
Library of Congress Subject Headings

Module 5.4
Extended Examples

Policy and Standards Division
Library of Congress
February 2017

Intent of This Module

- To demonstrate the analysis of resources and assignment of simple headings
 - Will examine the titles, publishers' descriptions, and tables of contents of two resources to determine their scope and coverage
 - Will search LCSH for authorized headings that reflect the scope and coverage

In this module, we will demonstrate the use of titles, publishers' descriptions, and tables of contents to analyze a resource to determine the resource's scope and coverage.

We will then search LCSH to find the authorized headings that reflect the scope and coverage of the resources, and use the principles we learned in the previous modules of this unit to determine how many headings should be assigned, and in what order.

Advances in Cryptology During the Second World War

This groundbreaking study explores the remarkable advances in cryptology made by the major combatants in the Second World War: France, Great Britain, Germany, Japan, the Soviet Union, and the United States.

Two efforts that had a major impact on the conduct and outcome of the war – the Enigma machine developed by Germany, and ULTRA, Great Britain's signals intelligence program based in Bletchley Park that cracked the Enigma machine's code, among other significant actions – are extensively explored.

Our first example is called *Advances in Cryptology During the Second World War*.

Try to figure out which of the concepts in the title and the description on the screen are significant when you are assigning subject headings. You are looking for keywords that help you understand the focus of the resource.

Please click the mouse when you are ready to continue.

Advances in Cryptology During the
Second World War

This groundbreaking study explores the remarkable advances in cryptology made by the major combatants in the Second World War: France, Great Britain, Germany, Japan, and the United States.

Two efforts that had a major impact on the conduct and outcome of the war – the Enigma machine developed by Germany, and ULTRA, Great Britain's signals intelligence program based in Bletchley Park that cracked the Enigma machine's code, among other significant actions – are extensively explored.

The key concepts in the title and description are underlined and in a different color from the rest of the text.

The concrete nouns in the title – cryptology and Second World War – are important. Recall that one of the principles of LCSH assignment is to assign subject headings to bring out topics in the title, if they are relevant for retrieval purposes. In this case, the title accurately reflects the contents of the resource, which is about cryptology during a particular war.

“Major combatants” is important because it shows that the resource’s scope is not limited to one particular country’s cryptological advances.

So does this mean that it’s not about Germany or Japan? Yes. The major combatants of World War II were Germany, Japan, the United States, France, the Soviet Union, and many others: the world was at war. So, saying “major combatants” implies that it’s more than just one country.

Also underlined on your screen are “Enigma machine,” “ULTRA,” and “extensively explored.” It is always a good idea to take note of any special or narrower topics that the publisher and author emphasize in their descriptions, because it helps you understand what the resource is *supposed* to be about. The intent of authors, editors, and publishers is vital when determining which headings to assign. However, the phrase “extensively explored” can be open to interpretation. Therefore, we cannot rely on the description alone. We also have to consider the table of contents and other evidence in the resource to determine whether the “extensively explored” topics match the threshold for assignment as subject headings. Remember that in order to assign a heading for a topic, it must be represented in at least 20 percent of the resource.

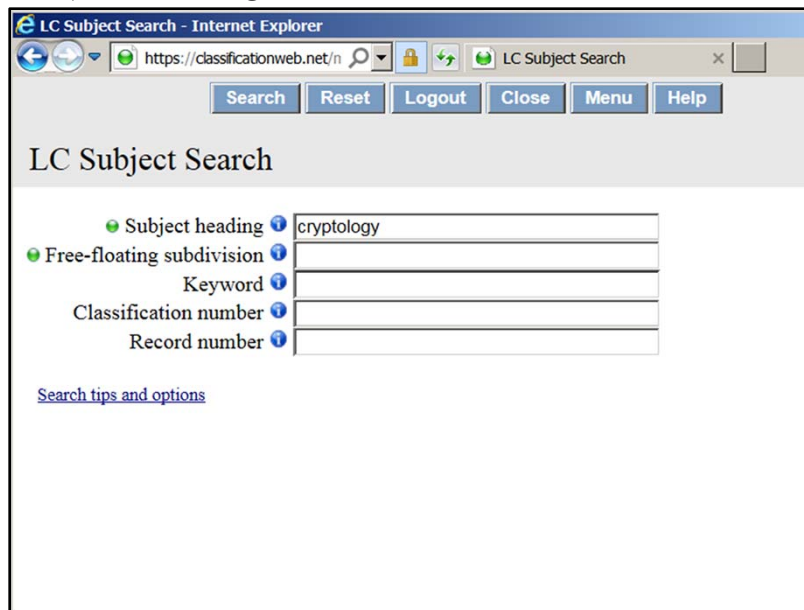
Advances in Cryptology During the Second World War	
Introduction	i-xx
Ch. 1: Early 20th century cryptology	1-20
Ch. 2: World War II cryptology: an overview	41-70
Ch. 3: The Axis	71-100
Ch. 4: The Allies	101-130
Ch. 5: Enigma: Germany's best effort	131-270
Ch. 6: Great Britain counters: ULTRA	271-400
Conclusion	401-410

