



Making Accessible PDF Tables - Part 3 - How to Remediate a Complex Table

*Presented by the Civil Rights Office of the Texas
Health and Human Services Commission*

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Introduction

In Part 1 of this series, you learned about things to **consider** and things to **avoid** in a Microsoft Word document with tables to make it easier to remediate WHEN you convert it to an Adobe PDF file.

In Part 2 of this series, you learned how to remediate a **SIMPLE** table. In this module, you will learn how to remediate a **COMPLEX** table.

Table Talk

What is the difference between a complex table and a simple table?

A **simple** table contains a **SINGLE** header row and a single header column, while a **complex** table contains:

- Two or more rows of column header cells or two or more columns of row header cells and
- Merged header cells

Source	Organic		Conventional	
	Peaches	Watermelon	Peaches	Watermelon
Farmers Market	\$4 per lb.	\$5 each	\$3 per lb.	\$4 each
Grocery Store	\$4 per lb.	\$6 each	\$2 per lb.	\$4 each

Regardless of the program used to produce the original document, a complex table will always have to be remediated with Adobe Acrobat Pro.

Whenever you are remediating a complex table, keep these two points in mind:

1. The merged cells for the header columns and header rows have to be **DEFINED** correctly.
2. The header columns and header rows have to be **SCOPED** correctly.

In its current form, this complex table is not accessible to screen reader users because it is not **STRUCTURED** correctly. To make it accessible, you have two options:

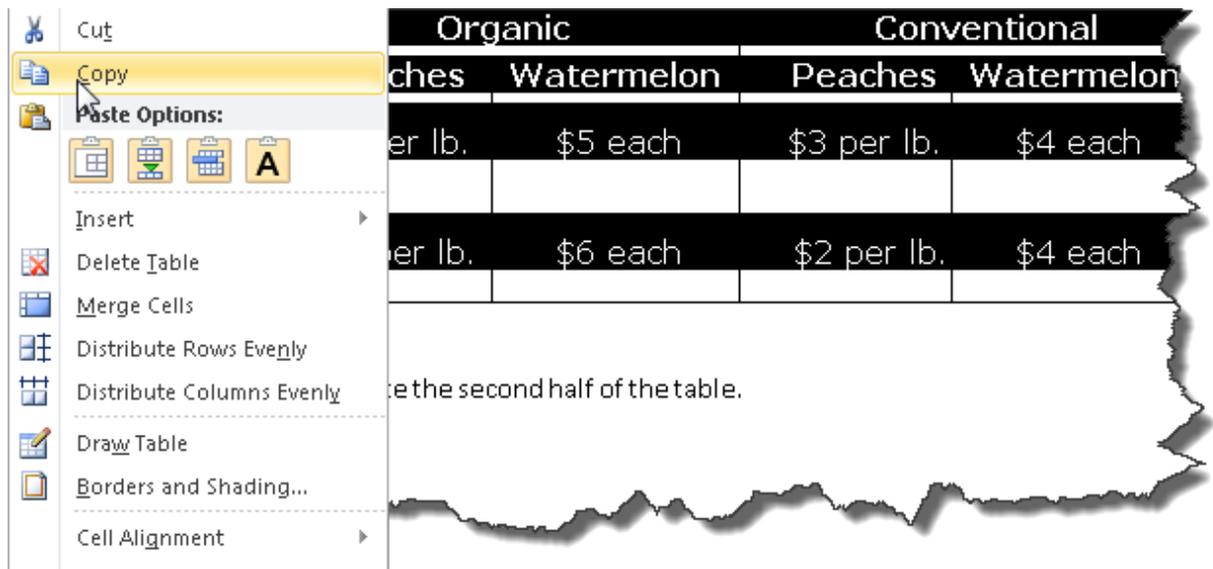
1. Split the table into two simple tables.
2. Fix the table with the Table Editor in Acrobat Pro.

Let's look at the first option: Splitting the table into two simple tables.

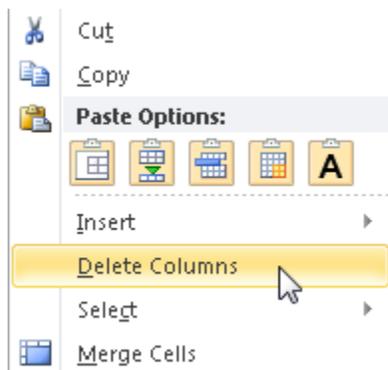
Split the Table in Two

Although complex tables can be made accessible, simple tables are easier to read. If you have access to the original document—for example a Microsoft Word file), split the table into two simple tables. To do this:

1. Go to the original document, **copy** the complex table, and **paste** that copy below the original.



2. In the **original** table, select one of the merged header cells and all the columns beneath it. Then right-click and select **Delete Columns** from the context menu.



