



National Environmental Science Programme

Guide for producing science communication videos of surveys of fish and benthic assemblages

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Project D2 - Standard Operating Procedures for survey design, condition assessment and trend detection

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Milestone 38 – Research Plan v5



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EXECUTIVE SUMMARY

An increasing number of research projects are producing underwater footage as part of their data collection, particularly those being conducted for Parks Australia. These are generally collected as part of video surveys targeting fish and benthic assemblages (e.g. benthic stereo-baited remote underwater video systems (stereo-BRUVs), pelagic stereo-BRUVs or remotely operated vehicles). To provide consistency in the preparation and presentation of this imagery and related science communication products there is a need to provide a template to guide research providers. This report presents a simple approach to producing such science communication products, including the use of specific logos and animation sequences. The use of this guide will enable researchers to connect with a general audience through sharing on social media and public presentations.

1. INTRODUCTION

This guide is designed for use by researchers producing underwater footage for Parks Australia, and to provide a template to generate consistent science communication products. We present a simple approach to produce science communication videos from video surveys targeting fish and benthic assemblages (e.g. benthic stereo-baited remote underwater video systems (stereo-BRUVs), pelagic stereo-BRUVs or remotely operated vehicles). Video based survey methods can provide useful imagery for science communication (see Langlois et al. 2020).

Producing these videos is fast, easy and allows consistent formatting including the use of specific logos and animation sequences. The videos created using this guide will enable researchers to connect with a general audience through sharing on social media and public presentations.

This guide has been used successfully to produce science communication videos for Marine Biodiversity Hub surveys of the Ningaloo Marine Park (Commonwealth) and South-west Corner Marine Park using imagery collected from baited remote underwater stereo-video systems.

2. VIDEOS FOR SCIENCE COMMUNICATION

The video template is made up of the following components:

2.1. Title sequence

The video template contains two title scenes:

- *Brief title:* The title of the project, including the location of the study and any marine park names e.g. “Fishes and habitat in the Two Rocks region of the South-west Marine Park” (See Table 1 for formatting; Fig. 1).
- *Description:* A more detailed description of the project, including the year of the study and the method used e.g. “In 2010, marine scientists deployed cameras in the South-west Marine Park. They used baited remote underwater video systems to discover the fishes and habitats” (Fig. 2).

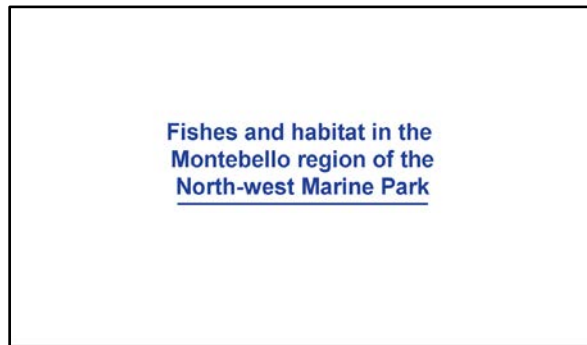


Figure 1 Formatting of 'Brief title': see Table 1 for text formatting

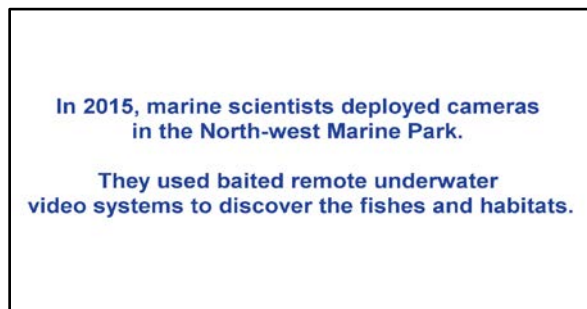


Figure 2 Formatting of 'Description': see Table 1 for text formatting

The video template includes three maps of the study location:

- *First map*: Broad map (country scale) with a rectangle indicating the scale of the second map. This map should include any marine parks, simplified to only No-take Marine Reserve (IUCN II) and Marine. The lead organisations logo should be displayed in the top left corner of the video from this section onwards (Fig. 3).
- *Second map*: Zoomed map gives a closer look at the study area to look at the broader area. Includes marine parks. Rectangle shows the scale of the third map (Fig. 4).
- *Third map*: Study area map. Circle indicating where the study took place. Marine parks are displayed (Fig. 5).

