Natural History Filmmaking

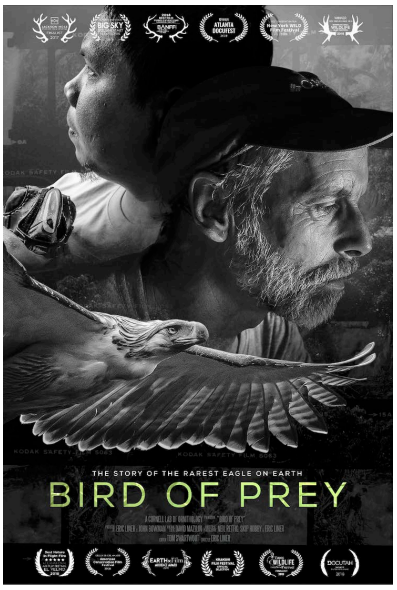
A brief guide to creating nature films from development to post-production

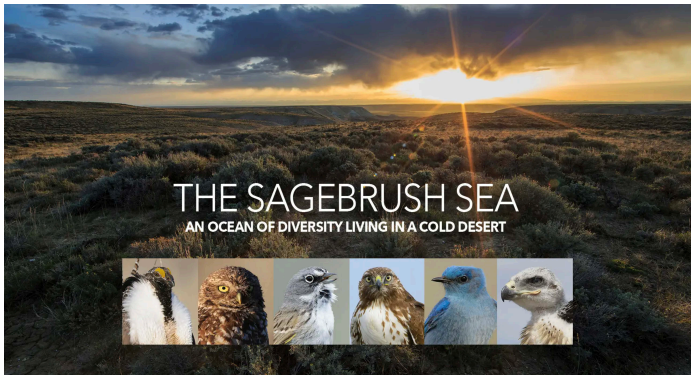
The Cornell Lab of Ornithology

Recommended Ages 13-18
Created for Migration Celebration 2020 by the
Conservation Media Team at the Cornell Lab of Ornithology

Who Are We?

The Center for Conservation Media partners with local communities and organizations around the world to create compelling science-based media (films, photography, etc.) about pressing conservation issues. Our goal is to inspire the audiences that are vital to sustaining species, ecosystems, and human livelihoods.





Although we do make feature-length pieces such as the pieces whose posters are shown here, much of our work focuses on short films for specific audiences and conservation campaigns.

What is Natural History Filmmaking?

Natural history filmmaking encompasses many different forms of visual storytelling. Some films **document animals as they live their lives**, while others **make an in-depth case for the conservation of a species or habitat.** Whatever their purpose, the people who created these films all had a plan for the story they wanted to tell. The following pages of this document describe how the Center for Conservation Media at the Cornell Lab creates a film.

Following along with this activity guide is a little like cooking with a recipe. You'll need a few key pieces of equipment to get started, but you do NOT need the most recent or expensive gear to make a good product. Good teamwork and communication can make things a lot easier. And finally, there is plenty of room for you to tweak the "recipe" according to what works for you or what you have available.

Enjoy, and please share your creations with us at cornellbirds@cornell.edu!

Step 1 – Pre-Production

This first stage is where you brainstorm the big-picture ideas of the film.

- What is your film about?
- Who do you want to see the film?
- Is there anything you want your audience to ***think, feel, or do*** once they've seen the film?

Next, make a plan for how you will achieve those big-picture goals.

- What information do you need?
  - What are the "who, what, where, why, when, and how" of the topic?
  - What sources did you use to learn about the topic?
- What footage (of animals, humans, maps, interviews) do you need?
- How do you want people to see your film? Will it be online, or will you show it at a special event?

Pro-Tip

Consider drafting an outline, script, or even sketch of what you want your film to look like or talk about. This can help you to figure out the visual and audio elements you need.

Step 2 – Production

It's time to go out and get the footage! This stage is called "Production," because you're creating the elements for the film.

- Get permission!
    - Before you start filming, make sure you get permission from everyone who will appear in your movie that you can use their face and name. In the industry, this is called a "model release" and it's very important. Have them write down their name and state that they are allowing you to film them and use their interview for your project.
    - Sometimes you also need permission to film at a specific location. Call ahead before your shoot to ask if you can film.