Let's analyze the table of contents to see if Enigma and ULTRA are represented in at least 20 percent of the resource.

The entire resource is 430 pages long (that is, twenty pages for the introduction plus 410 pages for the text). This means 10 percent is equal to 43 pages, and therefore 20 percent is 86 pages. Chapter 5 is specifically about Enigma, and it is 139 pages long. Chapter 6 is about ULTRA, and is 129 pages long. Therefore, both of those chapters meet the 20 percent threshold, and Enigma and ULTRA should both be assigned as subject headings.

We are also going to assign headings to represent the first four chapters of the resource, which are about cryptography in World War II in general. Neither chapter 3 about the Axis nor chapter 4 about the Allies constitutes 20 percent, so we will not assign specific subject headings to cover either of those.

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This was a live demo. The slides on the handouts do not precisely match the slides in the audio-visual lecture.

Now let's search for authorized headings that reflect the contents of the resource.

The first keyword is Cryptology.

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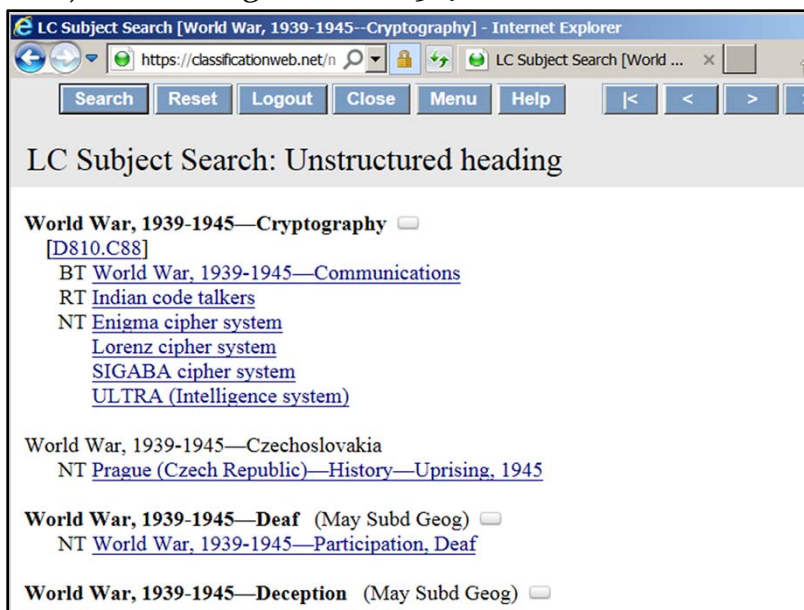


The USE reference leads us to Cryptography, which is the authorized heading.

Notice the SA reference, which says, “See also the subdivision –**Cryptography** under individual wars.” It even has an example, which is for World War II.

Since it is good practice to always view the entry for the heading we think we want to use (which is probably **World War, 1939 1945—Cryptography**), let’s do that.

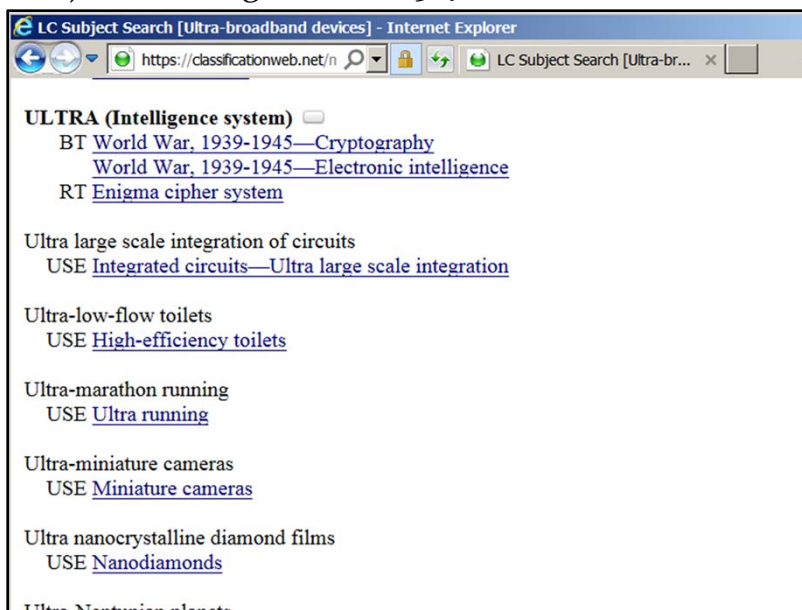
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I'll go ahead and type that in.