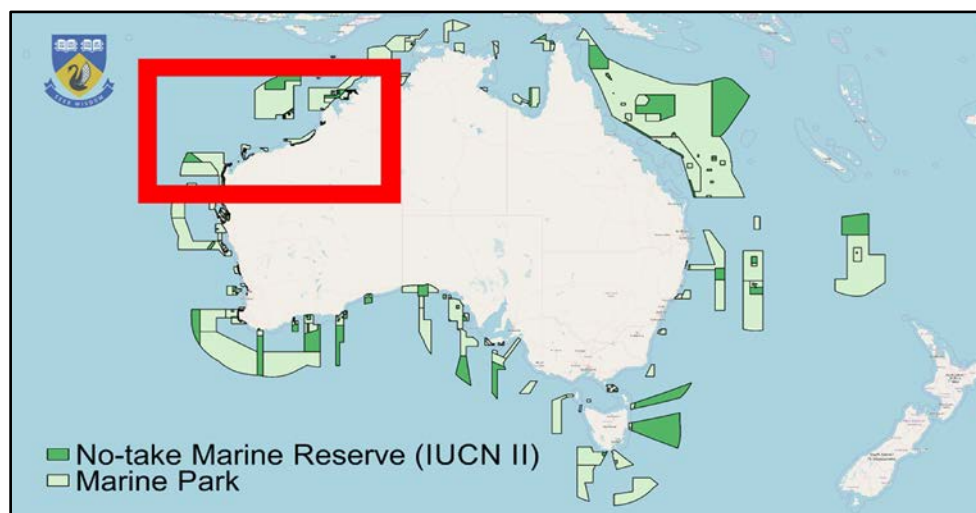


Figure 3 Example of 'First map': see Table 1 for formatting instructions

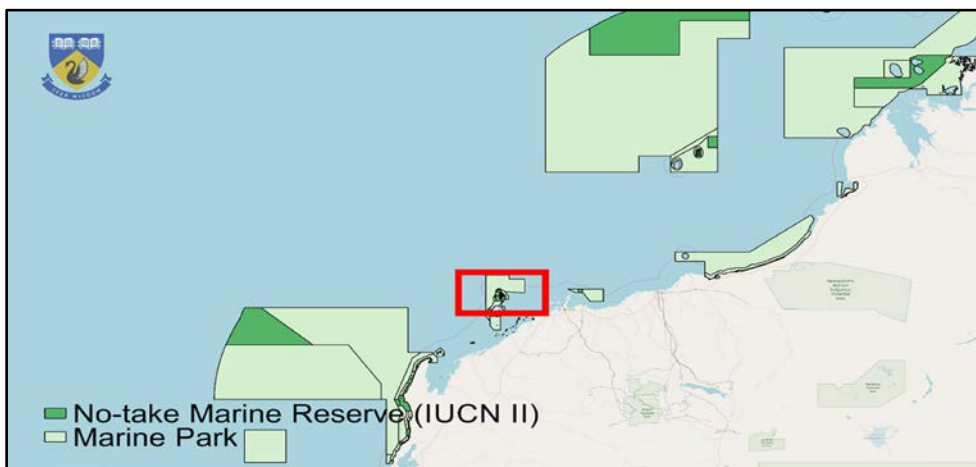


Figure 4 Example of 'Second map': see Table 1 for formatting instructions.

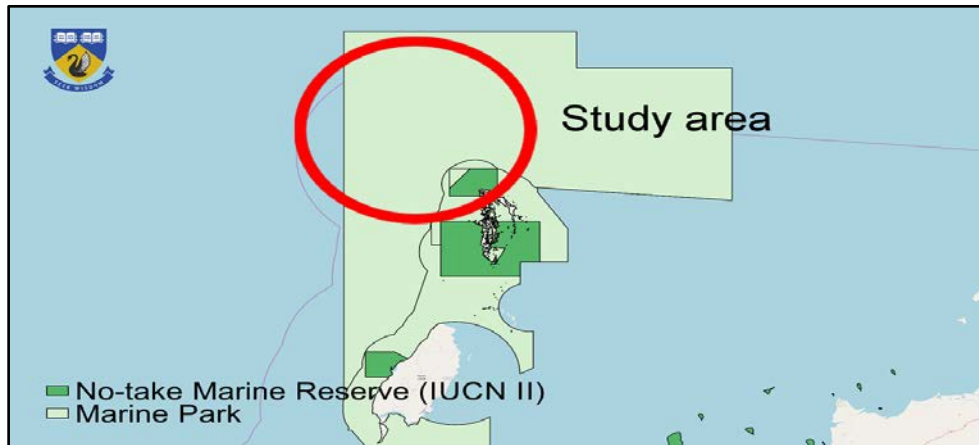


Figure 5 Example of 'Third map': see Table 1 for formatting instructions.

2.2. Survey method: Deployment

Short video showing the sampling platform being used or deployed, e.g. a stereo-BRUV going over the side of the boat or video from the system from the sea surface to the sea floor (Fig. 6).



Figure 6 Example of deployment footage

2.3. Survey method: Footage

Short video showing footage from BRUV deployment with main species labelled with common and scientific name, and depth of deployment (Fig. 7, 8).



Figure 7 Example of stereo-BRUV footage: showing one species (Blotched hawkfish). See Table 1 for text formatting.



Figure 8 Example of stereo-BRUV footage showing two species (Tawny shark and Golden trevally). See Table 1 for text formatting.

2.4. Credits

The credits include the organisation/lab logos. Include project and funding details. For example, “Video footage from the Houtman Abrolhos Reef Observation Areas long term monitoring project” (See Table 1 for formatting; Fig. 9; Fig. 10). When funded through NESP, the relevant logo and text acknowledging needs to be included e.g. “This project is jointly funded by [insert organisations] and the Australian Government’s National Environmental Science Programme” (Fig. 9; Fig. 10). Refer to the National Environmental Science Programme - Funding Acknowledgement - for up to date information.