- What gear do you need to obtain or borrow?
    - The basic equipment is a camera and microphone – so, a smartphone is a great start. If you are looking to get your own gear however, start simple: do some research online to find a trusted camera that works for your budget. That and a small hand-held audio recording device will enough to get you going.
    - Accessories like tripods and lenses can give steadier or more varied shots but are not necessary.
    - Professional filmmakers bring other gear, like lights and protective casing, as well as food and clothing for longer trips.

Pro-Tip

You don't need a fancy camera to make a great film. Some documentaries were shot entirely using a mobile phone. Check out "A Woman's Epic Journey to Climb 7 Mountains" by National Geographic.

- Is anyone going with you? What responsibility does each team member have?
    - One person can film while the other person logs footage.
    - One person can film while the other person films the person filming. (This is a good idea if you want to show what it was like to shoot footage.)
    - One person can record video while the other person records audio. (If you're using smartphones, this would mean using one phone for video and holding the other closer to the subject for better sound.)
    - One person can film while the other person asks interview questions.

- Animals and people have schedules, so you'll need to make a schedule too.
    - For example, if you plan to film birds singing in the morning, you may need to set up really early in the morning.
    - Contact and arrange a time to conduct interviews.
    - Keep a running list, or a log, of your footage as you shoot, so you have an organized record you can look through during post-production.

The next page has a log template for you to work from.

Pro-Tip

Be prepared! You might have to be outside for a few hours to get everything you need. Make sure you have food, water, and clothes for any unexpected weather.

Below is a typical log that a field producer would use while filming. The first two lines have been filled out here for you to use as examples.

Date	Folder/ Camera	Clip Name	Subject	Behavior	Quality Rating (Is this a good shot?)	Location	Notes
08/30/20	RED, card 5	A114_C001	Robin	Singing	Great, 5/5	Ithaca, NY	Male in tree, Close Up, no Sound
08/30/20	GoPro	GX014875	John	Interview	Fine, 3/5	Dryden, NY	Audio recorded on iPhone

Step 3 – Post-Production

Time to bring it all together! Post-production refers to everything that happens once filming has ended.

Here's where your ideas from pre-production come back into the picture. It's time to put together everything in a way that tells your story. Most of this section takes place on a computer, so it's best if you can use or borrow one.

We don't have the space here to explain the details of every editing software, but there are plenty of online tutorials showing you how to use each one.

- It's a good idea to make a copy of your footage so that you have a back-up in case something happens to your camera.
- If you have a computer, then chances are you'll have the software that will help you put sound and images together in the order you want. Windows computers come with Windows Movie Maker installed, while Mac computers have iMovie. There are also programs you can download for free, like DaVinci Resolve.
- Some people start by making a "radio cut." A radio cut is what it sounds like: an audio-only version that could be played over the radio. Radio cuts are useful because they help you organize the points you want your film to make, without needing to deal with the visual elements right away. They can also help you to get a feel for the pacing and tone of your film as a whole. Once you have the audio down, then you add in your footage.
- Music and sound effects are the icing on the cake. When considering music, pay attention to licensing. Online platforms such as YouTube can be quick to flag a video for improperly licensed music. If music licensing isn't in your budget, look into public domain music...or record an original score with some friends!
- Post-production can take a while! Be patient with yourself, ask for help, and keep trying different orders of video and audio to tell the story you want.

Step 4 – Showing the film

It's always helpful to share your almost-finished film with a friend and ask for feedback. Hearing from someone who's seeing the film for the first time might inspire you to make changes to improve your story.

Once you have a film made, it's time to show it to your audience! Remember to ask people what they thought about it. (Did they think, feel, or do what you wanted them to?)

Congratulations on your Natural History Film!

Bonus Information!

Who is on a film production team?

A production team can be large or small depending on the film. Some big production houses might have a huge crew where each person has one specific job. Smaller production groups might have a handful of people who all wear several hats in order to make the film.

No matter how big your crew is, whether you're a team of one or 200, the important thing is to have good communication, good morale, and a good work ethic. Filmmaking can take a lot of time and energy!

Here are some typical roles on a film production team.

The **Executive Producer** is responsible for putting the rest of the film crew together and making sure the film has the budget it needs. The Executive Producer has the final say on what the film looks like.

