



Opportunities in science editing



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In George RR Martin's unfinished set of novels collectively entitled *A Song of Ice and Fire*, the source material for the popular HBO series *Game of Thrones* (GoT), members of the Night's Watch have sworn an oath to defend the people of Westeros against what lies beyond an ancient fortification known as The Wall. Here's an excerpt of their pledge: *I shall wear no crowns and win no glory. I shall live and die at my post. I am the sword in the darkness. I am the watcher on the walls. I am...the shield that guards the realms of men* (Martin 1996). Dramatic? Yes. Nerdy? Arguably. But the concept of the Night's Watch may serve as a metaphor for the brotherhood and sisterhood of science editors, who help defend authors. Defend authors from what, precisely? From "tropic" cascades, taxonomic "breath", "pubic" engagement, additional "sexamples", environmental "polices", natural resource "mangers", and "casual" mechanisms. Misspelled scientific names or incorrect taxonomy. Missing figures. Mathematical errors. In-text citations without references and vice versa. Ambiguity. Inconsistencies. I've personally observed such terrors and more during my time on "The Wall", in this case a line of defense between manuscript acceptance and publication. And if a science editor has done his or her job, then readers haven't noticed such things, or perhaps not as many of them.

For ecology students exploring nontraditional career options, I'd ask you to consider "taking the black" (or joining the Night's Watch in GoT parlance; Figure 1) and becoming a science editor. While in academia, you have carefully honed your writing abilities, perfected time management skills, and learned to think critically. There's a good chance that you've performed field research or worked as a lab technician; if so, then you've already mastered one attribute – attention to detail – that's directly transferable to and invaluable in publishing. You have likely also contributed to science publications somewhere along a spectrum of responsibility, from data collection to primary authorship, and are sure to have at least a passing familiarity with the peer-review process. Moreover, if you possess or are working toward a Bachelor or Master of Science, then you've been introduced to important concepts in other disciplines such as chemistry, calculus, and statistics. As such, you are well-rounded and eminently qualified to succeed in the scholarly publishing world. That being said, this career may not be for everyone. Editing favors those with somewhat obsessive tendencies (do you find yourself involuntarily correcting grammar or spelling in news articles?) and, in the end, it's a desk job (your days in the field are basically

over). Granted, it's a sacrifice, but you get to combine your background in ecology with your interest in publishing, live in or near the city, and still have your weekends to go hiking in the woods.

Before I go any farther, I'll first explain what I mean by "science editor". Although equivalent positions are available through book publishers (including university presses; www.aupresses.org/resources/jobs-list), I'm going to focus primarily on editors at scientific journals, and specifically on only a subset of those editors. To be clear, I'm not referring to the subject-matter experts – variously known as academic, associate, reviewing, substantive, or technical editors – who serve on a given journal's Editorial Board and whose primary mission is to assess the quality, importance, and timeliness of submitted manuscripts *before acceptance*. Regardless of title, these (mostly unpaid) positions require PhDs by necessity; as such, they fall squarely within the purview of the traditional career route for doctorate-holding ecologists. Here, I'm instead concentrating on a broad suite of other types of editors who work with manuscripts largely *after acceptance*. These positions are not limited to those with PhDs; however, their titles are notoriously varied, often differing between publications or regions, and their respective duties may overlap. Nevertheless, editorial assistants, editorial coordinators, proofreaders, copyeditors (also known as subeditors), and manuscript editors do share a few things in common. As such a science editor, you'll undoubtedly be working under deadline and in frequent contact with



Figure 1. Stylized members of the Night's Watch, wearing the traditional black. Actual photographs of Jon Snow et al., while more relevant and appealing, may be prohibitively expensive and subject to copyright protections – things a savvy editor might warn an author about prior to publication.

authors. In addition to your daily editing responsibilities, you could find yourself simultaneously managing an electronic peer-review system, sizing figures, manipulating images, analyzing journal metrics, writing short original content (such as news dispatches in *Frontiers*), commissioning articles, developing podcasts, or running social media accounts. Although such opportunities (as well as the chance to work remotely) may be available, keep in mind that they are by no means guaranteed. And depending on the journal, its scope, and its workplace culture, even the degree of editing afforded to you may differ dramatically. So, when applying for an editing job, be sure to check the duties involved, given that its title (though important) may be uninformative.

For prospective job seekers, don't be daunted by the lack of an English degree. Copyediting is an acquired skill, and you can pick up grammar rules, proofreaders' marks, and style conventions more easily than core scientific concepts. Journals offer a variety of positions, including those in editorial, design, production, publicity, and sales, and are either self-published through a society or (increasingly) associated with an established partner like Elsevier, Springer, and Wiley. Depending on the publisher, you could be editing papers affiliated with one or more journals, each of which will have its own format (online, print, or both), idiosyncratic style, and publication frequency (eg quarterly, monthly, and weekly). It's a deadline-driven environment, so pay attention to that publication frequency and to your own comfort zone. To be effective, learn to triage, compartmentalize, and multitask. In addition, be aware of journals transitioning to or between publishers, which could be an early warning of forthcoming changes – benign (new tools or production workflows) or otherwise (staff reductions). Because ecology- and conservation-oriented journals are a specialized market and are relatively limited in abundance, you may find it necessary to first work at publications outside of your immediate background. But don't despair; such opportunities provide valuable experience while allowing you to broaden your general knowledge base and explore less familiar subject matter. The same is true for freelancers (for additional information, refer to the Editorial Freelancers Association: www.the-efa.org) – it's often a side hustle with relatively fewer benefits (such as health/dental insurance, paid leave, or retirement plans) but the training can help you land future staff-level positions. Speaking of which, to better gauge your aptitude, prospective employers may require you to take a short exam as part of your job interview. Copyediting is the typical focus, but general questions on scientific topics are not off-limits. And you could be asked to compose a short writing sample on the fly.

Additional resources to consider: (1) Two professional societies – the Society for Scholarly Publishing (SSP;

www.sspnet.org) and the Council of Science Editors (CSE; www.councilscienceeditors.org) – have numerous online resources, including job postings. The CSE annual meetings also provide seminars, short courses, and networking opportunities useful to those at different career stages and skill levels. (2) Internships can offer practical experience, a short-term chance to see whether this career path suits you, and a stipend if you're lucky. SSP hosts a site with a range of opportunities (www.sspnet.org/careers/internships). (3) Those seeking professional certification can be tested for editing proficiency by the Board of Editors in Life Sciences (BELS; www.bels.org). (4) Various graduate and professional degrees in scholarly publishing are also available (<http://bit.ly/2FvNX7L>). (5) *The Scholarly Kitchen* blog (scholarlykitchen.sspnet.org) posts regular discussions on topical subjects in the industry, ranging from bias to copyright to open access. For more suggestions, see WebPanel 1.

The importance of effective communication in science is widely recognized, but the reality is that some scientists are better communicators than others. What's more, submissions often go through multiple rounds of peer review, during which time errors may be inadvertently introduced. Given this context, science editors have a valuable role to play. Full disclosure – the career path is not financially lucrative. However, it's very rewarding by other measures – you'll see upcoming research developments first-hand, likely be offered opportunities for professional advancement over time, and possess a tangible record of your accomplishments. As a student or practitioner of ecology, you are inherently well-equipped for success as a science editor, due in part to your interdisciplinary training, observational skills, and detail-oriented nature. Take a moment to investigate whether this option is the proper fit for you – as a current student, recent graduate, or even a mid-career professional looking for a change.

■ Reference

Martin GRR. 1996. *A Game of Thrones*. New York, NY: Bantam Books.

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■ Author biography

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