Source	Organic	
	Peaches	Watermelon
Farmers Market	\$4 per lb.	\$5 each
Grocery Store	\$4 per lb.	\$6 each

3. In the second table, select the other merged header cell and the columns beneath it. Then right-click and select **Delete Columns** from the menu:

Source	Conventional	
	Peaches	Watermelon
Farmers Market	\$3 per lb.	\$4 each
Grocery Store	\$2 per lb.	\$4 each

4. In the first table, **cut** the wording from the merged header cell. **Paste** it **ABOVE** the table and give it the appropriate heading style. In this case, we will use Heading 3:

Conventional

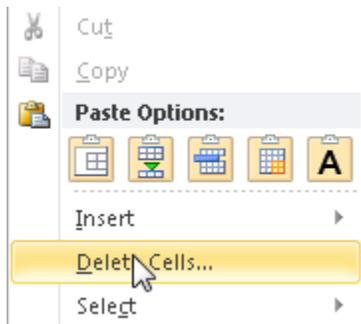
Source	Peaches	Watermelon
Farmers Market	\$3 per lb.	\$4 each
Grocery Store	\$2 per lb.	\$4 each

Repeat for the second table.

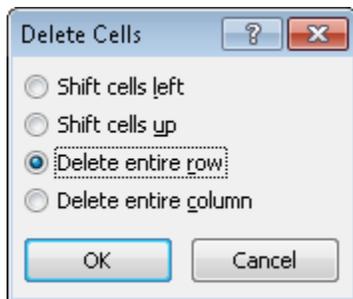
Organic

Source	Peaches	Watermelon
Farmers Market	\$4 per lb.	\$5 each
Grocery Store	\$4 per lb.	\$6 each

5. In the first table, right-click in the **empty header cell** and select **Delete Cells...** from the menu.



6. In the **Delete Cells dialog box** that appears, select **Delete entire row** and then click **OK**.



7. You should see that the ENTIRE row got deleted. In this example, that includes the word **Source** in the first column. If you want, you can add that header back to the table.

Conventional

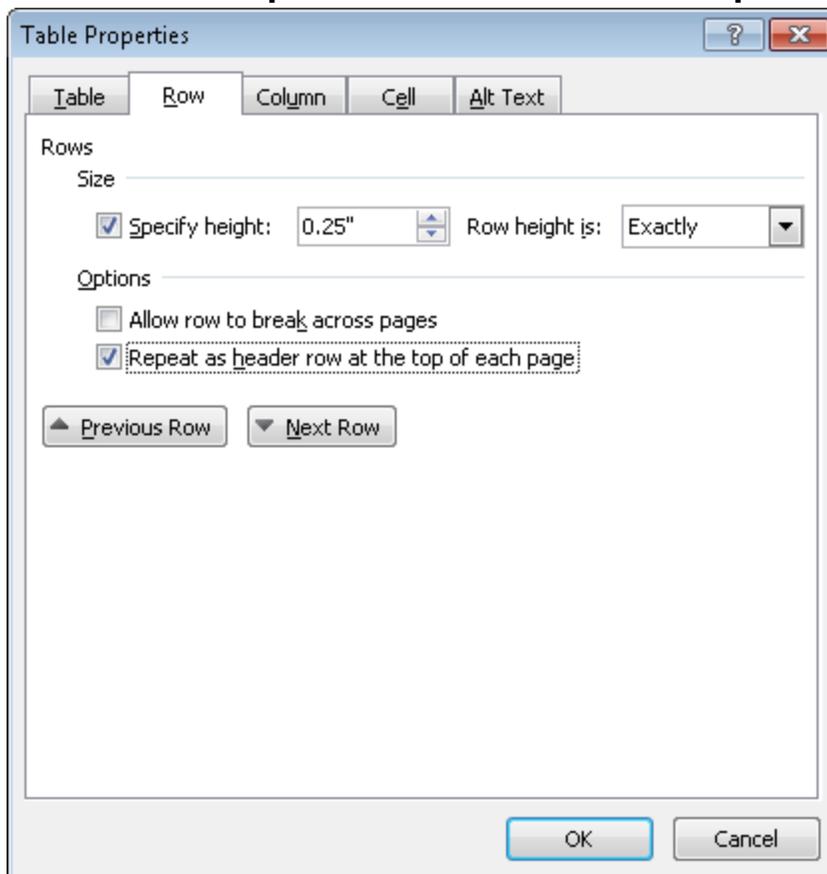
	Peaches	Watermelon
Farmers Market	\$3 per lb.	\$4 each
Grocery Store	\$2 per lb.	\$4 each

