

# IS YOUR WILDLIFE WORK ENLIGHTENED?

## A GUIDE TO RESEARCHING AND SELECTING WORK FLASHLIGHTS.

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Once upon a time I had a work flashlight that I loved and adored. It fit snug in my pocket and had a cool hat clip. I had a rotating system for charging the batteries, and I was convinced this light had all the features I'd ever need. I purchased three of them. Work life was great until one day I discovered that the company had discontinued the model. No one had them in stock. One by one my three lights broke or I lost them. I felt the world collapsing in around me. I was suffocating. And I should point out that I'm allowed at least one area of life to be dramatic.

I obviously needed a new flashlight, and so I began my research. My plan was to find a model with the exact same features as my last one. But I discovered something unexpected. In my search I realized there were better options and more features available than what my prized flashlight had sported. It was a welcomed surprise. However, I soon realized that with more options I would need to seriously up my flashlight knowledge, and then sift through and rank order all the features according to their importance to me. What was in store for me was an education in Flashlights 101. That process is what equipped me to write this article.

As wildlife professionals we research, purchase, and test a wide variety of personal gear that helps us accomplish our daily work. Boots, gloves, phone, protective wear, you name it. Sometimes we land on a winner with the first purchase, and other times things fail at their task. The NWCOA community is a great group to bounce ideas on the top picks for various purchases. Flashlights are no exception.

When the question of flashlights is posted in the NWCOA forums we always see a wide range of recommendations. If we were to line up these luminary favorites in a row you might be shocked how different they look from each other. The list of features would also be extensive. So how do you go about selecting a work flashlight? I suggest doing so by working through the list of questions I pose below. Each answer will educate you on important considerations when comparing flashlights, which in turn will equip you to rank and select a torch that is right for you.

### **What is the intended primary use of this flashlight?**

This is an important starter question because there is not one single flashlight on the market that will cover all situations. I interviewed Zak Wilson, who publishes both individual and collective flashlight

reviews at zakreviews.com. In asking how he guides others to choose a flashlight, he said “Try to lay out your requirements. Know your application. You may not understand technical information like the difference between a lumen and a candela. But you’ll at least know in advance that you’re looking for a flashlight that does something specific, like throwing out to 50-meters.” So are you looking for something that can illuminate a distant dark corner? Or do you need a light for working in an attic all day with minimal battery swaps? Do you need a flashlight that fits in your pocket? Or perhaps is it critical that your light be hands free?

Answering this question points to the numerous styles of flashlights available on the market. Smaller sized lights serve as an EDC (EveryDay Carry) and will fit in your pocket. Larger flashlights will often have a greater throw (the distance to which the light will travel) to help you zero in on a distant target. Headlamps are designed to provide flood lighting with hands-free use, and often are designed to detach and work as a right-angle torch. Since no single flashlight does it all, you will likely need multiple devices to cover a variety of work settings.

### **What performance features do I need?**

Let’s talk about flashlight brightness. In the flashlight world, you’ll need to be a bit more specific because the output of light can be measured several ways: in lumens, lux, and candelas. A lumen is a measure of all light emitted from the lens. A lux is a measurement of the amount of light that reaches a defined surface, which means both the measured distance and the tightness of the beam are factored in. A candela measures light intensity from a single direction, which helps to distinguish between lights designed to flood versus focused beams. Most flashlight descriptions report their output in lumens. The total lumens needed will vary by work application but will likely range between 500 and 3000. There are certainly higher lumen flashlights, but these generally will either be bulky or have short run times on their highest output (turbo mode) beam.

If you need to get acquainted with the lumen

scale, you might start by purchasing an ordinary lightbulb that plugs into a desk lamp. I interviewed George, a contributor to the r/flashlight group on Reddit (u/not\_gerg), who explained this trick to me. “Start with a 1300 lumen bulb,” advises George. “This bulb rating will serve well as a good reference point, and you can scale it up or down from there.”

**TIP:** Higher lumens doesn’t necessarily equate to higher perceived brightness. If a flashlight casts its light at a wider angle (i.e., greater flood, or a wider hot spot), then it may not illuminate your target as well.

Most flashlights have abandoned the incandescent bulb and now use LEDs. These diodes are typically coated with a phosphor blend and are controlled such that specific colors are emitted. The emitted color spectrum is measured using the Kelvin (K) temperature scale. Lower temperature colors (roughly below 4000K) will appear in the softer color spectrum of yellows and oranges. 5000K is considered a neutral white. Higher temperatures (roughly above 5400K) are considered cooler and will lean into bluish hues. A good starting point is to review flashlights emitting in the neutral white color temperature range, and then see what best catches your eye.

Another commonly reported measurement is a light’s CRI (color rendering index). This is a measurement of the emitting light’s ability to accurately reproduce the true colors of your target as compared to our most universal light source, the sun. The scale runs from sub 0 to 100, and numbers in the 90’s are considered best. Is this feature necessary for wildlife work? In many situations a lower number (below 90) may not make much difference. Identifying the presence of bat droppings on white insulation in an attic can be accomplished with a lower CRI. However, trying to pick out raccoon droppings on dark landscaping mulch at night may prove quite difficult without a high CRI light source.