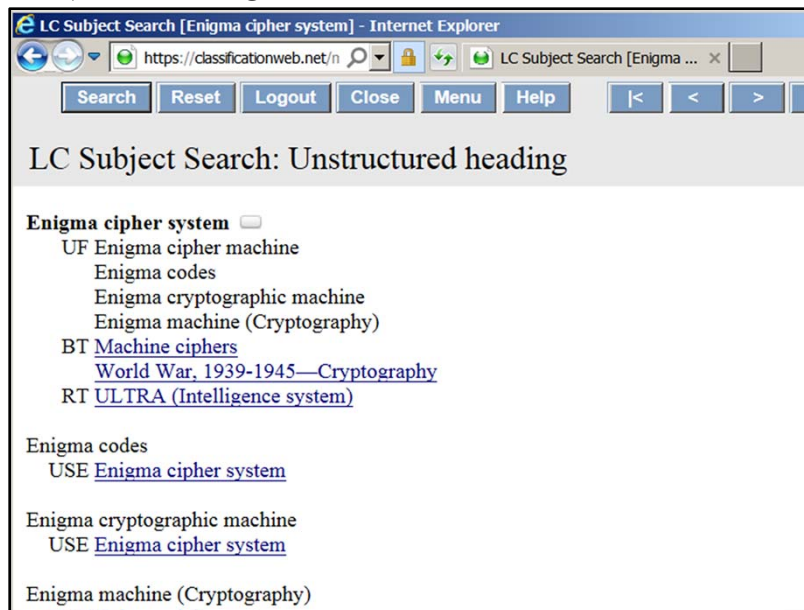
We see that it is indeed an authorized heading, which would be perfect for the resource. Notice that **ULTRA** and **Enigma** are both NTs. We could just click to see their entries, but let's reset and search instead.

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The first hits in the browse display are UFs to other concepts, but if we look down the list, we see the heading **ULTRA (Intelligence system)**. Is it the correct heading? Yes, and we know that by looking at the broader terms, which refer to intelligence systems and cryptography of World War II. Notice that there is also an RT, which is very useful.

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If we click on the RT, **Enigma cipher system**, we again see from the references in that record that it is the authorized form of our third keyword: **Enigma**.

Advances in Cryptology During the
Second World War

Subject headings:

Enigma cipher system.

ULTRA (Intelligence system)

World War, 1939-1945—Cryptography.

These three headings bring out the main points of the resource, all of which constitute 20 percent of it. The first two headings cover the two specific topics that each constitute over 20 percent of the content, the Enigma cipher system and ULTRA. The third heading, **World War, 1939-1945—Cryptography**, covers the entire resource.

Recall that SHM instruction sheet H 180 says that there is no fixed number of headings required. Sometimes one heading is enough, generally a maximum of six is sufficient, but we can assign up to ten if we follow the Library of Congress' practices. Since we have chosen only three headings to assign, the number of headings fits comfortably into the principle.

Another principle of heading assignment also applies: the rule about general topics and subtopics. Recall that the principle states, "if a work discusses a general topic with emphasis on a particular subtopic ... assign headings for both the general topic ... and for the subtopic ... provided that the treatment of the latter forms at least 20 percent of the [resource]."

For this resource, the general topic is Cryptography in World War II, and the subtopics are ULTRA and Enigma. Since the portions on ULTRA and Enigma are each at least 20 percent, yes, we can assign them as subject headings.

Now we need to consider the order of the headings.

Advances in Cryptology During the Second World War

- Review of SHM H 80, Order of Subject Headings
 - The first heading represents the predominant topic of the resource
 - If there are two equally important predominant topics, assign them as the first two subject headings
 - Headings for secondary topics can be assigned in any order, following the heading(s) for the predominant topic(s)

Let's briefly review the rules on the order of subject headings, which are contained in SHM instruction sheet H 80.