8. Repeat for the second table.

Organic

	Peaches	Watermelon
Farmers Market	\$4 per lb.	\$5 each
Grocery Store	\$4 per lb.	\$6 each

9. **On the first table, select the header row. Right-click, select Table Properties... from the menu, click on the Row tab in the dialog box that opens. Under Options, DESELECT "Allow row to break across pages" and SELECT "Repeat as header row at the top of each page."**



10. Repeat this step for the second table.

You have just split the table into two simple tables and reformatted them to be accessible. Do not forget to add the row headers after you convert to PDF. Then you will be an accessibility wizard!

Fix the Table with the Table Editor

Now, let's look at the second option. If you cannot split the table into two simple tables, you will have to use the Table Editor in Acrobat Pro to set the scope of the table's header cells.

Understanding "Scope"

Think of the scope of a header cell as the place you should look for the cells identified by that header.

From each header cell, you should either:

- Look **DOWN** the table into the cells **BELOW** or
- Look **ACROSS** the table into the cells to the **RIGHT**

Of course, column headers label the cells below them, and row headers label the cells to their right. We can make this obvious to software by specifying the scope. Specifying the scope is especially important when a header cell spans more than one column or row. For example, in our table, the header "Organic" spans two columns, "Peaches" and "Watermelon":

Source	Organic		Conventional	
	Peaches	Watermelon	Peaches	Watermelon
Farmers Market	\$4 per lb.	\$5 each	\$3 per lb.	\$4 each
Grocery Store	\$4 per lb.	\$6 each	\$2 per lb.	\$4 each

The header "Conventional" also spans two columns:

Source	Organic		Conventional	
	Peaches	Watermelon	Peaches	Watermelon
Farmers Market	\$4 per lb.	\$5 each	\$3 per lb.	\$4 each
Grocery Store	\$4 per lb.	\$6 each	\$2 per lb.	\$4 each

Visually, this is obvious. But for screen readers and other assistive technologies to interpret the table properly, we must explicitly define the two-column scope of each of these two headers. We call this process “scoping” the table.

To scope a table in a PDF, we use Adobe Acrobat Pro’s Table Editor. To use the Table Editor, we must enable it first.

Enable the Table Editor

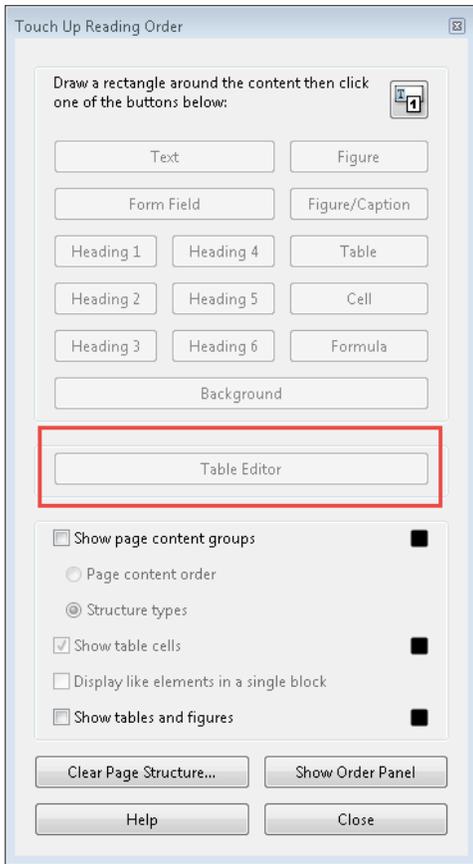
1. In Adobe Acrobat Pro, open the accessibility tools and **click the Accessibility option** in the right panel.



2. **Click the Reading Order** option to open the Touch up Reading Order dialog box.



Notice that **INITIALLY** all of the buttons, including the Table Editor Button, are disabled. This is because nothing on the page is currently selected.



3. **Select Show page content group** and, under it, **select either Page content order or Structure types**.

You should see that the table on the page gets highlighted. If you select **Structure types** your table will look similar to this one.

Source	Organic	Conventional
Farmer's Market	peaches \$2.99 per lb. watermelon \$1.99 each	peaches \$2.99 per lb. watermelon \$1.99 each
Grocery Store	peaches \$2.99 per lb. watermelon \$1.99 each	peaches \$2.99 per lb. watermelon \$1.99 each

If you select **Page content order**, Acrobat Pro will display numbers that indicate the reading order.

