



# Keeping a Naturalist's Field Journal

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## The Grinnell Technique

The Grinnell System method was designed to aid scientific investigation. It is the method most often by professional biologists and field naturalists.

The method was developed by Joseph Grinnell (1877-1939), a field naturalist, teacher and the first director of the University of California's Berkeley Museum of Vertebrate Zoology. He taught this method to his students and used a variation of the system himself.

The method consists of four parts:

- a field notebook - to directly record observations as they are happening
- a field journal - of fully written entries on observations and the information
- species account - of detailed observations on chosen species
- catalog - a record of where & when specimens were collected

It takes practice to use the system but it is well worth it. The format guidelines are pretty simple. I use a 3x5 card stuck in the back pocket of my moleskin field journal or written in my field notebook to remind me what to write.

The Berkeley Museum of Vertebrate Zoology has started a project to put all of its collected field notes, maps and photos online. This is a wonderful opportunity for naturalists all over the world, to read information and see the field notes of professional scientists.

Key title: The Naturalist's Field Journal: A Manual of Instruction Based on a System Established by Joseph Grinnell

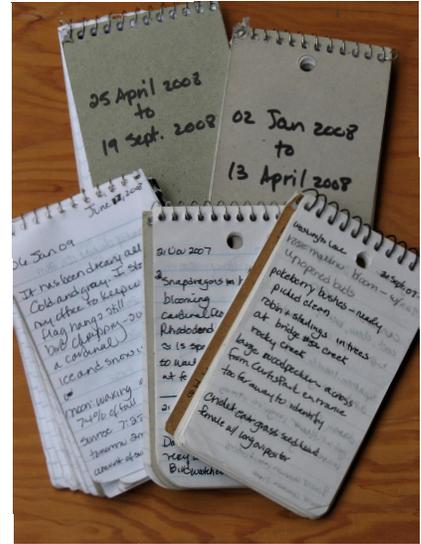
This is the only book that I have come across that discusses the method in-depth. I treasure my copy. I was able to get a copy from the original publisher, Buteo Books. The prices are very high for a paperback book. If you visit the Amazon.com page you can click on the request for the publisher/copyright holder to make the title available as an ebook.

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## The Field Notebook

This pocket notebook is carried on field trips, hikes and while sitting in your backyard. It is a handy way to record what you see and to always have something to write in your **nature journal**. I always have mine with me. I take mine on fast-moving birding walks with my Audubon group. I list birds seen and other observations.

This is your primary note receptacle. It can contain all sorts of notes such as directions, nature observations, books to read, anything you want. Keeping it with you allows you to take notes while you are observing. Memories can be inaccurate.



Later you may ask yourself was the hawk's eye yellow or red? Had the male American Goldfinch's plumage turned from summer breeding to drabber winter colors?

A memo pad fills up quickly. I go through several each year. When you fill up one, file it away. From the memo pad a full account of your observations are written in the field journal.

### Hints and Tips

- date every page
- include your name, permanent address, telephone and email on the inside front cover
- write or tape the daily observation checklist on the back cover

I write this observation checklist in the back of my field notebook and nature journal. Following it has improved my note-taking tremendously. I begin every journal entry with this information.

### Basics

- time (use 24-hour clock format; 1435 for 2:35p.m.)
- date (use international format: 03 September2007)
- locality (place, latitude, longitude, GPS readings)
- route (how did you get there?)
- weather (temperature, cloud types, wind, rain, etc.)
- habitat (backyard, forest, desert, wetland,etc)

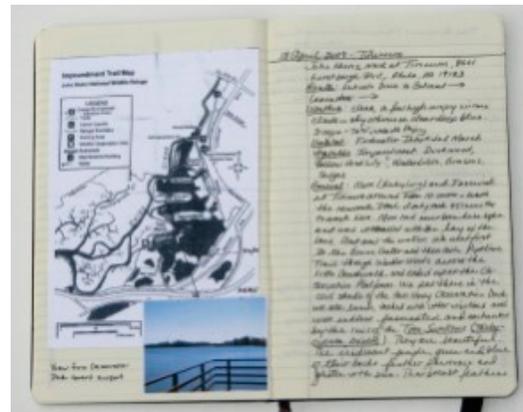
- arrival and departure times
- list of species seen
- vegetation (where, insect visitors, blooming?)
- general notes (animal behavior, sketches, maps and photos)

To ensure that you or someone in the future can read your notes, here are some tips.