The heading for the predominant – that is, the most important – topic always comes first. If there are two equally important predominant topics, then those headings are assigned as the first two headings.

Any headings for other topics that constitute at least 20 percent of the resource are assigned after the heading or headings for the predominant topics.

Now that we have that background, let's think about the order of headings for *Advances in Cryptology During the Second World War*.

Advances in Cryptology During the
Second World War

Subject headings:

Enigma cipher system.

ULTRA (Intelligence system)

World War, 1939-1945—Cryptography.

What is the predominant topic here?

We could say that ULTRA and Enigma are together the most important topics. However, remember that cryptography in World War II is the general topic, and the ULTRA and Enigma systems are subtopics. Usually in this case, the general topic is considered to be the predominant topic and the subtopics are secondary.

Think of it this way: what is the overarching topic of the resource? The answer: advances in cryptography.

Advances in Cryptology During the
Second World War

Subject headings:

World War, 1939-1945—Cryptography.

ULTRA (Intelligence system)

Enigma cipher system.

World War, 1939-1945—Cryptography is the first heading. The secondary headings, ULTRA and Enigma cypher system, could be in the order in which they are presented in the resource, in alphabetical order, or whatever. It does not matter in the least.

Migratory Species and Climate Change

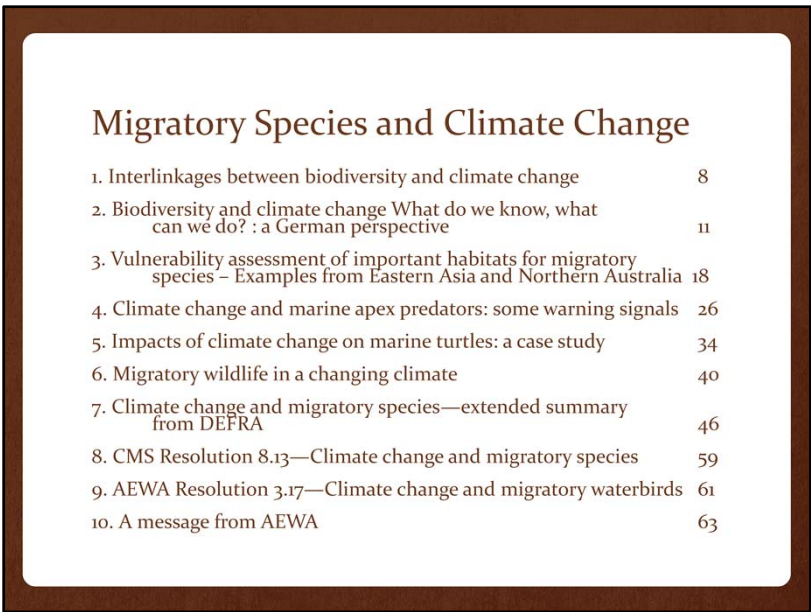
Other title information: Impacts of a Changing Environment on Wild Animals

“Climate change will increasingly have dramatic impacts on migratory species from whales and dolphins to birds and turtles. According to this report, around a fifth of bird species could be affected by rising sea levels, erosion and greater wave action linked with climate change. Unchecked, climate change will pile on more pressure making it increasingly difficult for the world to meet the 2010 target - to reduce the rate of loss of biodiversity by 2010. The report argues that conserving and more sustainably managing biodiversity in a climatically-changed world, is of the highest economic importance and important in the fight against poverty as well”--Publisher's description.

Now let's look at a second example. As before, we are asking you to take some time to read the publisher's description. As you read it, you will notice that it mentions a lot of valuable keywords and concepts. A good approach is to read it, pause to think about what you read, and then read it again. On the second reading, you should be able to get a sense of whether all of those individual concepts are important, or if it would be better to consider them instances of a broader idea that you can summarize.

I would like you to note for yourself which concepts you believe are important.

And please click the mouse to move forward when you are ready.



Migratory Species and Climate Change	
1. Interlinkages between biodiversity and climate change	8
2. Biodiversity and climate change What do we know, what can we do? : a German perspective	11
3. Vulnerability assessment of important habitats for migratory species - Examples from Eastern Asia and Northern Australia	18
4. Climate change and marine apex predators: some warning signals	26
5. Impacts of climate change on marine turtles: a case study	34
6. Migratory wildlife in a changing climate	40
7. Climate change and migratory species—extended summary from DEFRA	46
8. CMS Resolution 8.13—Climate change and migratory species	59
9. AEWA Resolution 3.17—Climate change and migratory waterbirds	61
10. A message from AEWA	63

Here is the table of contents for the resource.