### **What about the battery?**

A dedicated article would be needed to cover all

aspects of batteries. Says Zak Wilson, “Batteries will likely be one of the main deciding factors when choosing a flashlight.” This article won’t go deep, but rather will cover enough to raise your awareness of several important features. Some flashlights have built in, hardwired rechargeable batteries. These require plugging in the drained flashlight to recharge it, which means you can’t use it during the charging process. Other models allow you to swap in fresh batteries as needed. The flashlights of today have evolved from the days of AAA, AA, C, and D cell batteries. Three of the more common rechargeable battery sizes include the 21700, 18650 and 14500. The numbering refers to the approximate dimensions. For example, the 14500 has a diameter of approximately 14mm and a length of approximately 50.0mm. Knowing this system is helpful when trying to visualize battery sizes.

If purchasing a flashlight that allows swappable rechargeable batteries, then consider purchasing those labeled as protected. Protected batteries have an onboard electronic monitoring circuit designed to minimize dangers such as overheating (both while charging and discharging), charging beyond capacity, and limiting the discharge rate. This makes for a safer battery and they typically last longer. “If you think you’ve found a good flashlight,” says Wilson, “check to see if it specifies needing a protected or unprotected battery.”

**TIP:** Rechargeable batteries of the same size can also be purchased with different specifications. Two important considerations: (1) A battery’s total energy capacity is measured in milliamp hours (mAh). (2) The rate at which the battery can discharge relates to its voltage. Make sure your flashlight is compatible with the battery you choose.

Ultimately, life becomes easier when you choose a flashlight system in which you have multiple extra high-quality batteries that are charged and on standby. Swapping a battery is much quicker than charging a flashlight with a hardwired battery. Purchasing a flashlight that uses a common battery size is also simpler than brands and models using

proprietary batteries.

### **What is my price range?**

Certainly, the cost of a flashlight is going to factor into a purchase decision. But at what point in your research should price be considered? Someone might decide beforehand on a price range and then conduct their research while only considering lights within that range. This may help narrow down the number of candidates but could result in subpar choices. I think a better approach is to factor in the price towards the middle or end of your research. More information will make you a smarter shopper. When I consider the price of a flashlight the main driver for me is how long I reasonably expect the flashlight to last before it breaks, or I might lose it. I steer towards lower priced flashlights for EDC lights that I know may get dropped or lost. I store my higher priced flashlights in a protected area. Also consider the ROI of the flashlight. If I know I’ll use a light on a regular basis and it makes my work easier, then I’m fine spending more so that the flashlight isn’t what slows me down.

### **What other features should I think about?**

Let’s touch upon a few additional considerations: **Switch type:** Flashlights may have a side switch, tail switch, or twist switch. It’s one thing to imagine the operation of the switch, but something entirely more to get it into your hands and let it roll around in your fingers.

**Clips:** Useful for attaching a light to a ball cap or harness. Some flashlight models allow you to reverse the clip. There is also a secondary market for clips.

**Auxiliary lights:** These are ultra-low output secondary LEDs that stay on after the main light is turned off. Great for us clumsy types who can’t find your torch in the dark. I believe most models that have auxiliary lights allow you to turn off this feature.

**Right angle lights:** A flashlight in which the head (housing the LED) is set to cast light perpendicular to the flashlight body. This is helpful when you need light coming in from the side of your work area. Many models of headlamps are simply right

angle lights that detach from a head strap.

**Magnetic tail:** This is a feature you may find useful, but I also mention it here so you can actively avoid it if a magnet will get in the way (think environments with metal shavings, or kept in your pocket)

**Programmable UI (User Interface):** Some flashlights allow you to customize your settings. For example, you can set the high mode (ceiling) output, remove toggle modes (no more annoying strobe!), or adjust how the brightness steps up and down. One of the more common firmwares is Anduril 2, and there are online guides available showing how to click through the settings.

If you think you have found a good candidate, a helpful next step is to look for an online independent review. George (u/not\_gerg) told me there are good and bad places to look for flashlight reviews. “In general, disregard reviews from sites like Amazon.” They tend to be too shallow, and can be susceptible to strong bias and hearsay. Some of George’s preferred sites for in-depth reviews include ZeroAir Reviews (zeroair.org), Tactical Grizzly Reviews (tgreviews.com), and 1Lumen (1lumen.com).

### Where do I go from here?

I suppose this is the place to say it: I’m not going to provide any specific flashlight recommendations in this article. I mulled over this a lot and have two reasons for withholding my picks. First, the purpose of this article is **to teach you** how to research and choose your next flashlight. I won’t undermine this aim. Second, particular flashlight models come and go as their popularity wanes and as technology improves. A list of recommendations in a published article will become dated, but the basic concepts behind researching flashlights will not.

Hopefully you now feel you have the right level of flashlight knowledge to research, review, and ask good questions prior to your next purchase. You may discover you need to dig deeper into some of the specific parameters. You should be able to rule out a number of flashlights that lack specific features that you deem mission essential. Some will

stand out, and in the end, you will narrow down your top contenders. In my search for my next best EDC flashlight, I ended up purchasing my top three or four candidates. I completed side by side testing to see which provided the best illumination. I twirled them in my hands and played with the switches to determine which one felt most natural. This is how I found my next favorite, and I hope to one day hear the story of how you found yours.

### For further research, consider these resources:

[flashlightwiki.com](http://flashlightwiki.com)

[zakreviews.com](http://zakreviews.com)

[reddit.com/r/flashlight/](http://reddit.com/r/flashlight/)

[flashlights.parametrek.com](http://flashlights.parametrek.com) (an interactive tool to narrow down choices)

[zeroair.org](http://zeroair.org)

[tgreviews.com](http://tgreviews.com)

[1lumen.com](http://1lumen.com)

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