1 Source	2 Organic		3 Conventional	
	4 Peaches	5 Watermelon	6 Peaches	7 Watermelon
8 Farmers Market	9 \$4 per lb.	10 \$5 each	11 \$3 per lb.	12 \$4 each
13 Grocery Store	14 \$4 per lb.	15 \$6 each	16 \$2 per lb.	17 \$4 each

4. **Click any one of the cells** in the table to select it and to enable the Table Editor button.
5. Now that the Table Editor button is enabled, **click it**. A grid (typically red) will appear on top of the original table. Notice that this grid does not EXACTLY MATCH the SIZE or the STRUCTURE of the underlying table.

Source	Organic		Conventional	
	Peaches	Watermelon	Peaches	Watermelon
Farmers Market	\$4 per lb.	\$5 each	\$3 per lb.	\$4 each
Grocery Store	\$4 per lb.	\$6 each	\$2 per lb.	\$4 each

Now we are ready to use the Table Editor to set the scope of each header cell.

Set the Scope of Each Header Cell

As we said before, we must set the scope of each header cell in a table because software cannot determine the scope on its own.

In our table, we have three header cells that would be ambiguous to software:

- "Source" could label the column below it, the row to its right, or both. In fact, this isn't obvious visually, either. Without reading the contents of those cells, we couldn't be sure what this header cell labels.
- "Organic" spans two columns.
- "Conventional" spans two columns.

We also have six header cells that are unambiguous visually, but we still need to define each one's scope for software:

- Two column headers that read "Organic."
- Two column headers that read "Conventional."
- Two row headers—"Farmers Market" and "Grocery Store."

We will start with the first cell in the table, "Source."

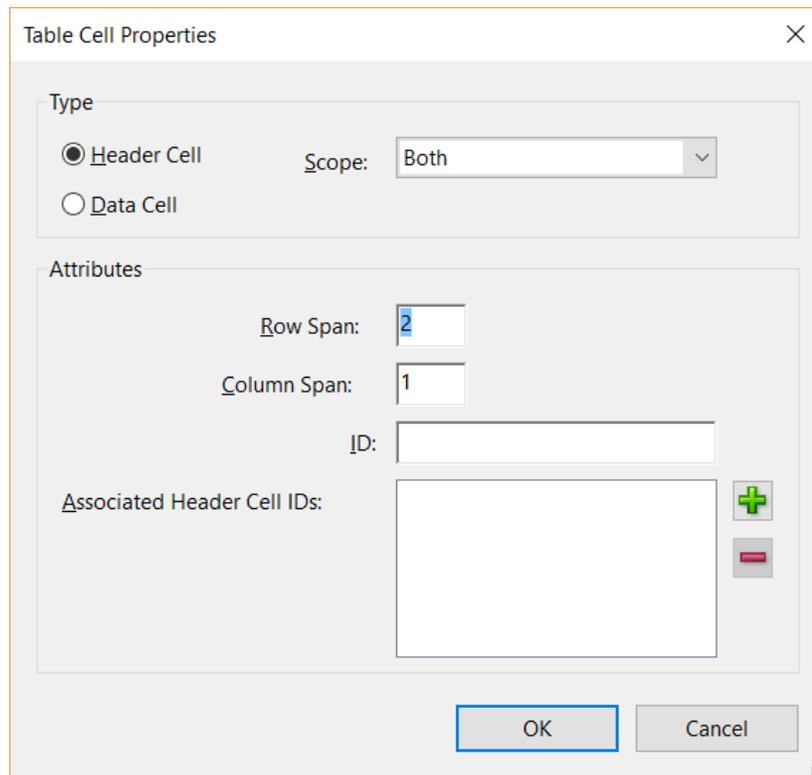
1. Select the first two cells in the first column in one of these two ways:
 - a. Draw a selection INSIDE of the cells.
 - b. Or click on one cell and then SHIFT click on the other.
 You should see a faint blue outline denoting that the two cells are selected:

Source	Organic		Conventional	
	Peaches	Watermelon	Peaches	Watermelon
Farmers Market	\$4 per lb.	\$5 each	\$3 per lb.	\$4 each
Grocery Store	\$4 per lb.	\$6 each	\$2 per lb.	\$4 each