The **Producer** is responsible for the day-to-day work of the film. Some places require that you get permission to film there. The Producer calls ahead and makes sure that everything is ready for the rest of the crew to work.

The **Director** is responsible for leading the story. In documentaries, the Director might be the one asking the questions in an interview and making sure the interview subject is comfortable enough to answer those questions well and look at ease on camera. The Director also works with the Editor to create the overall tone of the film.

The **Production Manager** ensures that everything is running on schedule and that every team member has what they need to do their job.

The **Story Editor** is in charge of researching the topics and stories that become the film. Throughout the filmmaking process, they work with the Director, Producer, and Editor to make sure that everything the audience sees or hears is factually accurate.

The **Cinematographer** or **Director of Photography's** job is to get the shot! Before filming, the Cinematographer works with the Producer to make a "shot list," or an agreement on what footage they need to get to tell the story. It's also important for the Cinematographer to know and test their equipment before going into the field.

The **Editor** of a film takes all of the footage and audio from the field (or the shoot) and creates a "timeline" or sequence" in their editing software. The sequence is reviewed by the Story Editor, Director, and Producer to make sure that it conveys the story that the team is trying to tell. By editing the footage, sound, and music, the editor plays a big part in the look and tone of the film. Is the film funny or sad? Is it inspiring? The Editor's choices affect what an audience thinks of the finished piece.

Filmmaking tips from members of Conservation Media

Photography tips from Gerrit Vyn, Conservation Media photographer and cinematographer:

Telling stories with your camera forces you to slow down and think about what you are doing. What is it about this scene that makes you want to make a photograph? What moves you or attracts your eye? Is there a point of view that you want to capture and preserve? I approach each scene asking myself what is the subject of this photo. But I am not merely saying that I can identify the object I am pointing the camera at. I am talking about the story behind the image. If a photo works really well as a story, it doesn't even need a caption. Once I have my subject, I now have to draw attention to it. It forces you to focus, literally and figuratively, on what's important in the shot.

The last part is simplification. It's the most important part. John Shaw says the difference between a professional and an amateur photographer is that the pro knows what not to include in the photo. When you are composing an image, take a moment to look around the frame and ask yourself. Is this thing necessary to tell my story? Is it part of what really attracted me to the image? If you see a waterfall running past a boulder and the power struggle between the boulder and the water is your story, then you don' t need to include the flowers, the sky, the grass, etc. Include only that which is necessary to tell your story and nothing more.

Always try to look at your photos from a viewer's perspective and figure out what can be done better. What did you miss in this photo? What adds something to it? What takes something away?

Be patient and allow time for all of the factors to fall into place. Be an observer of light and color—use it to convey a message or emotion. Your technical routine must become second nature so your mind can be free to focus on the story. Once you settle into a scene, think about how to make a picture that best tells your subject's narrative without bias, as creatively as possible. Focus on the action as it comes into your frame; let the action come to you—don't chase the action. When it feels right, release your shutter.

I used to be an erratic shooter who'd shoot a picture, and move, shoot another picture, and move again. It wasn't until one of my mentors suggested I slow down, stay in the moment, and follow through that I self-implemented the 10-Frame Methodology. It is my guideline for solving nearly all photographic problems while on assignment. The concept is simple. Slow down and become more deliberate in your photography. Don't jump on the first item or scene that you see. Spend some time looking for the best subject or greatest vantage point. Spend more time looking and less time shooting. Once you've found the ideal composition, sit and wait for the right moment. Let the action come to you. Make 10 frames without moving your composition. If you commit to making a picture, then really commit.

Editing tips from Daniel Sheire, Conservation Media editor and producer:

For me, the best way to turn raw footage into a cohesive visual and auditory experience is to create a well-organized edit project. A chaotic edit will only lead to a chaotic creative process. Make sure you label your media folders (also called “Bins” in editing software) to make shots easy to find and use every opportunity when reviewing footage to mark shots you think are interesting.

Make sure you give yourself time to really view the footage and start seeing ***sequences*** of shots working together rather than just individual images. Ask yourself what’s the environment that the animal lives in, and what footage do I have to tell a more complete story of that animal’s life? Those are scenes that I have the most fun creating.