**Monitoring Package Data Analysis RStudio Demo**

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9m 42s

AI- Generated Video Transcript – not reviewed for accuracy

This is a short video to demonstrate one of the data analysis scripts that we have provided in our monitoring packages.  
This one is for stream Canopy cover package which generates metrics related to the amount of shade that's visible from the water surface in a stream.  
So at this point you'll have.  
You'll have collected field data and you'll have a CSV file put into a raw data file folder on your computer, and you'll also have created an output folder on your computer so that you can receive the various outputs from this analysis, which will be figures and tables, and the results of statistical tests.  
So open on my screen, there's that RMD file open in our studio on the left hand side and next to it on the right is an HTML file that's also provided in the monitoring package, and we recommend having both of these open at the same time so that you can see the written instructions and the HTML file at the same time as the code and.  
So if you if you're not sure where you are and if you open this outline box within our studio, it will show you the main headings and these headings correspond to the titles on the HTML document.  
So when you open our studio and we'll start with an empty environment up here at the top, right, if you have been working in hour before, you can return to this condition by going to the session drop down and click and clear workspace and that essentially just removes any of the functions or values that were previously defined by code that you used before in art and that will avoid anything from a previous script being mistakenly used in this current one.  
So to run the script and we recommend you go step by step following the guidance in the HTML document and then reading along through that as you go through the code.  
I won't read through it now, but I'll show you the actions that you would take.  
And so as you proceed, you'll run the script chunks in order the chunks are defined here and you can see little green arrows next to them, each individual trunk, and so to run that particular chunk, you can click that arrow.  
There's also the option for this Gray arrow above a green bar, which is to run all the trunks above, and you can use that when you're more familiar with the script.  
If you want to go to a particular location and just run that particular part, this makes sure that everything is run in order above that, and ultimately you could also go to run and there's other options, including run all, which you might use when you're very familiar with the script, and it will just run through all of the scripts.  
But we've definitely recommend, especially the first few times you use this script, is to go through step by step with the text.  
The reason for that is we have lots of prompts in the text to consider various things for interpretation and options for understanding the data, and so it's best to go through those in order and with a bit of time to reflect.  
And So what I'll do is I'll just run through this script.  
The string kind of be cover script just by clicking these run buttons in order and assuming that I'm reading along in the HTML one, there's a lot of stuff here, a lot of chunks that aren't describes in this HTML file.  
That's because these are just setting up the environment, so telling what or various ways will want to export the data and so on.  
And then there's some data cleaning things that that happen here to try and correct any simple mistakes that may be in the data entry.  
Um, you'll see here.  
I've got to guidance format in our studio, which corresponds to guidance format in the HTML document.  
I'll keep going to the next item and this is setting the export location for the files and at this point the console down here has come up with a prompt saying specify the output folder and this is where you'll enter the location on your computer that you want any outputs from this to go, so I've just entered this location on my computer and press enter and then.  
Are in studio is again ready for you to continue.  
The next prompt is to specify the raw data folder, and so in this case you do have.  
A prompt in the HTML file saying this is where you need to enter it.  
So again, I've already preempted my directory where the raw data is, so I can just click go.  
You'll just paste your date, your location here, and then click the green arrow and then we can continue.  
So there's going through some various options, um running each of them.  
You you don't need to pay too much attention to what's happening at this point, unless you're interested in doing so, and this is the first part that produced as something.  
It displays a table in here.  
If you've got the full screen open, it's a bit easier to to look at the full table and just summarizing the data after it's been cleaned a little bit and you can view it there and we recommend taking a look through the data before continuing just to make sure everything looks OK.  
They can return, keep running the script until we get to the point where we produce our first plot, and sometimes it takes a few seconds when the green bars there, it means it's working.  
So you can't continue.  
When I was doing that, but it's produced here, it's printed within our studio.  
This plot it's also exported the plot to the folder that you set up as your output folder, which will access in a second.  
And so continuing to follow along, you'll go through and you'll spend some time trying to interpret what that means as you go through.  
You'll keep running every single chunk you encounter, and it should give you some more information that will help for your interpretation.  
So in this case you've got summary metrics for these sites.  
And then we move on to the inferential statistics and and sometimes a few options with inferential statistic.  
So there's a bit more text to just describe exactly what we're doing.  
There's a section that asks you to define some before and after years that's highlighted again in the HTML.  
When we want you to actually define things asking you which years of data you're comparing, so you'll run that once you want to do years of data, and then you'll keep running the trunks 1 by 1.  
We generate a series of plots that you may be familiar with when you're making sure your inferential test is appropriate, so you will go through those and there might be some changes you need to make, or some considerations about the data related to this, which I won't go into now.  
And, but there's instructions within the script for what to do in.  
In those situations, we included some information on how to do a transformation of the data if necessary, which you can refine if you need to, but in most cases, hopefully the one that we've assigned should work for most people and then we can run the ANOVA.  
So we're running an inferential test at this point.  
Again, it prints out the outcome of the Innova there and that that will also be exported to your folder that you set as an output folder.  
And then there's some.  
Additional writing about guidance for interpretation, and finally there's another this is an optional section in the beta regression and this is is an in case you're Data was unsuitable for the ANOVA.  
Based on those, the test that we had above, there's basically another another different type of test you can run and you can run this, but you would just have to be aware when you're interpreting the inferential tests.  
Which one you're interpreting and why and which might?  
It shouldn't be too complex to interpret because we have provided a little bit of extra guidance on how to interpret it, but it's always worth talking to someone if you're unsure about the inferential tests and that that's it.  
That's the bottom of the of this script, and so you can you can view things within our studio or you can go to your um.  
But your output folder file which one second.  
I'll find mine.  
Show you what it looks like and.  
So this is this is what the the folder looks like um with these items that we've just exported.  
So we've got summary metrics of the CSV.  
We've got the plot as a PDF and then we've got a number of text files which are showing the results of the statistical tests.  
So you can open those in view to help with your interpretation, and I think that's everything for this video.