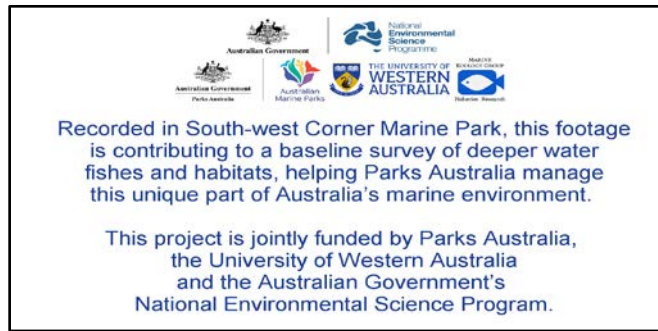


Figure 9 Example of the 'Credits': see Table 1 for text formatting.



Figure 10 Another example of the 'Credits' in 4:3: see Table 1 for text formatting.

Table 1 Formatting of text and map components

Text	Size	Font	Colour
Brief title	(0.08 lightworks)	Arial	Navy blue (#1F3F98)
Video description	(0.08 lightworks)	Arial	Navy blue (#1F3F98)
Map: Legend	28	Arial	Black (#000000)
Map: 'Study area'	(0.09 lightworks)	Arial	Black (#000000)
Map: 'No-take Marine Reserve (IUCN II)' polygons			Dark green (#54B567)
Map: 'Marine Park' polygons			Light green (#D5EFCF)
Map: Study area rectangle/circle			Red (
Common names	(0.07 lightworks)	Arial	White (FFFFFF)
Scientific names	(0.05 lightworks)	Arial	White (FFFFFF)
Depth	(0.04 lightworks)	Arial	White (FFFFFF)
Credits	(0.08 lightworks)	Arial	Navy blue (#1F3F98)

3. VIDEO PRODUCTION METHODS

There are many video editing software options freely available to download. However, in order to export higher quality files (e.g. 4K) often software with additional functions is required. In this guide we will include examples from [Lightworks](#) (an easy to use freely available software, with a paid version to export higher quality videos), and [Adobe Premiere Pro](#) (which is widely available and which many organisations having enterprise subscriptions).

3.1 Lightworks

In order to use Lightworks software for video editing and production, a number of steps are required:

- Download and install [Lightworks](#).
- Register details and login.
- To create a new project choose 'Create a new project...' (Fig. 11).

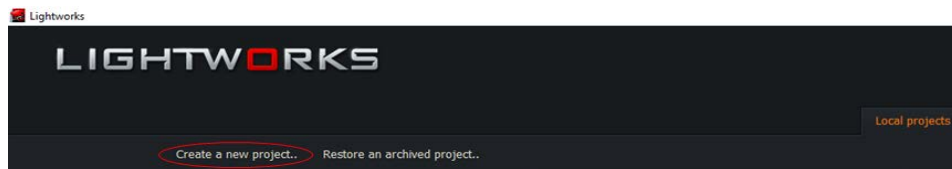


Figure 11 Creating a new project in Lightworks

- Enter project name and choose a frame rate (Fig. 12).

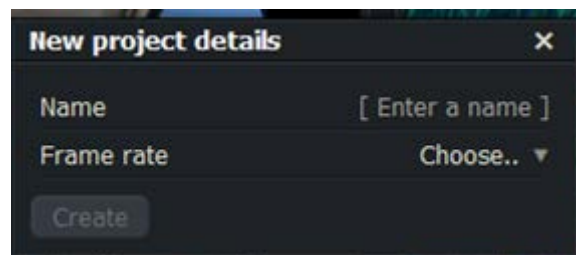


Figure 12 Entering project details in Lightworks

- Drag essential components into the 'Project Contents tab' (Figure 13).
NOTE: to create the title and credit scenes you will need to include a blank white image to add the text onto.

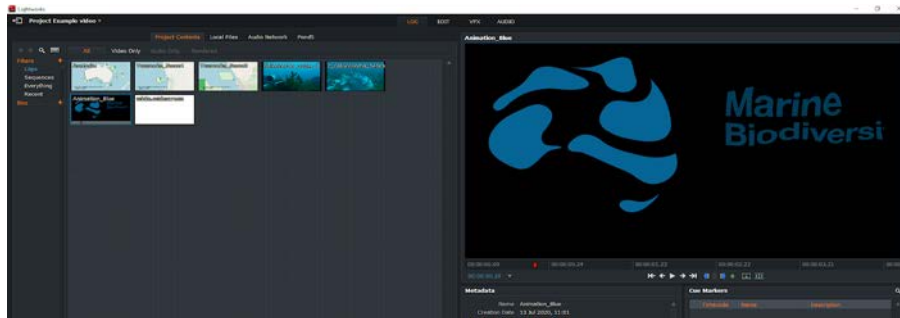


Figure 13 Screenshot from lightworks showing project contents

- Create a sequence: On the 'Edit' tab drag each of the components into the 'V1' track (Fig. 14). Start with the animation video, then a white background image, then the three maps, then deployment footage, then video footage and finally another white background image.

