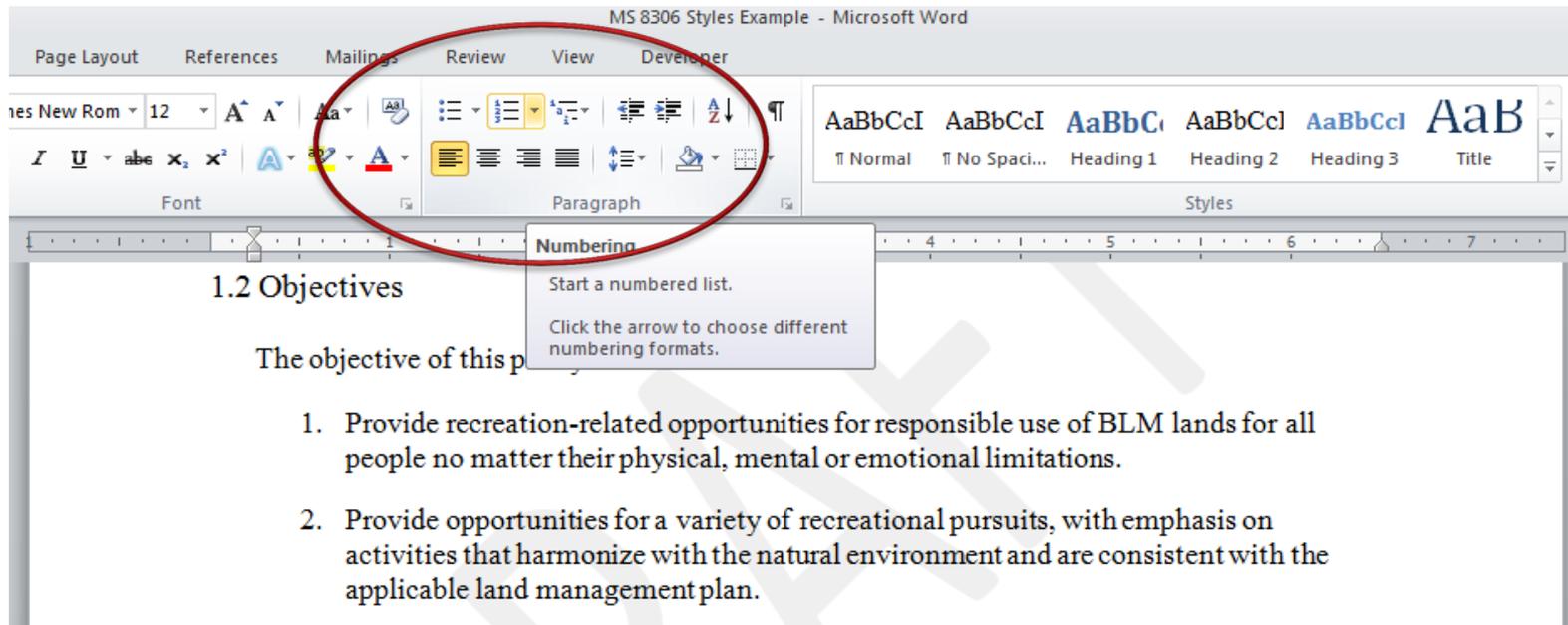
- Headings are used to break-up content and make finding information easier. AT cannot access information in purely visual queues such as bolding and underlining.
- Go to Home>>Styles and use styles when creating headings in your document.



The screenshot shows the Microsoft Word interface. The title bar reads "MS 8306 Styles Example - Microsoft Word". The ribbon is set to "Home". The Styles gallery is open, showing various styles: Normal, No Spacing, Heading 1, Heading 2 (highlighted with a yellow border and a red oval), Heading 3, and Title. The document content includes the title "MS 8306 - CREATING A TOTAL ACCESSIBLE RECREATION EXPERIENCE FOR BLM VISITORS (PUBLIC)", the page number "1", the chapter title "Chapter 1 - Overview", and the section title "1.1 Purpose" (highlighted with a black background). The first sentence of the text is "This manual section provides the Bureau of Land Management (BLM) guidance to ensure".

# Text Formatting - Lists

- Using built-in list features creates a structure that screen readers can identify.
- The built-in list features carry over to Adobe.
- Go to Home>Paragraph and use Bullets, Numbering or Multilevel List features.



MS 8306 Styles Example - Microsoft Word

Page Layout References Mailings Review View Developer

Font Paragraph Styles

Numbering

Start a numbered list.

Click the arrow to choose different numbering formats.

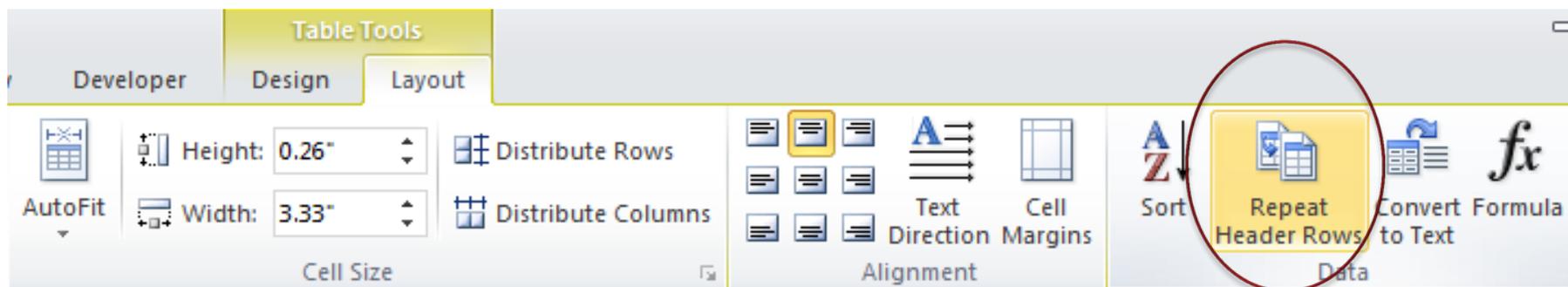
1.2 Objectives

The objective of this p

1. Provide recreation-related opportunities for responsible use of BLM lands for all people no matter their physical, mental or emotional limitations.
2. Provide opportunities for a variety of recreational pursuits, with emphasis on activities that harmonize with the natural environment and are consistent with the applicable land management plan.