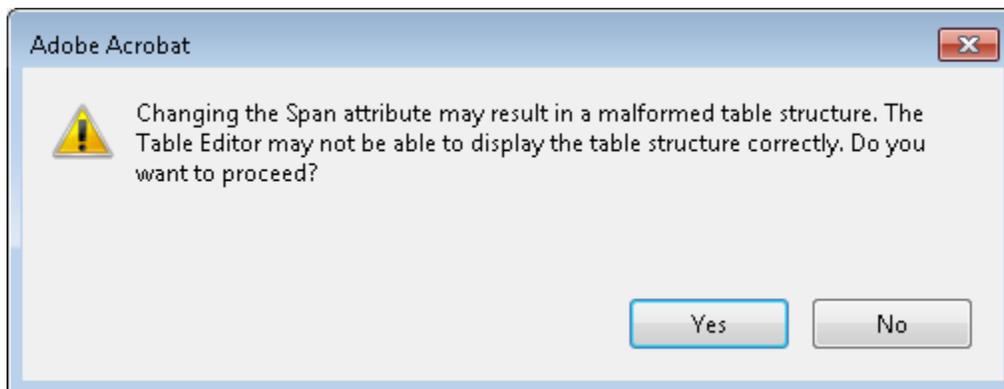
2. With the selection made, **right-click on either of the selected cells** and **select Table Cell Properties** from the menu:

Source	Organic		Conventional	
	Peaches	Watermelon	Peaches	Watermelon
Farmers Market	\$3 per lb.	\$4 each		
Grocery Store	\$4 per lb.	\$6 each	\$2 per lb.	\$4 each

3. In the Table Cell Properties dialog box that appears:
 - a. Under "Type," **select Header Cell.**
 - b. For "Scope," **select "Both."** (From this header, the reader should LOOK in both directions—DOWN and TO THE RIGHT—to find the information it labels.)
 - c. Under "Attributes," **set the Row Span to 2** and **leave Column Span set to 1.**
 - d. **Click OK.**



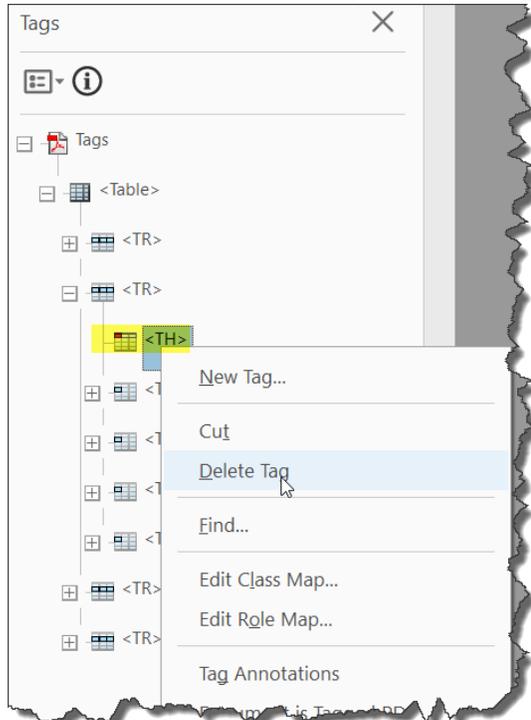
4. In the dialog box that appears, **click Yes** to process the change:



You should see that the selected rows have a faint red highlight on them. However, notice that the highlight does not **conform correctly** to the table cells.

Source	Organic		Conventional	
	Peaches	Watermelon	Peaches	Watermelon
Farmers Market	\$4 per lb.	\$5 each	\$3 per lb.	\$4 each
Grocery Store	\$4 per lb.	\$6 each	\$2 per lb.	\$4 each

5. To resolve this issue, **open the Tags tree:**



- a. **Expand the <Table> tag,**
- b. **Expand the SECOND <TR> tag then right-click on the EMPTY <TH> tag and select Delete Tag from the menu.**

With the first header cell properly scoped, let's turn our attention to the headers "Organic" and "Conventional." Because each of these headers looks in the same direction—DOWN—and has the same span—two columns—we can scope both of them in one step.

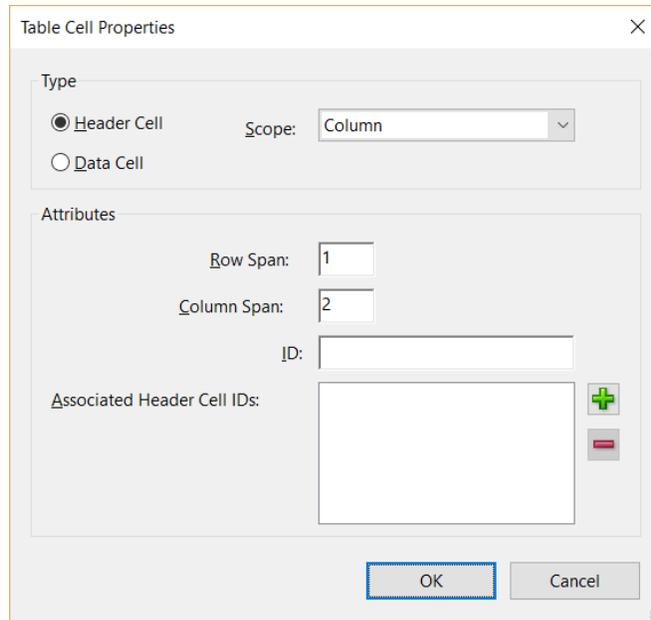
1. Enable the Table Editor again. In other words, in the Tools panel at the right, **select "Reading Order" again, click on any cell in the table, and then click Table Editor.** You should see that the highlight now conforms to the STRUCTURE (but NOT the SIZE) of the underlying table.

