Binoculars for Birding: Some Guidelines

"Here's a piece of advice to those new to birding: Those old binoculars that have been lying around the house for years will NOT do. Most are of low quality, out of alignment, and unsuitable for birding."

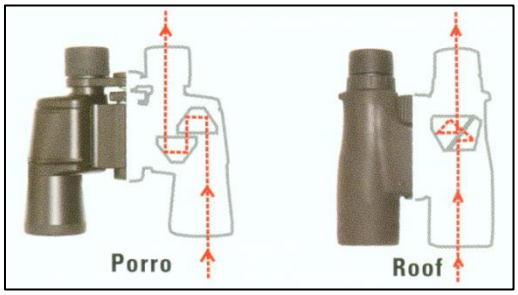
—National Geographic Birding Essentials

More people have been turned off of birding by BAD binoculars than any other reason. To get the most out of birding it is essential that you get a good set of binoculars. All birding binoculars are not created equal, however, so use the tips below to find the binoculars that are the best fit for your birding needs.

Lenses—Binoculars by the Numbers: Binoculars are described by two numbers, such as 8x32, or 10x40, or 8x21. The first number tells you the **magnification** while the second tells you the **size of the objective lens** in millimeters.

Binoculars that have a bigger ratio between the magnification and the objective lens size will usually give a wider field of view and a brighter image than those with a smaller ratio. (For instance, 8x42 provides a brighter image than an 8x32 or 10x42.) A good rule of thumb: divide the larger number by the smaller number; the result should be about 5 (a number called the **exit pupil),** which is about the same as the average diameter of a person's pupil. Most birders agree that 7 or 8 power is about right for most birding. We generally recommend against purchasing 10 power binoculars because they often have a smaller field of view, are heavier, and are harder to hold steady (the higher magnification magnifies the movement of your hands).

Prisms are what let you see a correctly oriented image when you look through binoculars. There are two types of prisms in common use, **Porro prisms** and **Roof prisms** (see picture). In both designs it is crucial that all elements are properly aligned (this is called **collimation**); the less expensive the binoculars, the more likely they are to be poorly aligned, even when new.



Porro prism binoculars have offset tubes: the objective/front lens is not in line with the ocular/rear lens. The Porro prism design is usually optically superior to the roof prism design in low priced binoculars. However, they are more difficult to seal reliably against dirt and moisture because more moving parts are exposed to the environment, and low priced models may not even be sealed at all.

Roof prisms binoculars have straight tubes (the objective lens is in line with the ocular lens), and they are therefore more compact and easier to hold properly for birding. Roof prism binoculars are typically better sealed against dirt and moisture and are of more rugged construction because most moving parts are internal.

Coatings: Most binoculars have antireflection coatings on their air to glass surfaces. These coatings assist light transmission and reduce color distortion, especially when the light goes from glass to air or vice versa. "Coated" means a single layer antireflection coating on some lens elements, usually the first and last elements—the only ones you can see. "Fully Coated" means that all air to glass surfaces are coated. "Multi-Coated" means that at least some surfaces (again, usually the first and the last) have multiple layers of antireflection coatings. (The others presumably have single layer coatings.) Multiple layers are about an order of magnitude more effective than a single layer. "Fully Multi-Coated" means that all air to glass surfaces have received multiple layers of antireflection coatings, and ideally this is what you want in your binoculars.

General requirements: The problem for most beginning birders is simply finding the bird. Look for binoculars that have a wide enough **field of view** to locate a bird and then follow its movements. Birding binoculars must provide a **bright**, **sharp image** to allow you to distinguish subtle features, particularly in dim light. They should also **focus easily** and **finely** enough so that you can get a good clear image quickly: birds move. If you wear glasses, look for binoculars that have a long enough **eye relief** to provide an unrestricted view.

Quality: The overall quality of binoculars and the images they produce depend on the materials and care in their construction, both mechanical and optical. This includes the chassis and mountings, the glass of the lenses and prisms, collimation (alignment) and coatings. **Lenses** and **Prisms** are the optical elements of binoculars, and quality (and price) can vary significantly.

Pricing: You get what you pay for. Quality is the most important "feature" of binoculars. A product that is well made of high quality components is "good," and it is always worth the extra money over shoddy "popularly priced" binoculars. Quality control costs the manufacturer (and you) money, but it is worth it because the result is better performing binoculars that can last a lifetime. Always spend as much as you can afford when buying binoculars; you will never be sorry you purchased high quality. Pay attention to what experienced birders around you are using. Better yet, ask to look through their binoculars and question them about the pros and cons.

Binocular Don'ts:

- **Don't seek advice on buying optics from non-birders.** Hikers, hunters, and boaters have different needs than birders. Looking at birds is not the same as looking at other wildlife. Pocket binoculars are fine for looking across a savannah at an elephant or a cheetah, but they are not suitable for birding. Marine binoculars provide a sharp, bright image, but are too big and heavy to carry around all day.
- **Don't buy compact or pocket-sized binoculars** (typically 8x21, or 10x21) as your primary pair for birding. The size and weight are attractive, but no matter how good the optics, compacts provide a lower quality image than mid- or full-size binoculars. Another drawback is that most compacts have a narrow field of view, which makes it very difficult to locate and follow birds.
- **Don't buy zoom binoculars.** Expert birders report them as being inferior.
- **Don't buy binoculars until you have tried them.** Make sure they feel comfortable in your hands. Look through them and be sure you get a clear, unobstructed view. Different models suit different people, and each instrument varies. If ordering by mail or online, make sure that you can exchange them.

Where to Get Help and More Information:

Audubon Binocular Guide to Binoculars: https://www.audubon.org/gear/binocular-guide
Wild Birds Unlimited: http://www.wbu.com/

> **To find the location nearest to you, go to https://www.wbu.com/store-locator/**
> **Wild Birds Unlimited** can give you advice on binoculars and many stores will let you try the models they carry that are suitable for birding. They can also advise you on feeding birds and attracting them to your yard, AND they support bird conservation and birders—locally and nationwide.

After you BUY: Get Comfortable With Your Binoculars.

Before you go birding, make sure you know how to set, use, and care for your binoculars. Every minute you spend practicing will pay off in increased success in the field.

Setting the Binoculars to Your Eyes: Roll the eyecups of the binoculars down if you wear glasses. Look through the binoculars and bend them together until you see only a single circular image. Aim your binoculars at something in the distance. Cover the front of the right tube and focus the left side of the binocular to your left eye using the center focus control. Next, cover the front of the left tube and focus the right eyepiece to your right eye using the right tube focus control at the base of the right eyepiece. (DO NOT touch the center focus control while you are focusing the right eyepiece to your right eye.) What you have just done is adjust the binoculars for your individual eyes. (Practically everybody's left and right eyes are different.) From now on, you only need to adjust the center focus control when you look at things at different distances.
https://www.birdwatching.com/optics/diopter_set.html

Holding the Binoculars: Wrap both hands around the binocular tubes and keep your elbows down and close to your body for greater stability. **Aiming:** You don't usually find birds with binoculars (although "glassing the general area" or scanning can sometimes reveal distant birds on water or in the sky). **Eyes first, binoculars second**! Keep your eyes on the birds (or the movement that indicates a bird) and **bring your binoculars up to your eyes**. This is called "getting on a bird." Don't look down for your binoculars; they are still around your neck, and you might lose sight of the bird. Or find a larger object near the bird for focusing, and then move onto the bird itself. If you don't see the bird in a few seconds, lower your binoculars, locate the bird with your eyes again, and repeat the process.

You and your binoculars should now be ready for some serious bird watching!