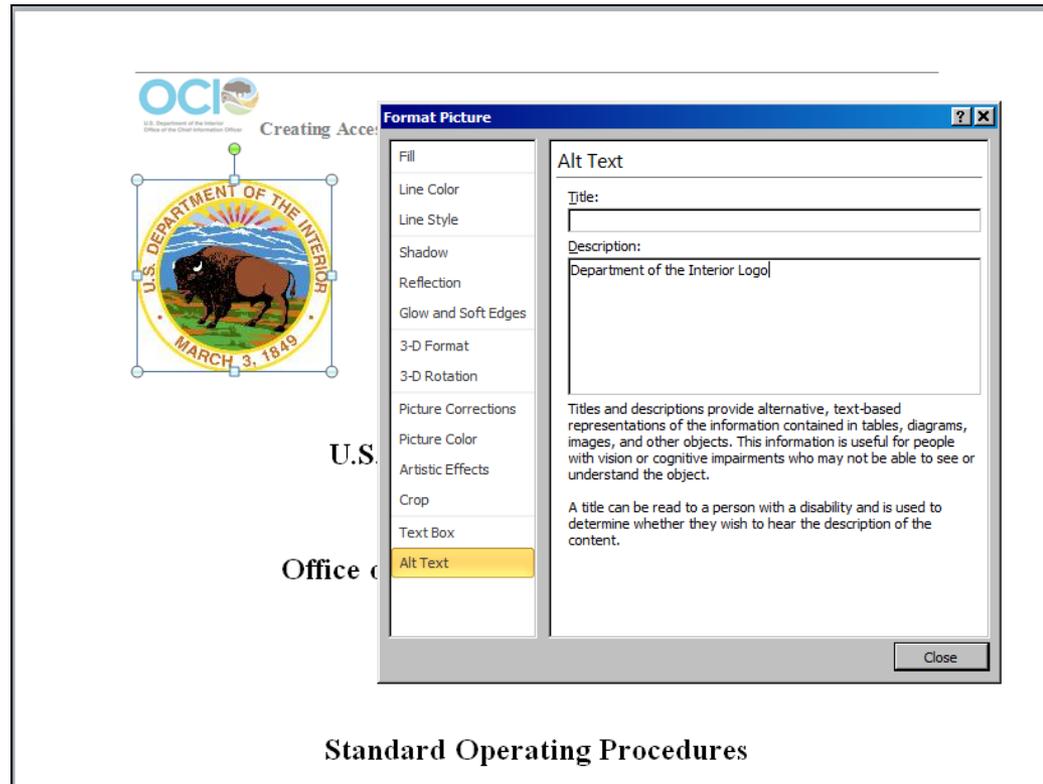
# Use Built-in Features for Tables

- When using a table format, use built-in table features rather than creating the appearance of a table by using tabs or spaces.
- Go to Insert>Tables and insert the number of columns and rows you need for your data table.
- **Do not merge or split cells**
- Identify the header row. Select the first row>Table Tools Layout tab>Repeat Header Rows.



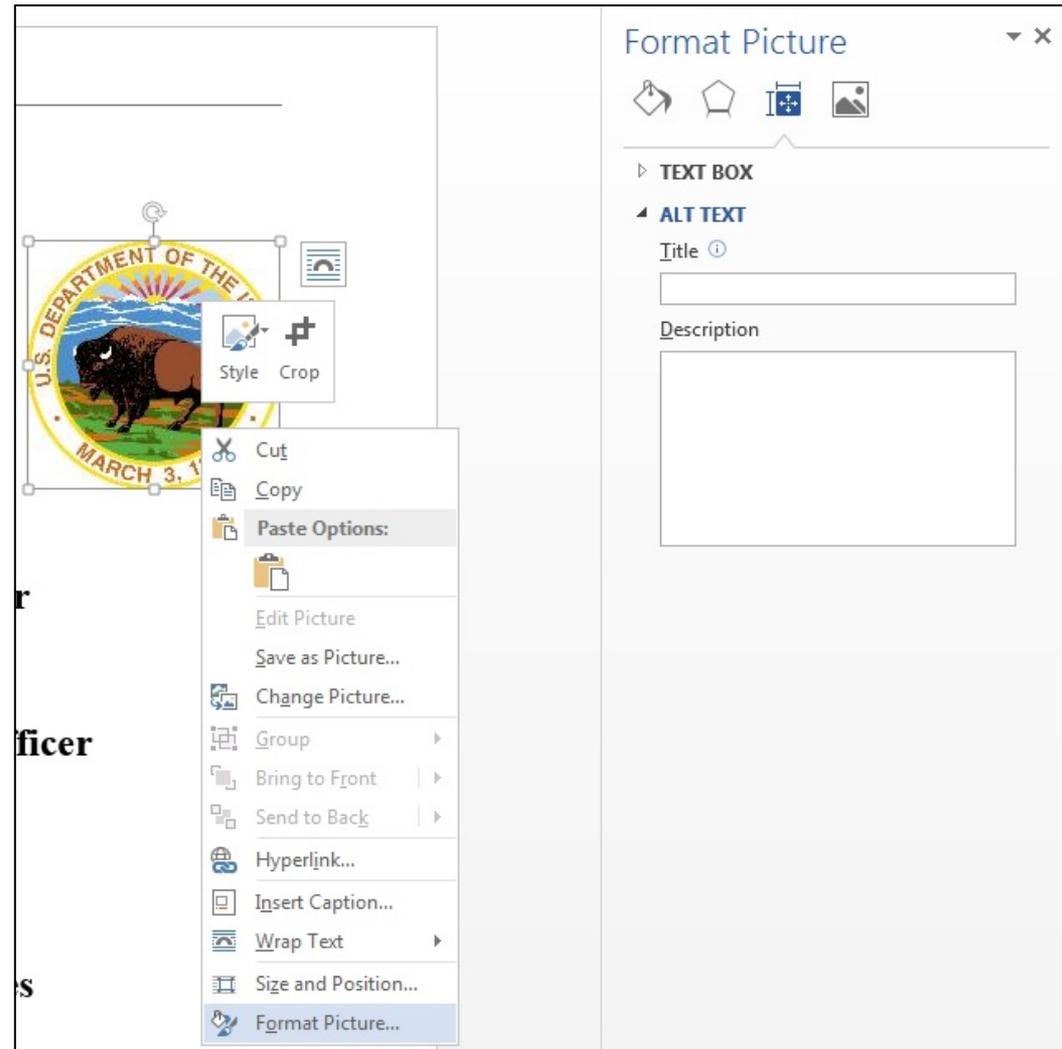
# Word 2010 - Add Alternate Text to Images

1. Right click on the image and select the Format command from the drop down menu.
2. Select Alt Text and type a description of the image into the **Description** box.