- use acid-free paper (Moleskin Brand notebooks are widely available)
- use fade-proof, waterproof ink (Micron, Pilot G7 and Stafford Uniball are good models)
- use numbers ("1") instead of the word ("one")
- use as few abbreviations as possible
- number journal pages in the margins

## The Journal

A field journal is what professional naturalists and biologists use. It is a **nature journal** which uses the scientific method. It is where you write out your field experiences and observations in a diary-like format.



The journal entries are drawn from the notes taken in the field notebook. You basically take the scribbled notes and partial sentences of your notebook and turn them into full coherent sentences. It is ideally written in the afternoon or evening of the observation. Don't let too much time past (even 24 hours) before writing. Memories fade very quickly.

The journal entry includes information gathered based on the observation checklist and what you observed. Also include explanations of how you did something, such as finding tracks and signs, where you looked for plants and animals.

Write on only one side of the paper. Usually the right side. This leaves the left side for maps, photos, sketches that complement what is written on the right page. If you are left-handed you can reverse this. The book usually covers one calendar year.

The journal can be in many forms. The original form Grinnell recommended was a 6”X9” loose-leaf notebook. But, 6”X9” loose-leaf paper that doesn’t yellow is hard to find. Acid-free paper used for dissertations can be printed with lines, cut down and hole punched. It can be purchased from office supplies online. I tend to like a hardbound, Large Moleskine Ruled Notebook . Probably because at the end of the year, I have an attractive illustrated book.

### The Species Account

A Species Account is a record of animal, plant or other nature observations. Since little is known about the majority of animal and plant species, almost any information is useful and valuable. The entries are geared toward recording phenology, ecology and behavior.

The species account would be for species or individuals, that you are focusing on. I have read that college biology students are required to make a detailed observation pages of all the plants and animals that they observe. For the amateur naturalist, that might be too much. Choose what works best for you.

D. Long 2007	House Sparrow <i>Passer domesticus</i>
23 Sept.	Backyard, Philadelphia 0653
	The House Sparrows are eating Nyjer seeds, Suet cakes and hulled sunflower seeds. They totally dominate the feeders, chickadees, Cardinals and American Goldfinches can only pounce when there is a slight opening.
	The House Sparrows have a very diet, eating everything offered at the feeders

These entries are where observation of regularly or intensely studied species is collected in one place. This makes it easy to locate information on behavior, nesting, courtship, bloom times, etc. To be really valuable, the observations should be made at regular intervals. Professional naturalists plan out a schedule. Perhaps, a certain plant is scheduled to be observed every day at 10:00 am. Or a bird's nesting behavior once a week.

Having this information in one place saves hunting through entire journals to find specific facts. Say, you were asked to write a short article, poem, etc., for your nature club newsletter on the House Sparrows in your local area. Having detailed observations about the birds' habits would make writing that article much easier.

### Hints and Tips

- record the locality of sighting, observer and date
- for frequently traveled trails, use standard references or prominent landscape features. State the distance from the pond, the big red boulder, etc.
- use a compass, GPS or pace off measurements
- record observations, while you are observing them

### The Catalog

A catalog tracks the objects you collect. It assigns a number (starting with 1) of all the specimens such as pine cones, rocks, etc. that you pick up during your field observations. This is a separate section of your Grinnell field journal or a separate book all together. At the end of the year, the print format record is closed out. The last page of a year ends and a new page is started for the new year.

Professional naturalists employed by museums donate their collections to their employing institutions to preserve specimens. It is often a condition of their employment and they have legal licenses to collect.

*Please note: I only pick up fallen objects. Such as pine cones, leaves, shells, acorns, nuts, rocks, etc. I don't pick live plants or bird's nests or feathers.*

D. Long 2007	Catalog
16 January	1400-1800 River Road, Montgomery County, PA
#14	maple seeds - Red maple ( <i>Pinus resinosa</i> )
15	pine cone - White Pine ( <i>Pinus strobus</i> )
16	Pine cone - Eastern Hemlock ( <i>Tuga canadensis</i> )
28 Feb.	1400-1800 River Road, Montgomery County PA
#17	walnut shell
#18	dried seed head - Milkweed ( <i>Asclepias tuberosa</i> )
18 May	1400-1800 River Road, Montgomery County, PA
#19	rock - Pennsylvania Schist
20	butterfly - dead Cabbage white, female

### Setting Up the Catalog Page

Title each page "Catalog". Label or tag each specimen you collect.