Source	Organic		Conventional	
	Peaches	Watermelon	Peaches	Watermelon
Farmers Market	\$4 per lb.	\$5 each	\$3 per lb.	\$4 each
Grocery Store	\$4 per lb.	\$6 each	\$2 per lb.	\$4 each

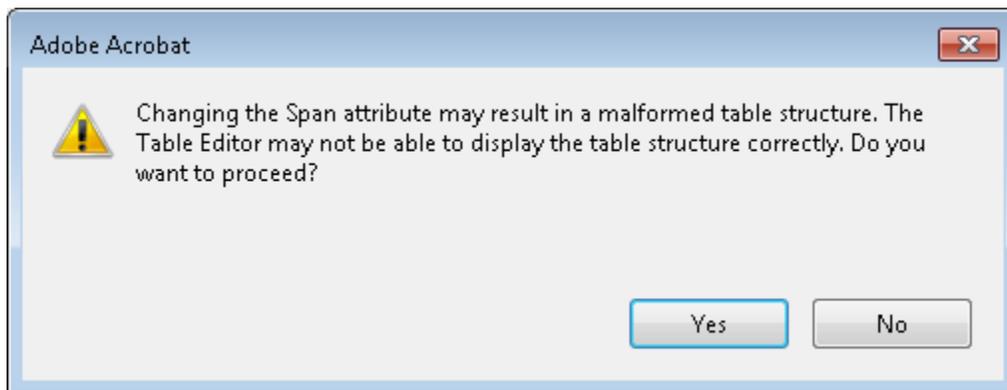
2. Now, **select the cells with the words Organic and Conventional** and then **right-click and select Table Cell Properties** from the menu:

Source	Organic		Conventional	
	Peaches	Watermelon	Peaches	Watermelon
Farmers Market	\$4 per lb.	\$5 each	\$3 per lb.	\$4 each
Grocery Store	\$4 per lb.	\$6 each	\$2 per lb.	\$4 each

3. In the Table Cell Properties dialog box that appears, we will make these selections to scope these header cells:
- Under "Type," **select Header Cell.**
 - For "Scope," **select Column.** (From each of these header cells, the reader should LOOK DOWN to the content below them.)
 - In the Attributes section, **leave the Row Span set to 1** and **set the Column Span to 2.** (Each of these header cells spans two columns.)
 - Click "OK."**



4. In the dialog box that appears, **click "Yes"** to process the change:



You should see that the two cells get highlighted.

Source	Organic		Conventional	
	Peaches	Watermelon	Peaches	Watermelon
Farmers Market	\$4 per lb.	\$5 each	\$3 per lb.	\$4 each
Grocery Store	\$4 per lb.	\$6 each	\$2 per lb.	\$4 each

Now that we have tagged the header cells that would be ambiguous, let's finish the job by tagging the other heading cells. We will start with the four column headers.

Because each of them labels one column, we can assign the scope of all four at once:

1. **Select the four cells with the words Peaches and Watermelon** in them and then **right-click and select Table Cell Properties...** from the menu:

Source	Organic		Conventional	
	Peaches	Watermelon	Peaches	Watermelon
Farmers Market	\$4 per lb.	\$6 each	\$2 per lb.	\$4 each
Grocery Store	\$4 per lb.	\$6 each	\$2 per lb.	\$4 each

2. In the Table Cell Properties dialog box:
 - a. Under "Type," **select Header Cell.**
 - b. For "Scope," **select Column.** (From each of these, header cells the reader should LOOK DOWN to the content below.)
 - c. Under "Attributes," **leave BOTH Row Span and Column Span set to 1.** (Each of these header cells labels only one column.)
3. **Click "OK."**