# Word 2013 - Add Alternate Text to Images

1. Right click on the image and select the Format command from the drop down menu.
2. Under Layout and Properties, select Alt Text and type a description of the image into the **Description** box.



# Use of Color & Color Contrast

- Do not use color as the only means of conveying information.
- Individuals who are blind, low vision, or color blind will not have access to information conveyed through color alone.
- Text should have a contrast ratio of at least 4.5:1, but there are exceptions. You can test color contrast using a variety of contrast [checkers](#) available online.
- Exceptions:
  1. For large text, a contrast ratio of only 3:1 is necessary. Large regular text is at least 18pt/24px, while large bold text is 14pt/18px.
  2. Purely decorative elements do not have a color contrast requirement.

# Requirements for Accessible PDFs

- **Document Properties**

1. Descriptive Filename
2. Assistive Technology (AT) Access
3. Document Language

- **Structure Tags**

1. Tags
2. Decorative Content
3. Headers, Footers, and Watermarks
4. Headings
5. Lists
6. Section Language

- **Objects**

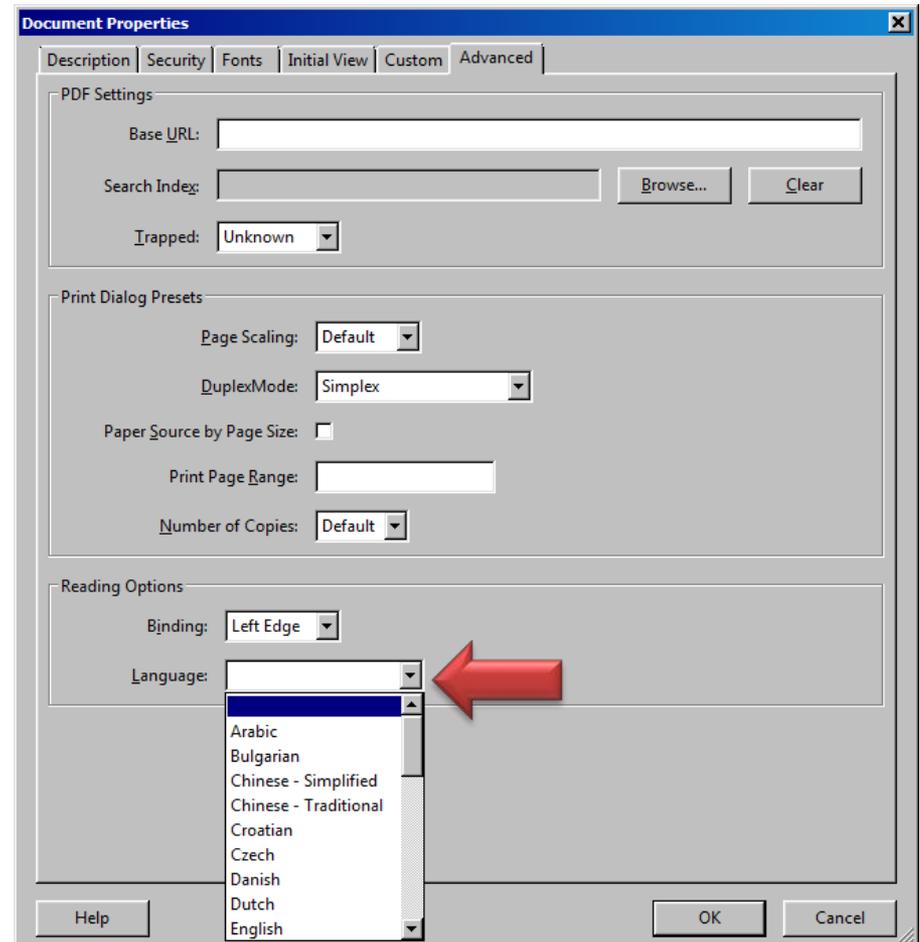
1. Images
2. Data Tables

- **Color**

1. Color and Other Sensory Characteristics
2. Color Contrast

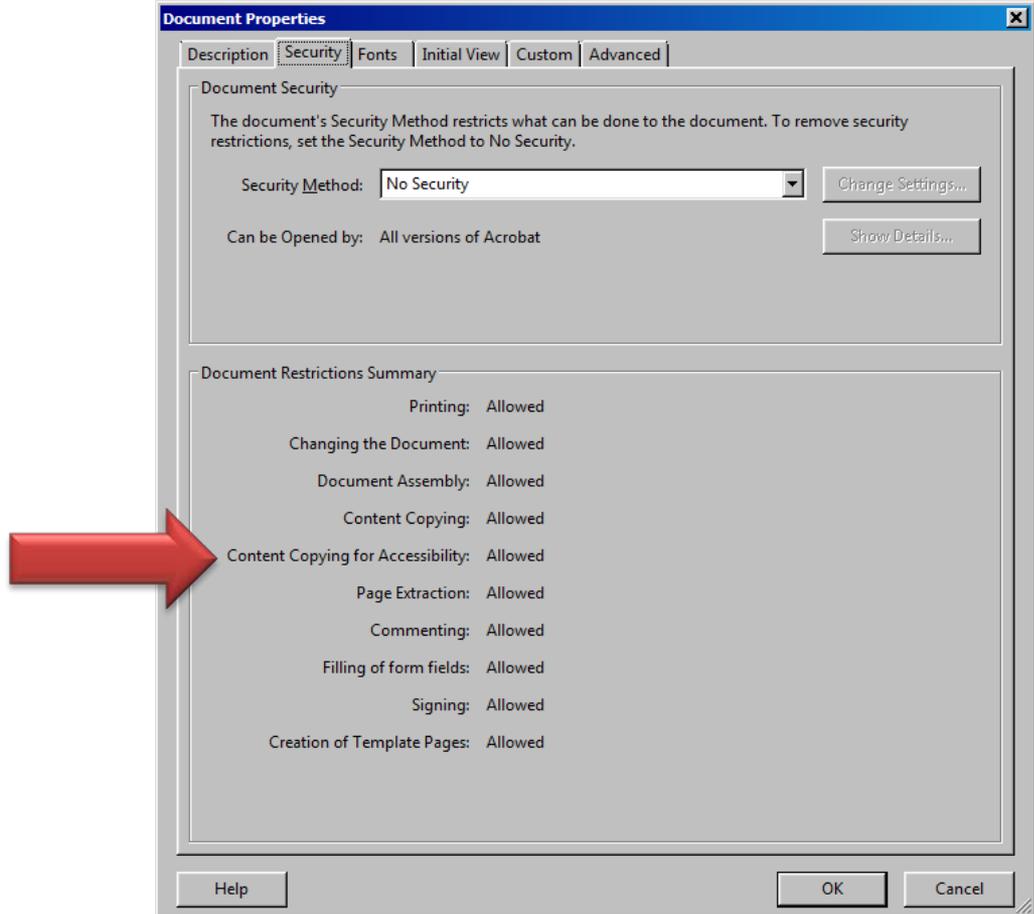
# Document Properties – Document Language

- Screen readers use the language setting in document properties to provide the appropriate pronunciation for the document.



# Document Properties – AT Access

- Ensure security settings allow content copying for accessibility



# Structure Tags

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- Screen readers rely on tags to interpret document structure such as headings, paragraphs, tables, etc.
- All meaningful text and objects must correspond to a tag and the order of tags must correspond to the visual order.

# Structure Tags - Headings

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- Headings break up content and make finding information easier. AT cannot infer meaning from visual headings created with bold or underline.
  - Visual headings must correspond with a heading tag, and
  - Heading tags must match the visual outline.
  - Headings created in Word will convert into Adobe if they were created using Headings in Styles

# Example – Headings Converted from Word

The screenshot displays the Adobe Acrobat Pro interface. The title bar reads "MS 8306 Draft Recreation Accessibility Manual\_Demo (Recovered).pdf - Adobe Acrobat Pro". The main window shows a PDF document titled "MS 8306 - CREATING A TOTAL ACCESSIBLE RECREATION EXPERIENCE FOR BLM VISITORS (PUBLIC)".

On the left side, there is a "Tags" panel showing a hierarchical table of contents. A red arrow points to the "1.1 Purpose" entry in this list. The main content area on the right shows the text for "1.1 Purpose", with another red arrow pointing to the heading. The text reads:

1.1 Purpose