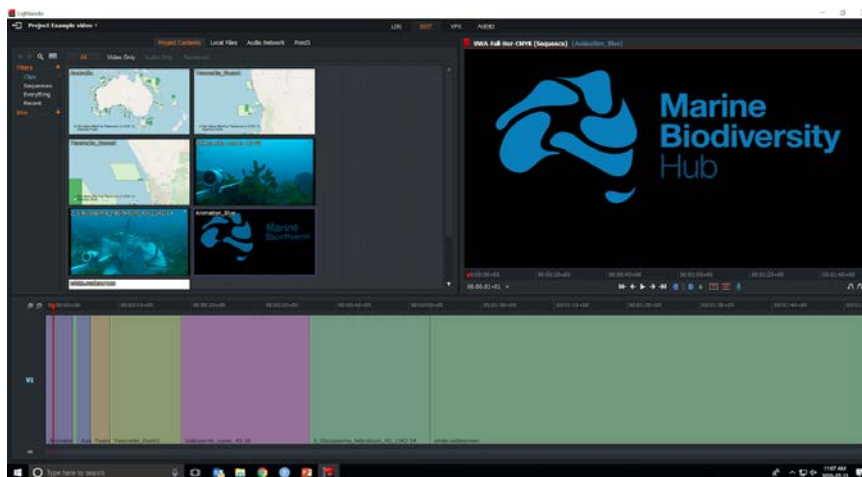


Figure 14 Screenshot from lightworks showing V1 track

- To split the videos move the red slider on the V1 track to the point where you want to cut and click the two red arrows facing each other (Fig. 15). This will split the clip into two parts, you can then delete the unwanted clip.

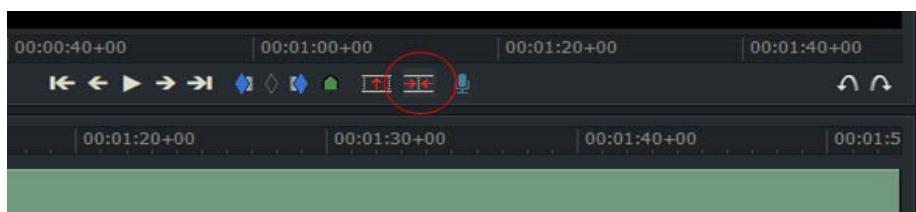


Figure 15 Clipping videos in lightworks

- To delete video clips click the upwards arrow (Fig. 15) or right click on the segment you wish to delete and select 'Delete'.
- Clip and delete the clips until you are happy with the flow of the video.
- To add the titles click on the VFX tab, and then right click on the first white background image and select 'Add' (under 'Effects') and 'Titles' (under text) (Fig. 16).

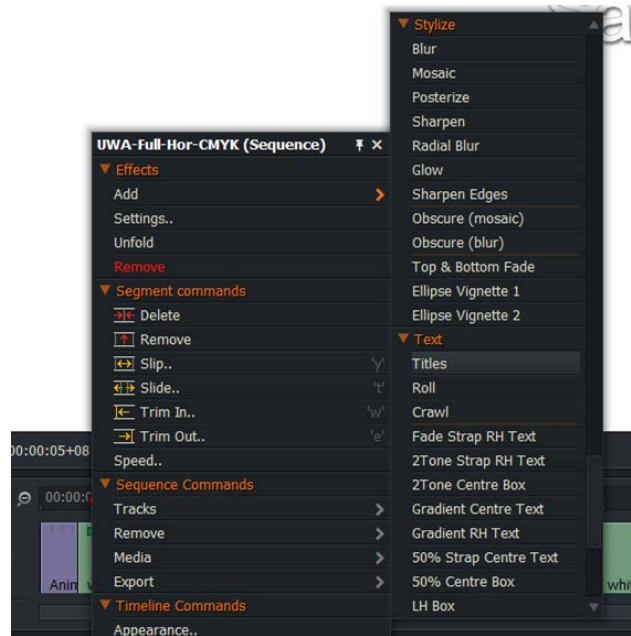


Figure 16 Adding titles in Lightworks

- Add the title to the 'Titles' box, change the formatting to match Table 1 (Fig. 17).
- Click on the 'Face' tab to change the colour of the text (Fig. 18).
- Remove the shadow by clicking on the 'Shadow' tab and unchecking the 'Enabled' box (Fig. 19).