Table Cell Properties

Type

Header Cell Scope: Column

Data Cell

Attributes

Row Span: 1

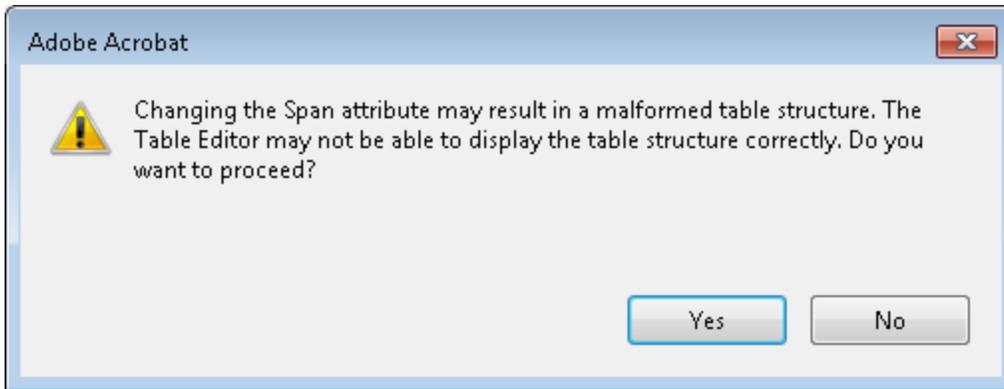
Column Span: 1

ID:

Associated Header Cell IDs:

OK Cancel

4. In the dialog box that appears, **click "Yes"** to process the change:

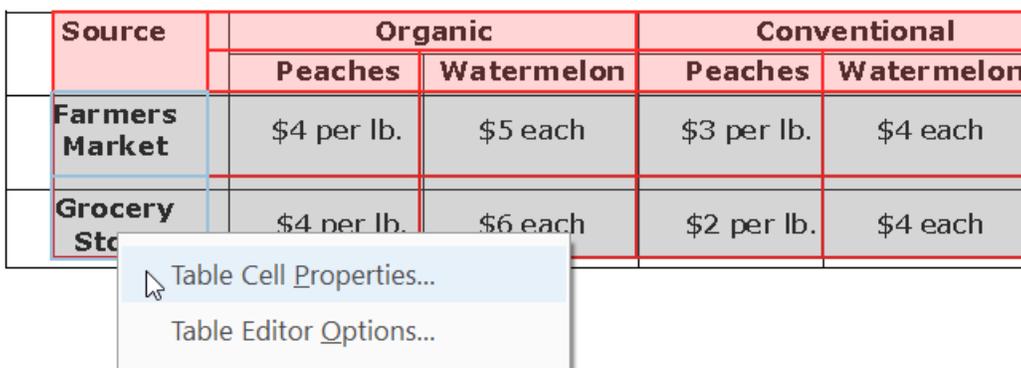


You should see all four cells get highlighted.

Source	Organic		Conventional	
	Peaches	Watermelon	Peaches	Watermelon
Farmers Market	\$4 per lb.	\$5 each	\$3 per lb.	\$4 each
Grocery Store	\$4 per lb.	\$6 each	\$2 per lb.	\$4 each

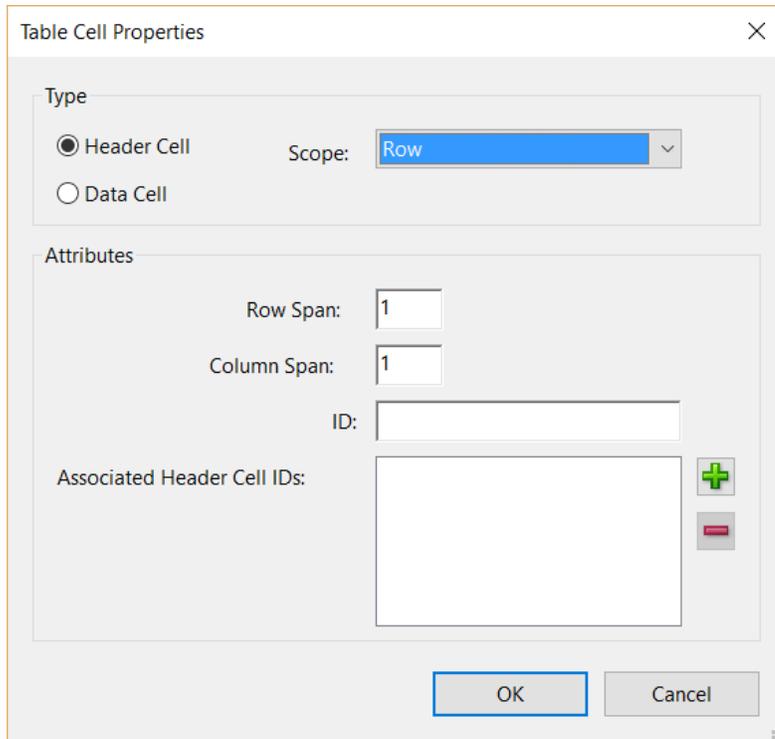
By now, you probably have the process down. Let's scope the two row headers, "Farmers Market" and "Grocery Store."