This manual section provides the Bureau of Land Management (BLM) guidance to ensure that all new or altered BLM recreation facilities comply with federal and BLM accessibility guidelines. This includes facilities, boat landings, Visitor Centers, trails, etc. These facilities must comply with the Architectural Barriers Act (ABA) of 1968 which requires access to facilities designed, built, altered, or leased with Federal funds. The [BLM Trail Accessibility Handbook](#) establishes an equal or higher standard for those trails than federal accessibility standards. The [BLM Outdoor Recreation Accessibility Handbook](#) outlines the legally enforceable standards for use on BLM managed public lands for the facilities and features addressed in those guidelines. This manual is intended to serve as a roadmap to the BLM recreations accessibility program.

Below the main text, the "1.2 Objectives" and "1.3 Authority" sections are visible, each containing a list of items.

On the right side of the interface, there is a "Tools" panel with various options like "Change Reading Options", "Quick Check", "Full Check", "Open Accessibility Report", etc.

# Structure Tags – Headers, Footers, and Watermarks

Information in headers, footers or watermarks must correspond to a tag at or near the start of the related information or a screen reader will skip over it.

# Structure Tags - Lists

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Screen readers cannot infer meaning from symbols and indents. List tags create a structure that screen readers can identify.

# Example – Lists Converted from Word

The screenshot shows the Adobe Acrobat Pro interface. The main window displays a PDF document titled "MS 8306 Draft Recreation Accessibility Manual\_Demo (Recovered).pdf". The document content is as follows:

MS 8306 - CREATING A TOTAL ACCESSIBLE RECREATION EXPERIENCE FOR BLM VISITORS (PUBLIC)

1

1.1 Purpose

This manual section provides the Bureau of Land Management (BLM) guidance to ensure that all new or altered BLM recreation facilities comply with federal and BLM accessibility guidelines. This includes facilities, boat landings, Visitor Centers, trails, etc. These facilities must comply with the Architectural Barriers Act (ABA) of 1968 which requires access to facilities designed, built, altered, or leased with Federal funds. The [BLM Trail Accessibility Handbook](#) establishes an equal or higher standard for those trails than federal accessibility standards. The [BLM Outdoor Recreation Accessibility Handbook](#) outlines the legally enforceable standards for use on BLM managed public lands for the facilities and features addressed in those guidelines. This manual is intended to serve as a roadmap to the BLM recreations accessibility program.

1.2 Objectives

The objective of this policy is to:

1. Provide recreation-related opportunities for responsible use of BLM lands for all people no matter their physical, mental or emotional limitations.
2. Provide opportunities for a variety of recreational pursuits, with emphasis on activities that harmonize with the natural environment and are consistent with the applicable land management plan.
3. Mitigate adverse impacts of recreational uses on natural, cultural, and historical resources and on other uses through education, outdoor ethics programs, and on-the-ground management, including law enforcement and restoration.