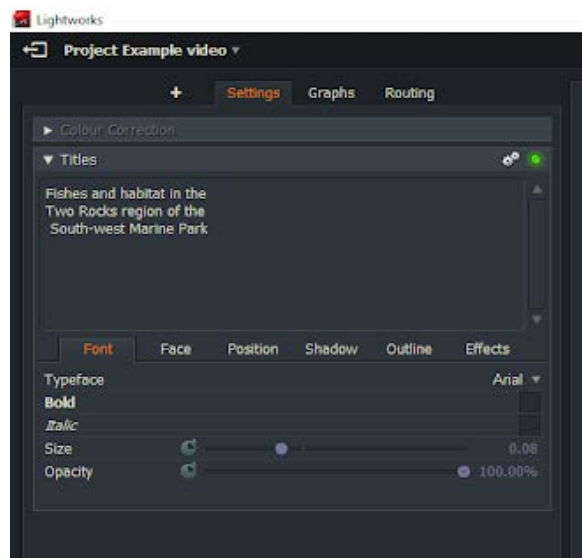


Figure 17 Add title and format text in Lightworks

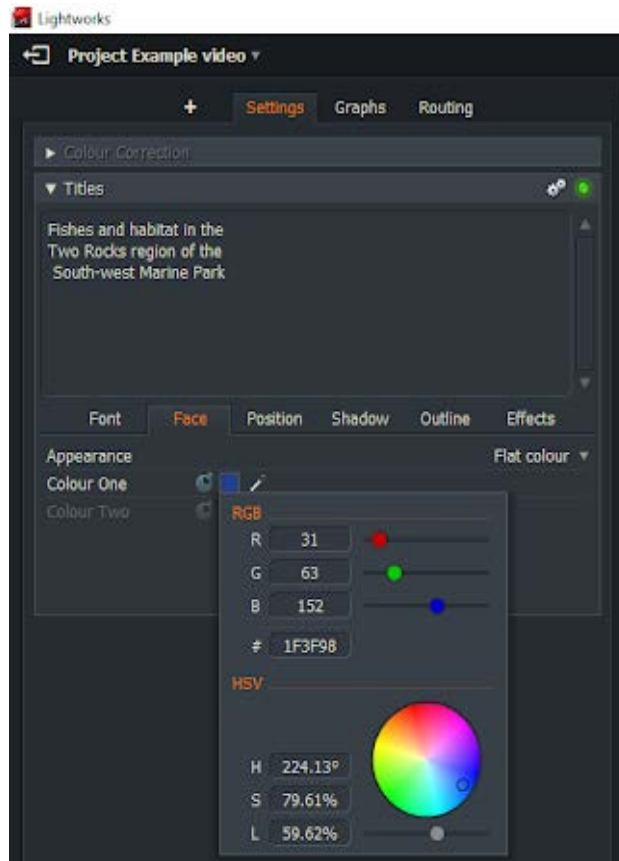


Figure 18 Changing the colour of the title in Lightworks

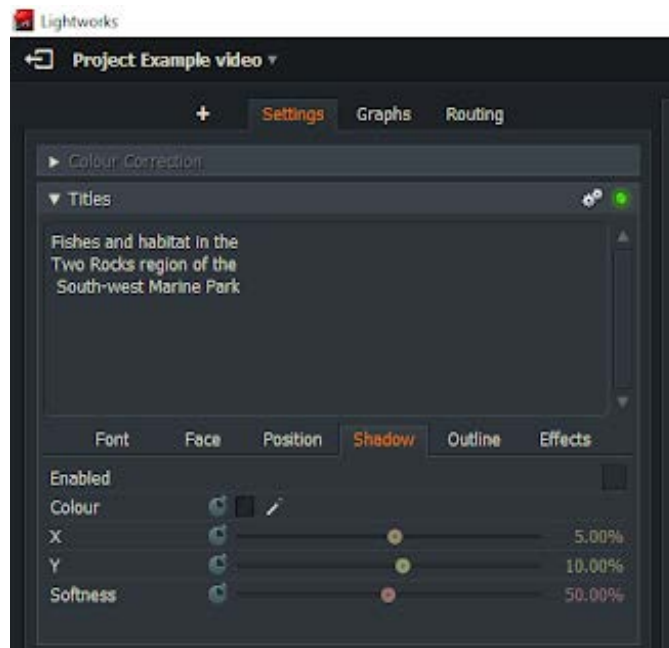


Figure 19 Removing the shadow on the title in lightworks

- Add another 'Titles' effect. Use the same font settings as above but create an underline by typing '_____'. Move this under the first text box to create the 'Brief title' (Fig. 20).

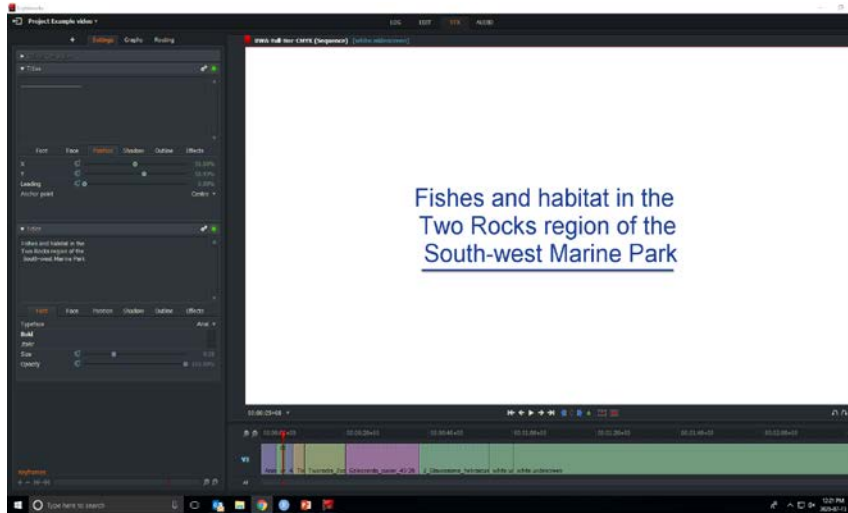


Figure 20 Creating a 'Brief title' in Lightworks

- Use the X and Y sliders (on the Position tab) to move the text into the middle of the screen (Fig. 21).