Please read through it, and pick out the key concepts. You can then compare those key concepts to those that you picked out in the publisher’s description and the title. The lists may not match, but taken together, the two lists should give you a good idea of the focus of the resource.

Take a few minutes, and then click the mouse to proceed to the next slide.

Migratory Species and Climate Change	
1. Interlinkages between biodiversity and climate change	8
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Now I would like you to think about which of those key concepts appear to constitute at least 20 percent of the resource. The numbers on the right-hand side of the screen are page numbers. The resource is 63 pages long in total. That means at least 12 pages would need to be dedicated to a particular topic for the 20 percent rule to apply.

Can you remove any of the key concepts from your lists, based on this criterion?

Click anywhere on the slide when you are ready to proceed.

Migratory Species and Climate Change

Other title information: Impacts of a Changing Environment on Wild Animals

“Climate change will increasingly have dramatic impacts on migratory species from whales and dolphins to birds and turtles. According to this report, around a fifth of bird species could be affected by rising sea levels, erosion and greater wave action linked with climate change. Unchecked, climate change will pile on more pressure making it increasingly difficult for the world to meet the 2010 target - to reduce the rate of loss of biodiversity by 2010. The report argues that conserving and more sustainably managing biodiversity in a climatically-changed world, is of the highest economic importance and important in the fight against poverty as well”--Publisher's description.

Here are the keywords that I selected in the title and the publisher’s description. Do they match your keywords?

I chose the two significant phrases in the title, “migratory species” and “climate change.” In this case, it seemed as though the title is indicative of the contents of the resource. I also chose “wild animals” from the subtitle.

I did not select examples of concepts that appear in lists, like “from whales and dolphins to birds and turtles” because the intent seemed to be to indicate the wide-ranging nature of the resource rather than to focus on those specific animals.

I also did not select the effects of climate change – “rising sea levels, erosion and greater wave action” because the intent of the resource appears to be to describe the effects of climate change on migratory animals, not to describe climate change per se.

I did underline the word “biodiversity” because that seemed important when talking about migratory animals. I also underlined “poverty” and “economic” because those concepts could be important points in the resource, and we should investigate that further.

Migratory Species and Climate Change	
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In this slide, the key concepts in the table of contents are underlined. Is your list similar to mine? Notice that climate change is a constant theme, throughout.

You will also notice that I underlined several geographic areas and species. They are key concepts, but are they concepts that should be brought out in the subject headings?

Finally, the ideas of poverty and economics are not mentioned anywhere in the table of contents. If we had the entire resource in our hands, we might flip through it to see if they are important aspects of the resource. But given that neither is mentioned in the table of contents, which seems to be focused on purely scientific kinds of topics, it is doubtful that poverty and economics would meet the 20 percent threshold for inclusion.

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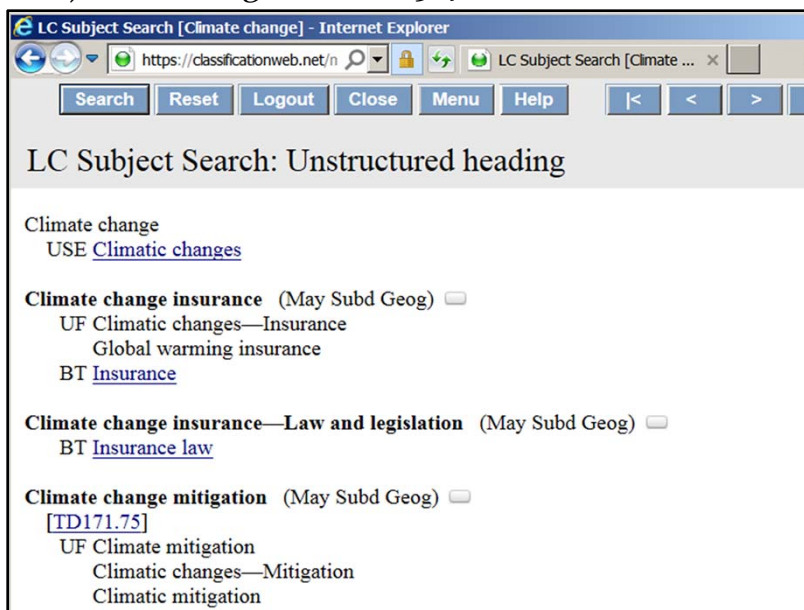
After doing a bit of math, I removed the underlining from:

- Biodiversity in chapters 1 and 2
- German in chapter 2
- Habitats, Eastern Asia, and Northern Australia from chapter 3
- Marine apex predators in chapter 4
- Marine turtles in chapter 5, and
- Waterbirds in chapter 9

None of these topics constitute 20 percent of the resource., so we are left with climate change and migratory species, which are both in the title of the resource and keywords in the publisher’s summary. The other title information also provides us with wild animals.