1.3 Authority

1. [National Trails System Act \(16 U.S.C. 1241 \(note\), 1241-1249\).](#)
2. [Surface Transportation Assistance Act of 1978, as amended \(23 U.S.C. 101a, 201-204\).](#)
3. [Architectural Barriers Act of 1968, as amended \(42 U.S.C. 4151 et seq.\)](#). This act requires that all facilities designed, constructed, altered, or leased by a federal agency be accessible to persons with disabilities.
4. [Rehabilitation Act of 1973, as amended, Sections 504 and 508 \(29 U.S.C. 794 and 794d\).](#)
5. [Americans with Disabilities Act of 1990 \(42 U.S.C. 12101 et seq.\)](#). This act prohibits discrimination on the basis of disability by state or local governments and in public accommodation and public transportation. The ADA does not apply to federal agencies

The left sidebar shows a "Tags" panel with a table of contents structure. Red arrows point from the TOC items to the corresponding text in the document:

- 1.1 Purpose
- 1.2 Objectives
- The objective of this p...
- 1. Provide recrea...
- 2. Provide oppor...
- 3. Mitigate adver...
- 1.3 Authority
- 1.4 Responsibilities
- 1.5 References
- 1.6 Policy

# Structure Tags – Decorative Content

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- Decorative content should be set to Artifact.
- Screen readers can skip over ornamental images and redundant text tagged as Background.



# Objects - Images

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- Screen readers cannot infer meaning from images and other objects (pictures, images of text, charts, diagrams, shapes, etc.). Meaningful images must be accompanied by text that describes the purpose or function of the image.

# Adobe – How to Add Alternate Text

Select Tools >> Accessibility >> TouchUp Reading Order

The screenshot displays the Adobe Acrobat interface. On the left, a document titled "Background Information" is open, showing text about solar energy conversion. A "TouchUp Reading Order" dialog box is overlaid on the document, allowing the user to select content for reading order. The dialog includes buttons for "Text", "Figure", "Form Field", "Figure/Caption", "Heading 1", "Table", "Heading 2", "Cell", "Heading 3", "Formula", and "Background". It also features a "Table Editor" and checkboxes for "Show page content order", "Show table cells", and "Show tables and figures". On the right, the "Tools" panel is visible, with the "Accessibility" section expanded. A red arrow points to the "TouchUp Reading Order" tool within the Accessibility panel.



# Adobe – How to Add Alternate Text

Draw a rectangle around the image and click Figure in the TouchUp Reading Order tool.

According to the Environmental Protection Agency:

"Greenhouse gases trap heat near the Earth's surface, warming the planet. The primary greenhouse gases in Earth's atmosphere are water vapor, carbon dioxide, methane, nitrous oxide, and ozone. Carbon dioxide is the most abundant and the most significant of the greenhouse gases because of the sheer volume of it in the atmosphere and its long-lasting life-cycle of about 100 years. Other significant greenhouse gases include water vapor, methane, and nitrous oxide. Carbon dioxide is the most abundant and the most significant of the greenhouse gases because of the sheer volume of it in the atmosphere and its long-lasting life-cycle of about 100 years. Other significant greenhouse gases include water vapor, methane, and nitrous oxide.

Solar energy is converted to electricity in two ways:

Photovoltaic (PV or solar) cells convert sunlight into electricity. PV cells are made of silicon and are mounted on panels and connected to a grid. They can be used to charge mobile devices and power homes, or generate electricity for a power plant.

Concentrating solar power (CSP) plants use mirrors or lenses to concentrate a large amount of sunlight onto a receiver. The heated fluid produces steam, which drives a turbine generator. Using mirrors instead of water as the heat transfer fluid makes it possible to store the heat so that electricity can be generated on a cloudy day. Power from CSP plants is transmitted through the transmission grid.

The Ivanpah solar electric generating system is the largest CSP "power tower" system in the world, located in the California desert. It consists of 393 heliostats (mirrors) that focus sunlight onto a receiver on the tower. The system has about 170,000 heliostats and produces about 393 megawatts of electric power. A

**TouchUp Reading Order**

Draw a rectangle around the content then click one of the buttons below:

Figure

Form Field

Figure/Caption

Heading 1

Table

Heading 2

Cell

Heading 3

Formula

Background

Table Editor

Show page content order

Show table cells

Show tables and figures

Clear Page Structure...

