Doing Science: Researchers and Exhibition Staff Talk About Their Work: Keeping a Field Journal 1

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| <http://www.amnh.org/explore/curriculum-collections/biodiversity-counts/what-is-biodiversity>  All scientists who work in the field keep a field journal. In it they record everything they find, observe, and collect. No matter what kind of science they are doing--whether they are studying plants or arthropods, mammals or fish, individual organisms or interactions between organisms--their journals contain the evidence on which all of their work is based. The journals scientists keep become the property of the Museum or other institution for which the study was done. They are kept so other investigators can use them as references, sometimes many years later.  You will be asked to keep a field journal. It is not quite like a personal diary you might write in at home, or even as an exercise at school, but it is not busywork either. It will contain your evidence, and perhaps it will become part of the class or school library, to be used as a reference by others.  To find out how, and why, to keep a field journal, we asked an expert: Eleanor Sterling, an anthropologist who has done fieldwork and kept field journals in Africa, from the rain forests of Madagascar to the savannas of Tanzania.  "Field journals are incredibly important," she told us. "Basically you can't do science without them." We asked her to elaborate.  "When I first went out into the field, I thought it wasn't very important to take notes, because I wasn't collecting data, I was just looking for a site. I wrote down things occasionally but not rigorously. Besides, the things I was seeing were so amazing that I was convinced that I would remember them for the rest of my life. But the truth is that so many things crowded my brain that I couldn't remember them all, and some of what I couldn't remember turned out to be very important. For example, when I got home, I couldn't remember whether a little baby animal we had seen had his eyes open or closed. Now that makes a huge difference if you want to figure out when the baby was born. Later, when I was working on other research, suddenly that little piece of information would have been very valuable . . . but I didn't write it down!" She laughed. So the moral is: No matter how trivial an observation or piece of information seems, write it down.  But how can you write down everything? we asked.  "You can't write down everything, it's true," Eleanor told us. You have to figure out what basic things are important and then, through trial and error, you begin to know what kinds of information you need for your project. "You will probably find that you've left out some important data that you really could use. Chalk it up to experience, and take more complete notes next time," she advised.  Here are some tips from Eleanor on keeping a field journal:   1. Use a well-sharpened pencil. 2. Begin each field session by writing down these basics:  * site name/location * plot name/number   + - group name     - date     - time of day     - temperature     - weather conditions: for example: is it cloudy, sunny, windy, raining?     - wind conditions     - soil conditions: for example, is it moist or dry?   3. Record your observations. Some things to consider recording are:   * + - if there are fruits or flowers on individual trees or plants in your site     - if you observe any kinds of interactions among insects, like mating or fighting, or between insects and plants, like feeding and pollinating     - if you see any changes from the last time you were there   1. If things are happening so quickly that you do not have time to get everything down, try developing a coding system--what scientists call an ethogram--to help you make notes quickly. For example, Eleanor assigns a number to each of a range of typical behaviors, and when she observes one of those, she just writes down the number. It makes taking notes on the run much easier. You can make up your own ethogram to suit your site and the kinds of things you want to observe and record. Just be sure to make, and keep, a key so anyone who reads the journals knows what the numbers stand for!      + feeding      + fighting, including aggression and defense      + building      + reproduction      + caring for young ones      * 1. 6. When you get back to class or, later, when you get home, read over your notes and underline or use a highlighter to mark the really important things. You might want to color-code them so observations or data in the same category are all one color.   2. 7. Do not lose your field journal. Put your name and class number, and the name, address, and phone number of your school on your notebook.   Losing a field journal is every scientist's nightmare, Eleanor said. "You just can't reconstruct all the data, so it's really a disaster when it happens." She told us some stories about journals lost and found.  She once found another scientist's journal in a marketplace in Madagascar, where paper is very scarce and very valuable. It was being sold page by page, and fortunately, the merchant had started ripping out pages from the back, where they were still blank. Eleanor recognized the journal and knew to whom it belonged, so she bought the entire book and mailed it back to its owner. "I have a friend for life," she said.  Then there was the time she was in Tanzania, studying baboons. "The little baboons would come up to me all the time, and anything I put down beside me would be gone. They'd snatch whatever it was, as if to say, 'Oh, this is cool,' and head off with it into the forest. What I ended up doing was putting a string through the spine of the notebook and attaching it to my belt, sort of like a leash, so if an animal made off with it, eventually it would stop." She also wore her pen or pencil on a string around her neck. That way, if she needed her hands free in a hurry, she could drop everything and not worry about losing it.  A strategy like that might have saved another scientist Eleanor knows from some unpleasant mucking around. She had her notebook in her pants pocket when she made a visit to the outhouse. To her dismay, the book fell out of her pocket and into the hole. Knowing what you know about the importance of field notes, you will not be surprised to learn that the scientist retrieved the notebook, but, as Eleanor said, "It wasn't a pretty sight!" |

**The Personal Field Journal**

How you record data is a mixture of formal requirements and your own needs and skills.

Field journals end up being very personal. It may take some trial and error before you come up with the way that works best for you.

A formal field journal, the type Eleanor Sterling and other Museum scientists keep, has three parts:

* A diary-like account.
* A field catalog consisting of a list of specimens, with a number assigned to each one. Specimens found in the field are tagged and numbered to correspond to the catalog.
* A species list, which includes all specimens by number, along with the site and date of collection, the name of the collector, and any remarks.

The field catalog and species list are compiled back in the lab, often in separate notebooks. For your project, they will be entered into the computer and posted on-line.

Some scientists write everything--measurements, data, observations, specimens collected--on the same page; others record some of this information--specimens collected, for example--in a list at the back of the journal. Eleanor divides her page vertically, with the main part reserved for recording data and a narrower area running down the side for scribbling questions, ideas, sketches, hypotheses, and things to look up back at school or in the library. Some scientists make sketches or drawings; some do diagrams or graphs or flowcharts.