For each specimen, include to the same information on both the tag or label, and in the catalog.

- item number
- date collected
- location of collection
- collector's name
- identification of object

*A note about identification for the hard-core scientists among us. For professional naturalist collections, a taxonomist, who specializes in species identification will identify a specimen. The field collector may not. A professional field collector may sometimes write the species scientific name on back of the label - in pencil. In case they make a mistake. But this shouldn't stop us amateurs.*

If you draw, photograph or attach a object to your nature journal page, including this information will be very helpful in learning about your area. I include the same information that I would write on a tag or label in the notes field in my computer photo organizer.

A record of where you found or collected an object makes that object more useful to your nature study.

I had a box full of leaves that I had collected over the years that had no records of where I found them. I could only say, "This is a Scarlet Oak leaf". But, I couldn't return to the tree to see if it was still there or if there was any new information to find out. I eventually composted my collection. It had limited nature study value.

## **Resources for Naturalist Field Journal Keepers**

*The Naturalist's Field Journal: A Manual of Instruction Based on a System Established by Joseph Grinnell* by Steven G. Herman. Vermillion, South Dakota: Buteo Books, 1980. ISBN 0-931130-13-1.

*Field Notes on Science and Nature* edited by Michael R. Canfield. Forward by E. O. Wilson. Cambridge, Massachusetts, 2011. 978-0674-05757-9. Michael R. Canfield is a Lecturer on Organismic and Evolutionary Biology at Harvard University.

*Keeping a Nature Journal*, 2nd. ed. by Clare Walker Leslie and Charles Roth. Vermont: Storey Publishing, ISBN 978-1-58017-493-0. Clare Walker Leslie and Charles Roth are naturalists who teach and write about nature study.

*How to Keep a Naturalist's Notebook* by Susan Leigh Tomlinson. Mechanicsburg, PA: Stackpole Books, 2010. ISBN 978-0-8117-3568-1. Susan Leigh Tomlinson is a paleontologist and professor who teaches nature studies.

### **Books on Nature Drawing**

*Illustrating Nature: Right-brain Art in a Left-brain World* by Irene Brady. Nature Works Press, 2004. ISBN 0-915965-08-9.

*Drawing and Planting Plants* by Christina Brodie. Portland, Oregon: Timber Press, 2006. ISBN 978-088192-841-9.

*Drawing Wildlife* by J.C. Amberlyn. New York: Watson-Guption, 2005. ISBN 0-8230-2379-6. This book focuses on the drawing of North American mammals.

*The Laws Guide to Drawing Birds* by John Muir Laws. Forward by David Allen Sibley. An Audubon Book. Berkeley: HeyDay Books, 2012. ISBN 978-1-59714-195-6.

### **Citizen Science**

Cornell Lab of Ornithology <http://www.birds.cornell.edu>

SciStarter - citizen science <http://scistarter.com/>

### **Donna L. Long's blog**

*In Season*. A chronicle of Philadelphia's Natural Year. <http://donnalong.com>

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D. Long  
2007

Journal

08 August

Powdermill Nature Reserve, Cook Township, Pennsylvania, Westmoreland County, Pennsylvania  
From the Governors Institute at the Seven Springs Resort we made a 40 minute bus ride to Route 381 in Rector, PA. This trip was part of the Pennsylvania Songbird Workshop. Powdermill Nature Reserve is part of the Carnegie Museum of Natural History and is located 55 miles east of Pittsburgh off the Donegal Interchange.  
Weather: Clear, sunny, cloudless sky, hot, 91°F, wind 3 mph  
Habitat: Mountain, deciduous forest, open meadow across from bird banding station.  
Vegetation:

General: Little insect activity. This was the first time I watch bird banding up close. The birds are caught in "mist nets". These nets are made only in Japan. The nets are placed between two thickets. The thickets weren't planted, just a path was cleared and kept moved, when the set of six trundle nets were placed. The nets have pockets that the birds fly into and can't get out of. The banders take the birds out of the nets and place one bird into a paper bag, closed by an ordinary clothes pin. The birds are caught because