Show Order Panel

Help

Close

**Figure - No alternate text exists.**

Recognize Text

Protection

Sign & Certify

Print Production

Accessibility

Change Reading Options

Quick Check

Full Check

Open Accessibility Report

Add Tags to Document

Run Form Field Recognition

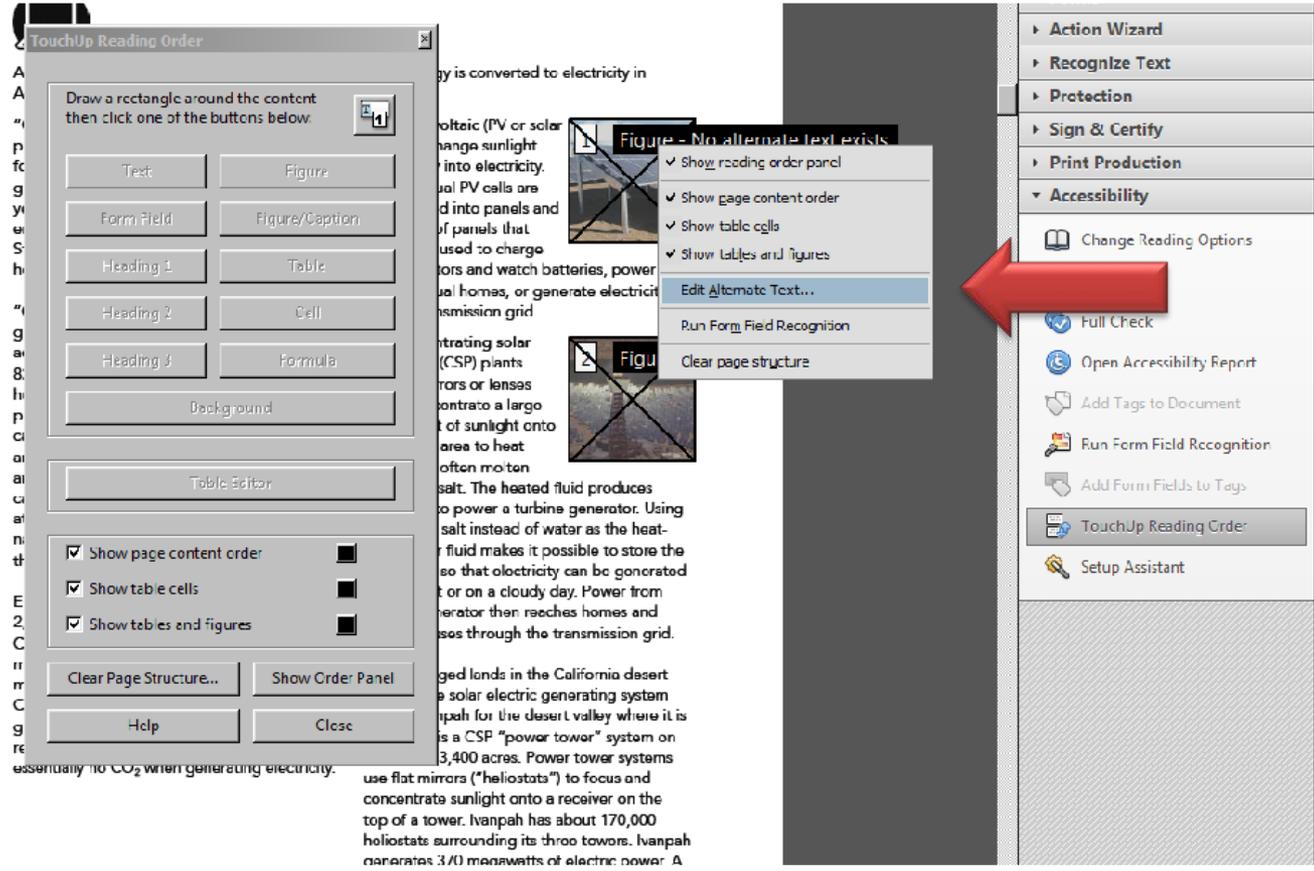
Add Form Fields to Tags

TouchUp Reading Order

Setup Assistant

# Adobe – How to Add Alternate Text

- After tagging the image as a Figure, right click on the image, drag down to Edit Alternate Text, and enter text in the pop-up dialogue box.



# Adobe – Data Tables

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In data tables, header cells are required to describe the data. For AT to interpret this information:

1. Data tables must correspond to a table tag <Table>.
2. Header cells must be identified with table header cell tags <TH>.
3. Complex data tables must have data cells <TD> associated with header cells.

# Example – Inaccessible Table

- This table has not been tagged as a table.
- Header cells and data cells have not been identified.

File Edit View Window Help

Create [Icons]

1 / 9 [Navigation] 108% [Zoom] Tools

Tags

No Tags available

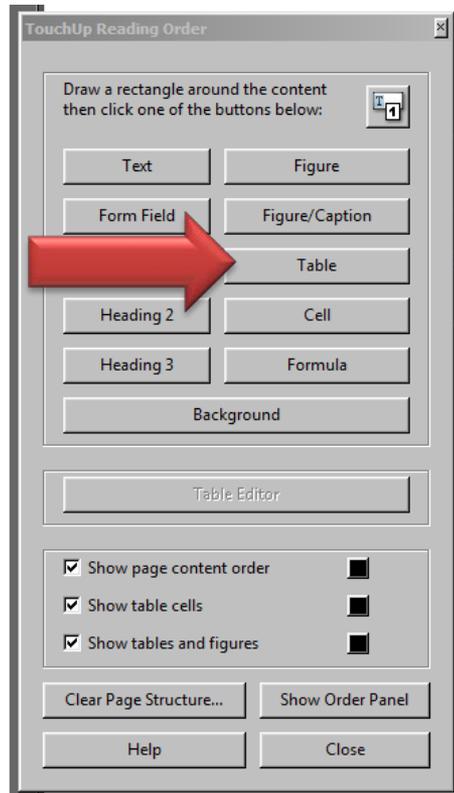
Preparedness Level 2

Alaska Interagency Coordination Center Situation Report  
Tuesday - 05/17/2016

Wildland Fires	New	Out	Active	Npr	YTD Fires	YTD Acres
Alaska Fire Service (AFS)	0	1	4	0	27	358.3
GAD (Galena Zone)	0	0	2	0	3	153.0
MID (Military)	0	0	1	0	22	172.3
TAD (Tanana Zone)	0	1	0	0	1	3.0
UYD (Upper Yukon Zone)	0	0	1	0	1	30.0

# Adobe – Tagging Tables

To tag a table, Use the TouchUp Reading Order Tool to draw a rectangle around the table and click Table.

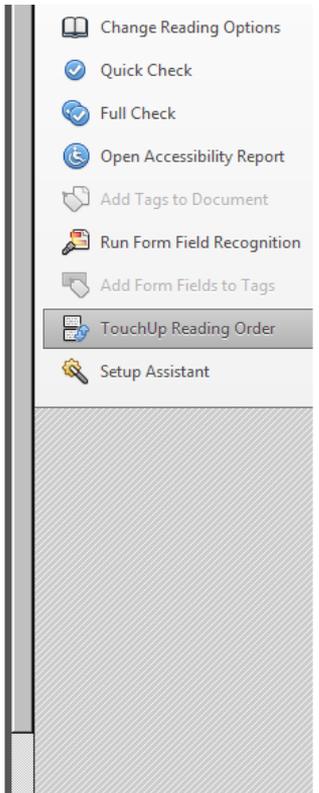


Duals to the end of the “stinger” (in feet)  
3 = Bunk to bunk distance minus the length of the “stinger” (in feet)  
and Exhibit B were developed from these equations and can be used for  
boy and logging truck configuration described.