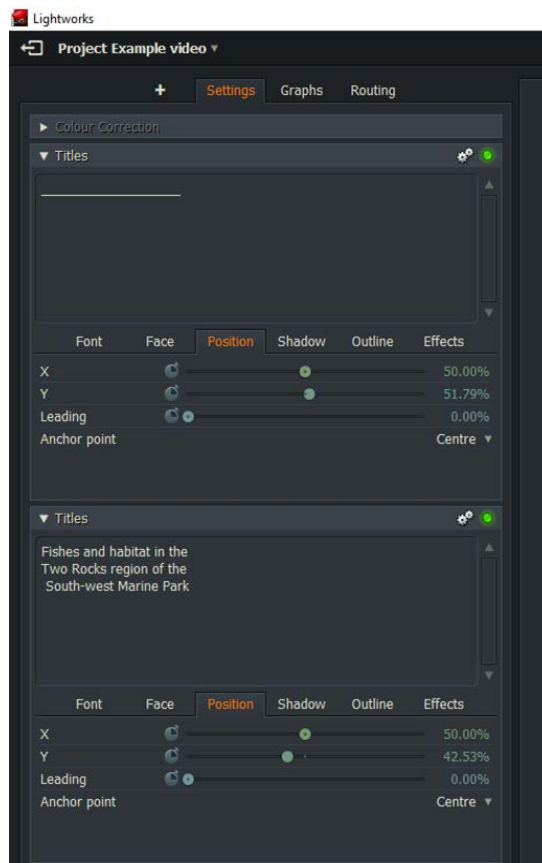


Figure 21 Creating a line in Lightworks

- Use the same method to add the 'Description' (Fig. 22).



Figure 22 Screenshot of the 'Description' slide in Lightworks

- Create maps in QGIS Download and install [QGIS](#).
- Add outlines of Australia, Australian Marine Parks and State marine parks.
 - Collaborative Australian Protected Area Database - CAPAD 2018 provides a source of these shapefiles, but it is strongly recommended to check their accuracy for your study region [[Collaborative Australian Protected Area Database - CAPAD 2018](#)].
- Format according to Table 1.
- Export maps as images
- Maps can be added by dragging and dropping into the sequence like the videos.
- Add organisations logo: Right click on the map in the V1 track. Click on 'Add' and then 'Image Key' (Fig. 23).



Figure 23 Adding a logo in Lightworks

- Click on the 'Choose a File' dropdown and select your organizations logo (Fig. 24).
- Change the 'Fg Opacity' slider to '70%' in the 'Blend' box. Change the position to X = 0.07 and Y = 0.88 (Fig. 25).
- To save the logo as a template click on the 'Routing' tab and then right click anywhere in the grey box, then click 'Save as template' (Fig. 26). Add a name and add the effect to your favourites.