1. **Select the two cells with the phrases Farmer Market and Grocery Store** in them and then **right-click and select Table Cell Properties...** from the menu:

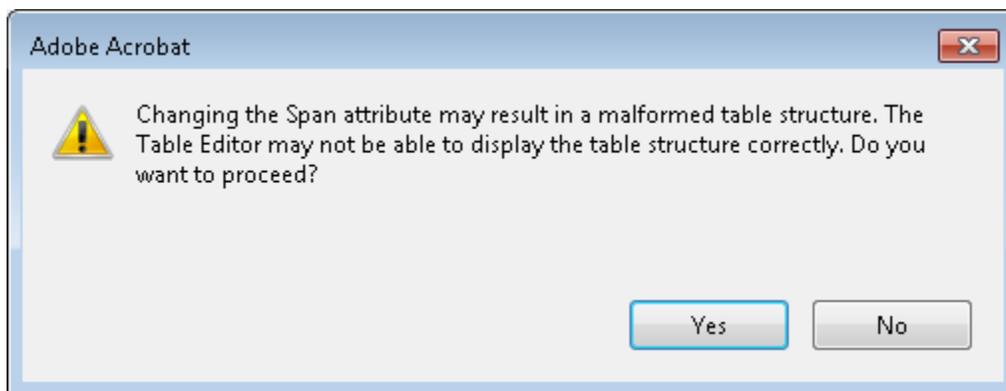


2. In the Table Cell Properties dialog box:
 - a. Under "Type," **select Header Cell.**
 - b. For "Scope," **select Row.** (From each of these headers, the reader should LOOK TO THE RIGHT.)

-
- c. Under "Attributes," **leave BOTH Row Span and Column Span set to 1.** (Each of these header cells labels only one row.)
3. **Click "OK."**



4. In the dialog box that appears, **click "Yes"** to process the change:



You should see both cells get highlighted.

Source	Organic		Conventional	
	Peaches	Watermelon	Peaches	Watermelon
Farmers Market	\$4 per lb.	\$5 each	\$3 per lb.	\$4 each
Grocery Store	\$4 per lb.	\$6 each	\$2 per lb.	\$4 each

We are done—ALL of the header cells are scoped! We have one final step: Running the Accessibility Checker to ensure that all of the tagging in our table is valid.

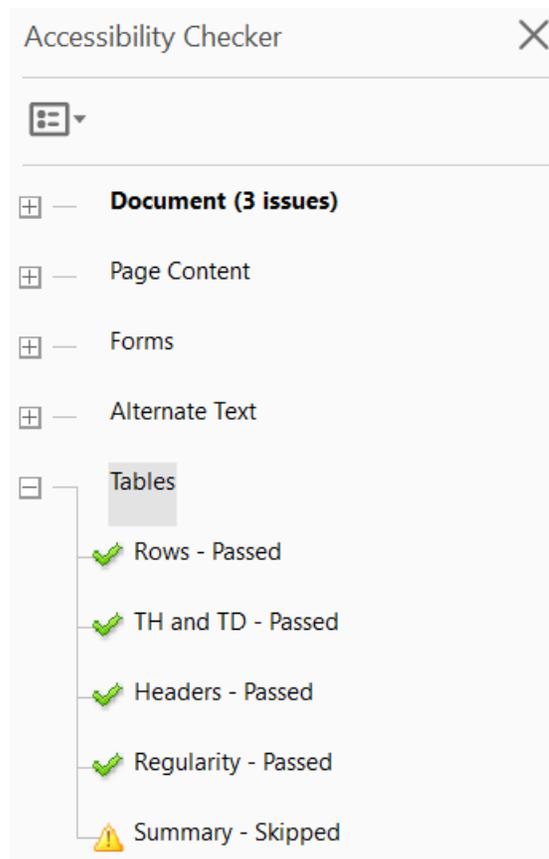
Run the Accessibility Checker

1. In the Tools panel at the right, click "Full Check."



2. The Accessibility Checker Options dialog box will open. At the bottom of this dialog box, click "Start Checking":

-
3. The Accessibility Checker panel will open. In it, **click Tables to expand that section**. You should see that each of the table's header cells passes.



Summary

In this tutorial you learned how to remediate a complex table in Adobe Acrobat Pro. In the last tutorial of this series you will learn how to use Adobe Acrobat Pro to remediate a corrupted table.

This concludes our overview of Making Accessible PDF Tables, PART 3 – How to remediate a complex table.