### LENGTHS

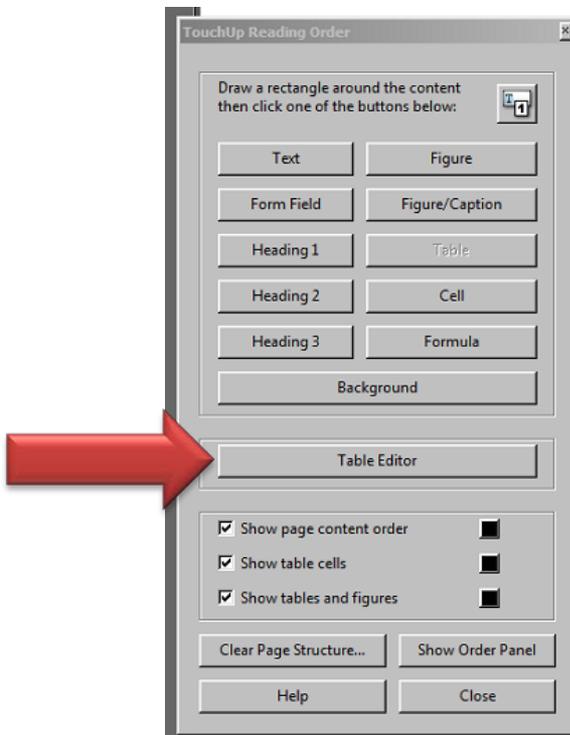
GENERAL DESCRIPTION – Curve widening tapers should be straight lined  
e the point of curvature (PC) and after the point of tangency (PT) for the  
wing lengths:

RADIUS (R) (in feet)	TAPER LENGTH (T) (in feet)
Less than 70	60
70-85	50
86-100	40
Greater than 100	30



# Adobe – Using the Table Editor

Place the cursor over the table number and click, the table number should turn blue. You may now open the Table Editor in the TouchUp Reading Order tool.



Duals to the end of the “stinger” (in feet)  
3 = Bunk to bunk distance minus the length of the “stinger” (in feet)  
d Exhibit B were developed from these equations and can be used for  
boy and logging truck configuration described.

### LENGTHS

GENERAL DESCRIPTION – Curve widening tapers should be straight lined  
e the point of curvature (PC) and after the point of tangency (PT) for the  
wing lengths:

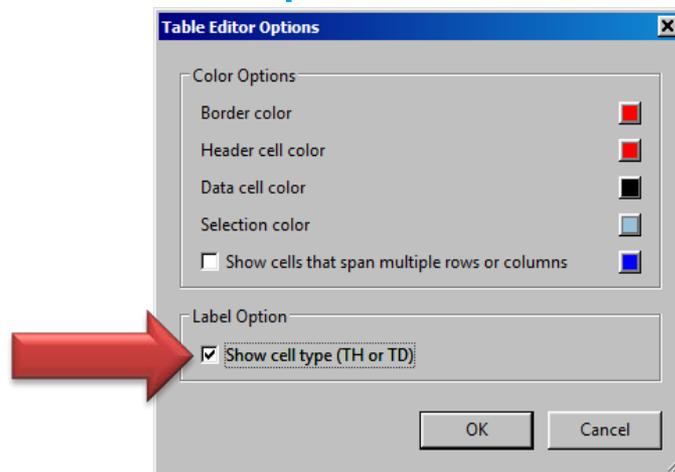
1 Table	US (R) (in feet)	TAPER LENGTH (T) (in feet)
Less than 70		60
70-85		50
86-100		40
Greater than 100		30

# Adobe – Table Cells

- To view header cell and data cell labels, right click on a data cell and select Table Editor Options.

RADIUS (R) (in feet)	TAPER LENGTH (T) (in feet)
60	
70	50
86-100	40
Greater than 100	30

- Under Label Option, check Show cell type



# Adobe – Evaluating Simple Tables

- All table header cells should be labeled <TH>.
- All table data cells should be labeled <TD>.
- This simple table is accessible.

TH	RADIUS (R) (in feet)	TH	TAPER LENGTH (T) (in feet)
TD	less than 70	TD	60
TD	85	TD	50
TD	100	TD	40
TD	greater than 100	TD	30

- In complex tables, data cells must be associated with header cells

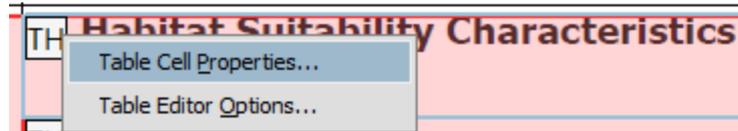
# Adobe – Evaluating Complex Tables

Ensuring accessibility of complex tables requires evaluating table cell properties.

TH Habitat Indicators	TH Consider using variance (Range) rather than mean Metric Description	TH Habitat Suitability Characteristics	
		TH Arid Sites	TH Mesic Sites
TD Sagebrush Canopy Cover	TD Average percent canopy cover for land cover type.	TD 5-25%	TD /25%
TD Sagebrush Height	TD Average sagebrush height for land cover type	TD 0-80 cm	TD -80 cm
TD Perennial Grass and Forb Heights	TD Average maximum heights in land cover type	TD 18 cm	TD 8 cm
TD Herb Canopy Cover	TD Average percent canopy cover for land cover type	TD 5%	TD 0%

# Adobe – Evaluate Complex Tables

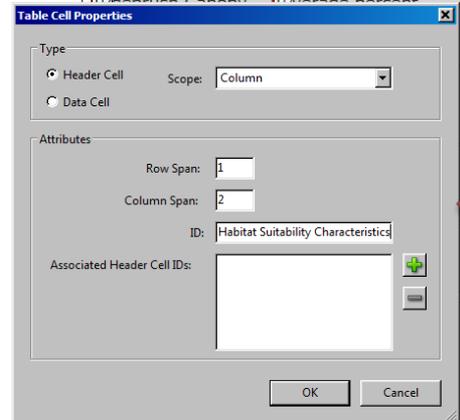
1. Use the Table Editor to check the Table Cell Properties of the header cells.
2. Right click on the header cell and select Table Cell Properties.



3. In the example below, the header cell, “Habitat Suitability Characteristics” has a Column Span of 2 columns under Attributes. Note the ID field is completed.

Habitat indicators and suitable habitat characteristics for third order (fine-scale) nesting habitat. Fourth order (site-scale) measurements provides third order (fine-scale) information.