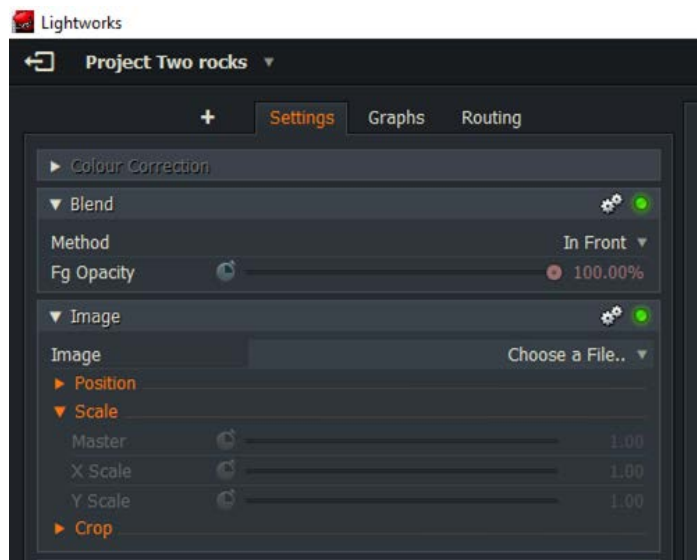


Figure 24 Adding a logo in Lightworks



Figure 25 Position of logo in Lightworks

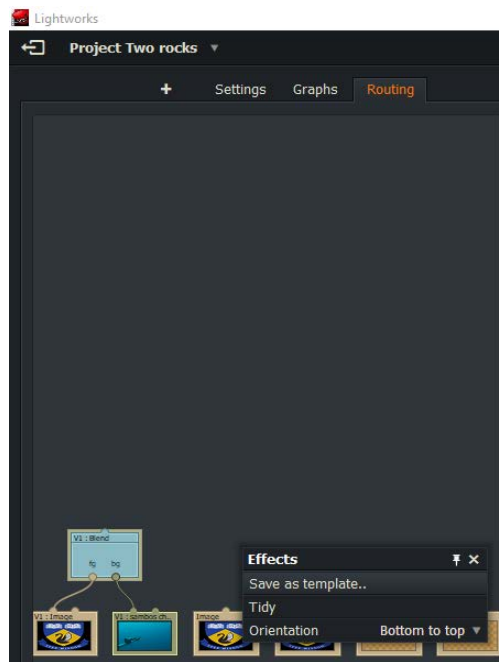


Figure 26 Saving additions as a template

- To add species names use the method in the titles instructions above to add '*Titles*' to the first, use the values in Table 1 to format the text. Add one for the common name, one for the scientific name and one for the depth (if known).
- On the 'Position' tab of each of the '*Titles*', change the '*Anchor point*' to Right. Change each X point to 96.51%. Change the Y point for the common name 12.69%, for scientific names change the Y point to 7.22% and if using depth change the Y point to 17.50% (Fig. 27, 28).

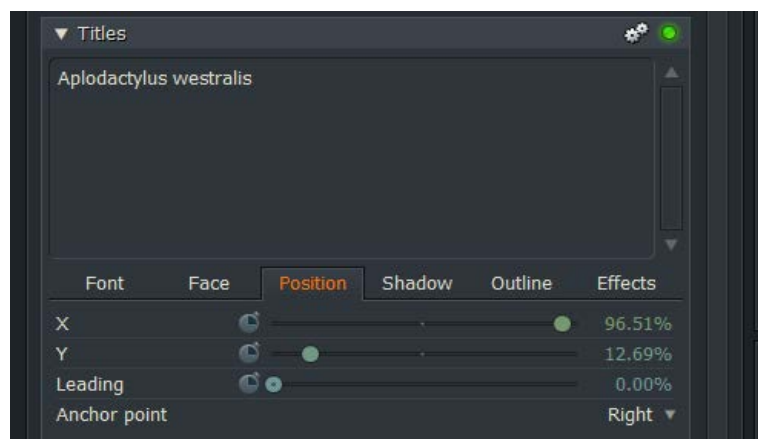


Figure 27 Adding species names in Lightworks

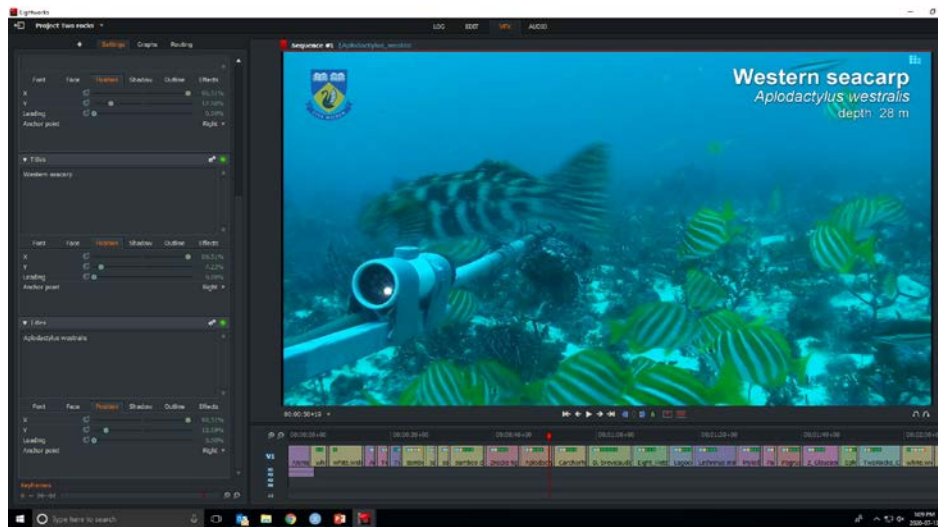


Figure 28 Adding species names in Lightworks

- To display two species names it is suggested to add the other species in the bottom left corner. For the common name $X=3.49$ and $Y=87.41$, and for the species name $X=3.49$ and $Y=92.78$. TIP: save the fish names as a template to make annotating other clips easier.
- Use lowercase letters for the common except the first letter.
- Genus names are capitalized and species names are lowercase.
- Depth is all lowercase letters. Meters is lowercase and there should be a space in between the depth and 'm'.
- Create credits: For the first credits add logos of the organizations involved using the 'Image Key' effect. Leave the figure opacity as 100%. Position $X=50\%$.
- Add text using the 'Titles' effect. Format according to Table 1. Remove the shadow on the 'Shadow' tab. Position $X=50\%$, $Y=66\%$.
- Use the same methods to add the NESP logo to the second credits and to add text acknowledging the MBH.
- Transitions between clips: Add transitions between each clip by right clicking in between the clips and selecting 'Add' then 'Dissolve' (Fig. 29).