Now that we have some keywords gathered, we are ready to look for authorized headings in LCSH.

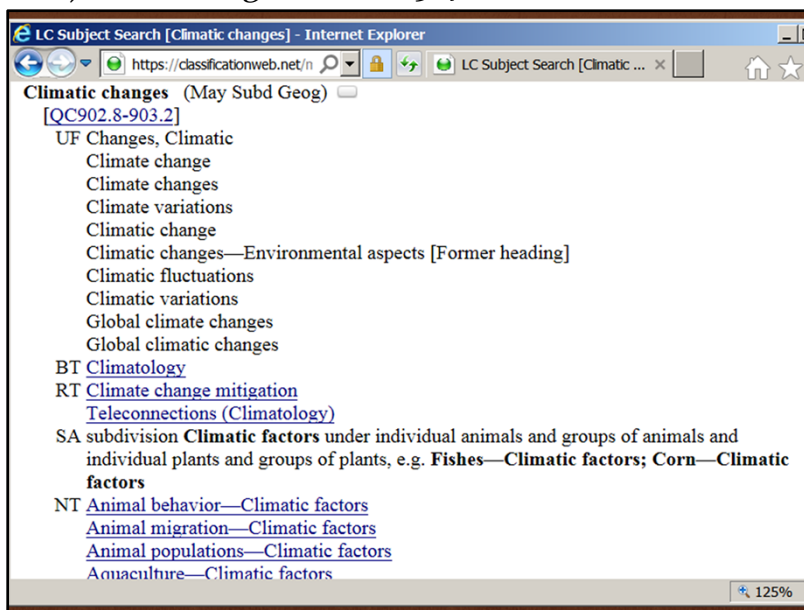
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Let's take these keywords and see how they should be represented in subject headings.

I'll search the first keyword on our list, which is climate change. *Climate change* has a USE reference for **Climatic changes**.

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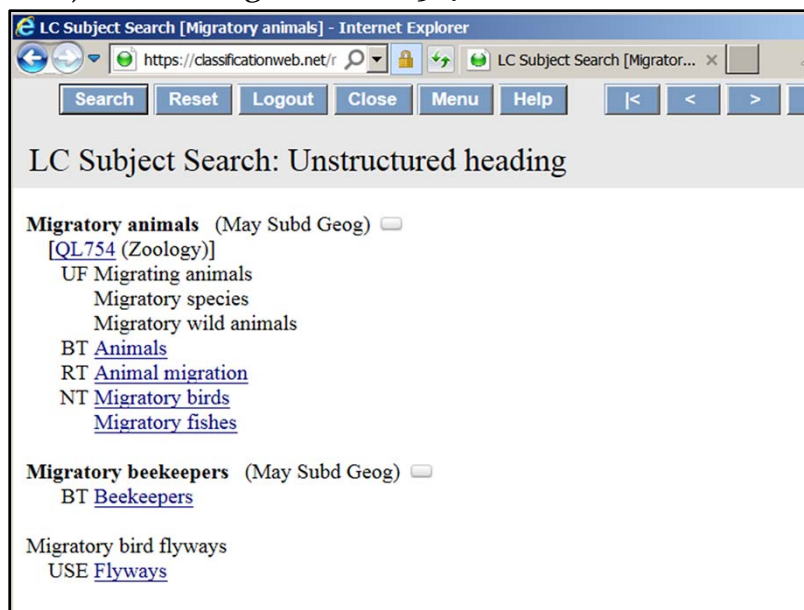


I'll click on that to display the full record. This heading refers to **Climatic changes** as a general concept, and not specifically to climatic changes as they relate to migratory animals. And the heading is probably too broad.

But take note of the SA reference in this entry, which states, “See Also subdivision **Climatic factors** under individual animals and groups of animals and individual plants and groups of plants.” It also gives some examples. The examples are not pertinent to the resource that we have in hand, but we can use them to help us formulate a heading.