Habitat Indicators	Consider using variance (Range) rather than mean Metric Description	Habitat Suitability Characteristics	
		Arid Sites	Mesic Sites
Blackburn Canyon	100% percent	ID5-25%	ID1/25%
		ID1-80 cm	ID1-80 cm
		ID18 cm	ID18 cm
		ID0%	ID0%

The "Table Cell Properties" dialog box is shown. The "Type" is "Header Cell" and "Scope" is "Column". Under "Attributes", "Row Span" is 1, "Column Span" is 2, and "ID" is "Habitat Suitability Characteristics". A red arrow points from the dialog box to the "Habitat Suitability Characteristics" header cell in the table above.

# Adobe – Evaluate Complex Tables

- 1. Use the Table Editor to check the Table Cell Properties of the data cells.
- 2. Right click on the data cell and select Table Cell Properties.
- 3. The data cell is associated with Header Cells, “Habitat Suitability Characteristics” and “Arid Sites.”
- 4. Data cells are properly associated with header cells. This table is accessible.

Habitat Indicators	Consider using variance (Range) rather than mean Metric Description	Habitat Suitability Characteristics	
		Arid Sites	Mesic Sites
Sagebrush Canopy Cover	Average percent canopy cover for land cover type.	≥25%	←
		10 cm	ID 40-80 cm
		cm	ID ≥18 cm
		0	ID ≥10%

**Table Cell Properties**

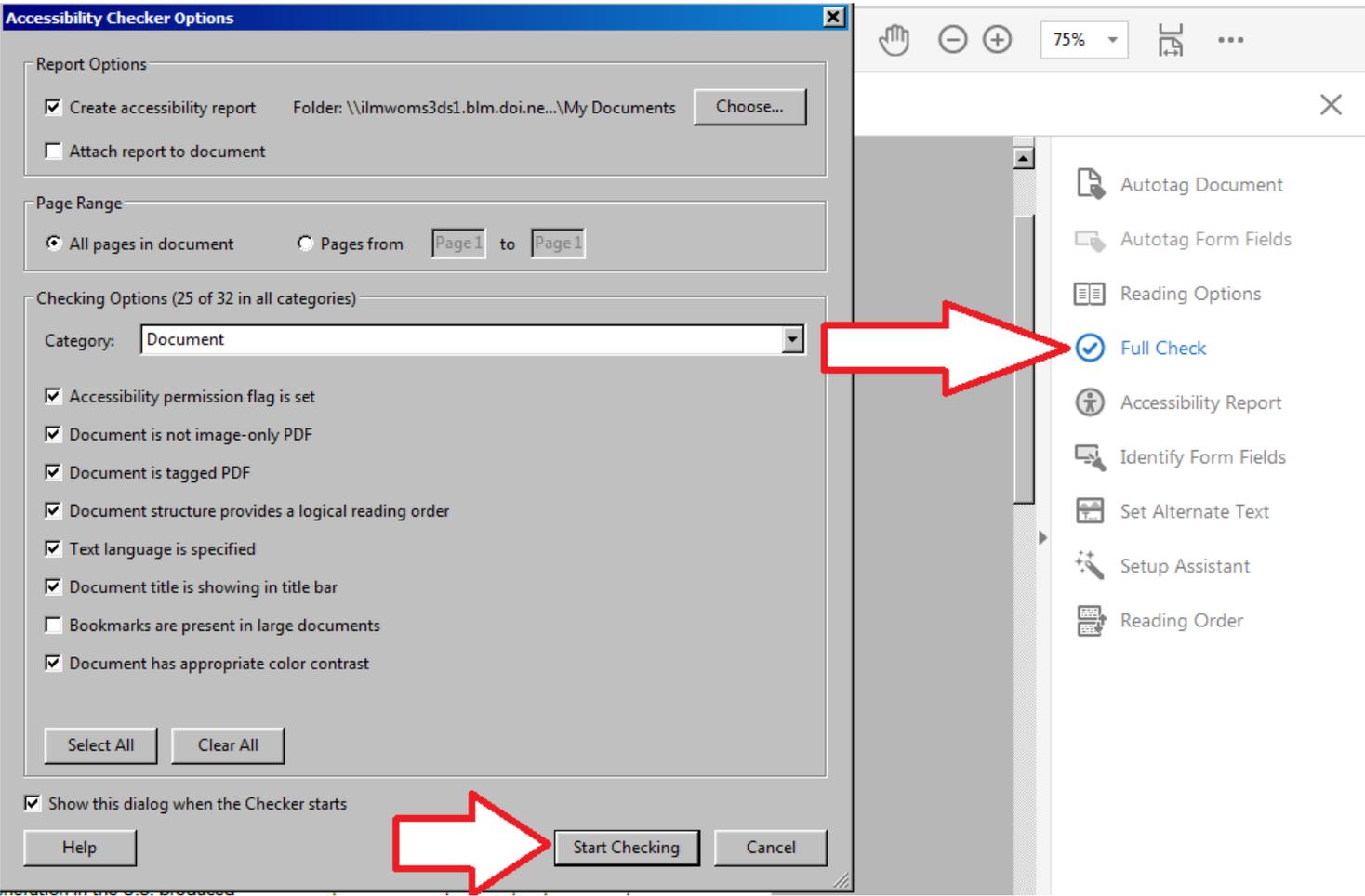
Type  
 Header Cell Scope: None  
 Data Cell

Attributes  
Row Span: 1  
Column Span: 1  
ID:   
Associated Header Cell IDs:  
Arid Sites  
Habitat Suitability Characteristics

OK Cancel

# Adobe Accessibility Checker

Always check your document for accessibility errors using the Adobe Accessibility Checker.



# Alternative Accessible Version

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- Federal agencies have the goal to produce an accessible document for everyone. However, there may be times when this is not feasible. In cases where a document cannot be made accessible for everyone, an accessible alternative version is acceptable.



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Phone: (202) 219-0963

Catherine Emmett  
BLM Section 508 Coordinator  
Email: [chemmett@blm.gov](mailto:chemmett@blm.gov)  
Phone: (202) 912-7267