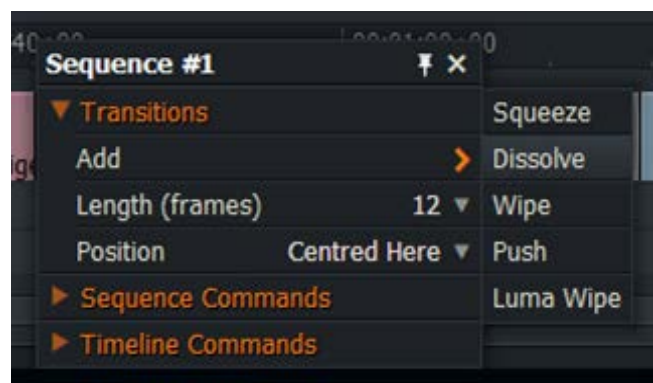


Figure 29 Adding transitions between clips in Lightworks

- Exporting final video: To export the video right click on the 'Sequence' video and 'Export' then 'YouTube' (Fig. 30).

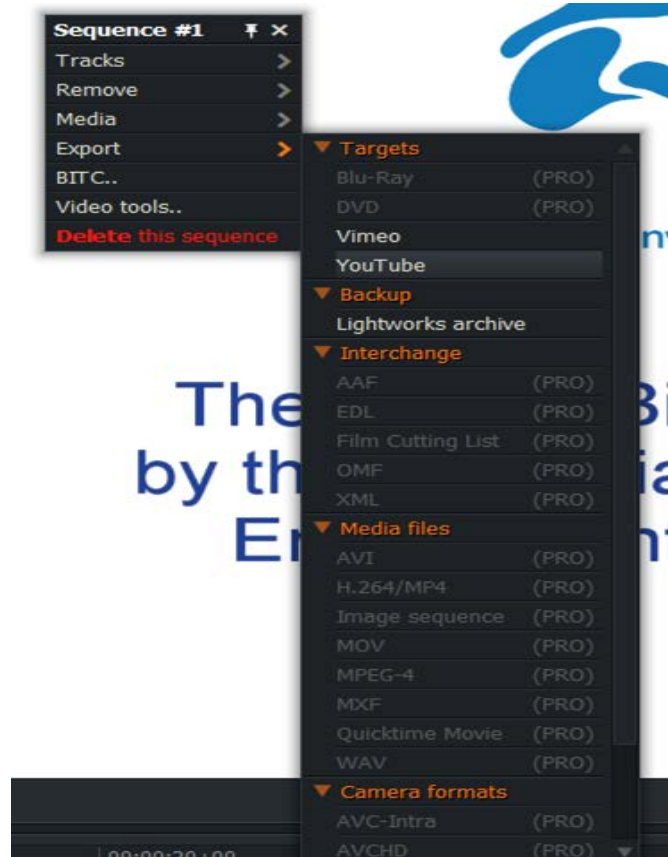


Figure 30 Exporting the final video from Lightworks

- Change the 'Size' and Destination 'Folder' and the 'Name' of the video (Fig. 31).

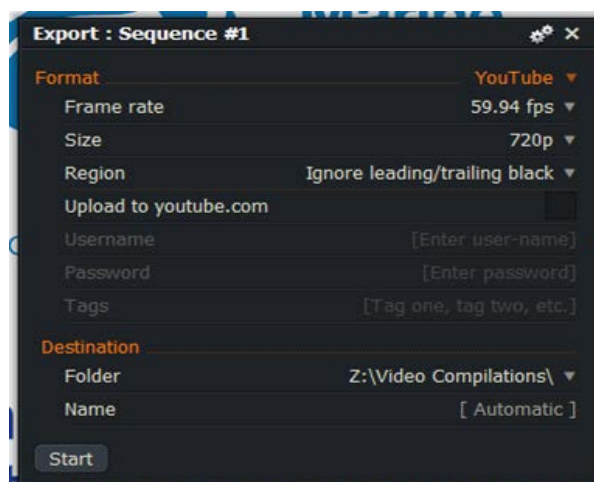


Figure 31 Exporting the final video from Lightworks

4. CONCLUSION

This guide has been used successfully to produce science communication videos for Marine Biodiversity Hub surveys of the [Ningaloo Marine Park \(Commonwealth\)](#) and [South-west Corner Marine Park](#) using imagery collected from baited remote underwater stereo-video systems according to [Hub best practice field manuals](#), complementing science communication videos produced by individual Hub partners.

This guide provides a useful template to standardise the production of science communication products within Hubs and should be further developed to include case studies from other sampling platforms and to meet developing communication guidelines.

REFERENCES

- Langlois, Tim, Jordan Goetze, Todd Bond, Jacquomo Monk, Rene A. Abesamis, Jacob Asher, Neville Barrett, et al. 2020. "A Field and Video Annotation Guide for Baited Remote Underwater Stereo-Video Surveys of Demersal Fish Assemblages." *Methods in Ecology and Evolution / British Ecological Society*.
<https://besjournals.onlinelibrary.wiley.com/doi/abs/10.1111/2041-210X.13470>.



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