Since the subdivision **—Climatic factors** can be used under individual animals and groups of animals, it is useful to consider whether our key concepts include any groups of animals.

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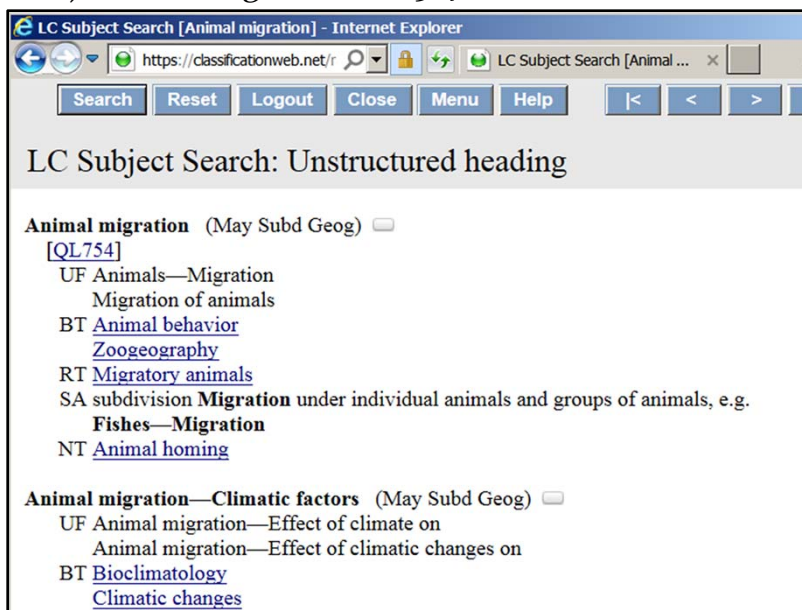
Migratory species is one of our concepts. Let's search migratory species. This leads us to **Migratory animals**.

Migratory animals is a group (or type) of animals, so based on the SA reference we saw earlier, we can make the heading **Migratory animals—Climatic factors**. You can see from this screen that **Migratory animals—Climatic factors** is not established. This is a free-floating combination. For now, just take my word for it that the rules allow us to create this string. We will explain why it is allowable in a later module.

Take a look at the references on **Migratory animals**. One of the UFs is *Migratory wild animals*, and wild animals is one of our key concepts. Since the heading **Migratory animals** includes wild animals, we do not need to assign a separate heading for wild animals.

There is another very useful reference in this record, the RT for **Animal migration**. If I click on that, we can see a list of subdivisions, including **Animal migration—Climatic factors**. That heading is useful in bringing out the scope of the resource, so let's include that, too.

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If I click on that, we can see a list of subdivisions, including **Animal migration—Climatic factors**. That heading is useful in bringing out the scope of the resource, so let's include that, too.

Migratory Species and Climate Change

- Subject headings:
 - Climatic changes.**
 - Animal migration—Climatic factors.**
 - Migratory animals—Climatic factors.**

These are the headings that we have found by searching LCSH and following the instructions.

The first question to ask ourselves now is whether all three are necessary, since they duplicate each other quite a bit. Is the resource about climate change in general? No, and the same concept is brought out with the subdivision –**Climatic factors**. Let’s remove **Climatic changes** from the list.

Migratory Species and Climate Change

- Subject headings:
 - ~~Climatic changes.~~
 - Animal migration—Climatic factors.**
 - Migratory animals—Climatic factors.**

Now, what about the other two headings? Do we need them both?

Recall that the table of contents focused on the animals, not on the process of migration. It used the phrases migratory species, marine apex predators, marine turtles, and migratory wildlife.

The emphasis seems to be on the species, not on the process of migration. So I think we need to remove the heading **Animal migration—Climatic factors.**

Migratory Species and Climate Change

- Subject headings:
 - ~~Climatic changes.~~
 - ~~Animal migration—Climatic factors.~~
 - Migratory animals—Climatic factors.**

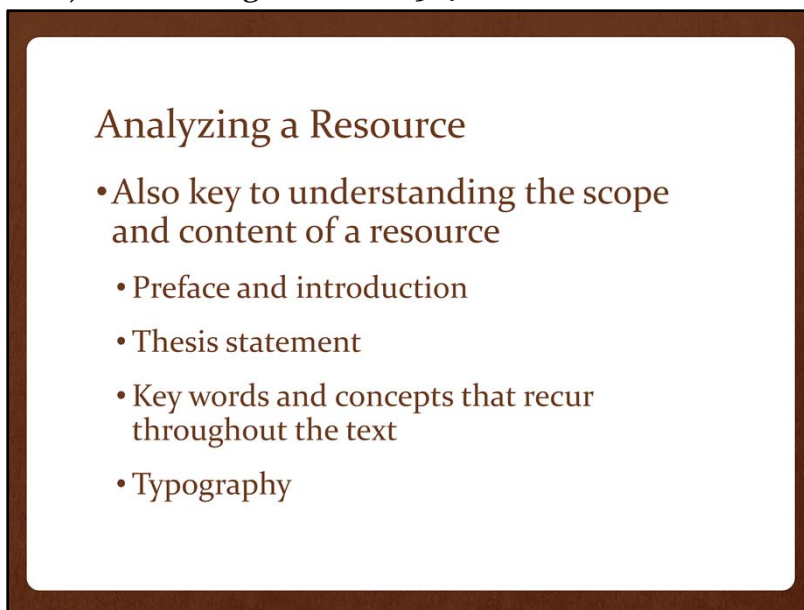
We are left with the one heading that summarizes the overall contents of the resource. Recall that the most basic principle for assigning headings is to reflect the overall subject of the resource, and that's what this heading does.

Subject cataloging is a process. It is always a good idea to write down any headings that seem pertinent when you are searching LCSH. You never know what might be useful, and it is easier to consult that piece of paper than try to reconstruct a search when you cannot quite remember the heading that you found. You can always decide later that some of the headings are not necessary. So, writing things down is key in this process.

Analyzing a Resource

- Key to understanding the scope and content of a resource
 - Titles
 - Tables of contents
 - Publishers' descriptions

In this module we have demonstrated the importance of studying titles, tables of contents, and publishers' descriptions in order to understand the scope and contents of a resource.



Analyzing a Resource

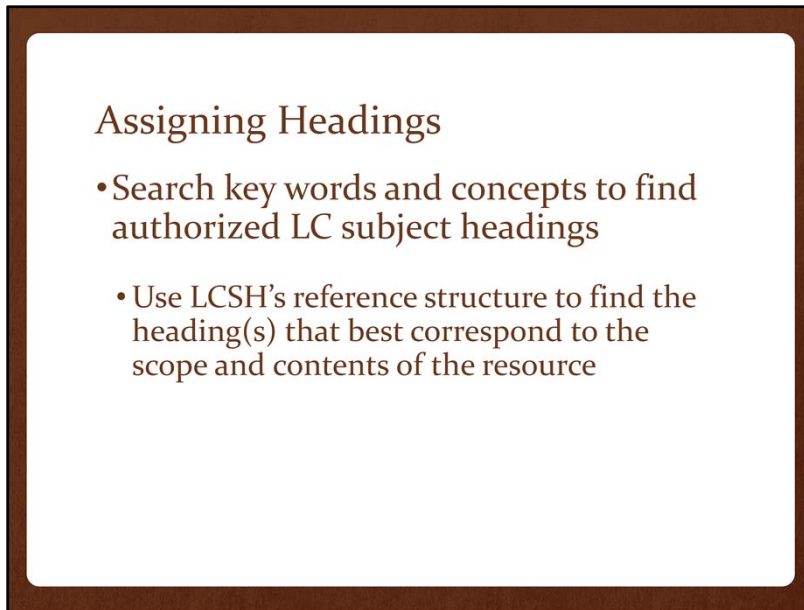
- Also key to understanding the scope and content of a resource
 - Preface and introduction
 - Thesis statement
 - Key words and concepts that recur throughout the text
 - Typography

It is also important to include other parts of the resource in your analysis.

We were not able to demonstrate them here, due to space and time considerations, but you should also examine the following:

- The preface and/or introduction, which is usually indicative of the author's or editor's intent.
- The thesis statement, which is a concise statement of what the author or editor plans to discuss or prove.
- If the resource is a book or website, you should also quickly scan to find key words and concepts that appear over and over in the text.

Typography can also play a part, particularly if there are any words that are italicized or boldfaced, or otherwise given prominence.



Assigning Headings

- Search key words and concepts to find authorized LC subject headings
- Use LCSH's reference structure to find the heading(s) that best correspond to the scope and contents of the resource

After you have analyzed the resource and have a good idea what it is about, the next step is to search the key words and concepts to find authorized subject headings.

Quite often, you will not find the best heading with your first search, but the reference structure of LCSH – the UFs, BTs, RTs, NTs and See Also references – will lead you to the appropriate headings.