

Tools for Quickly Adapting During Pandemics, Disasters, and Other Unique Events

Abstract

Amid the current COVID-19 pandemic, Cooperative Extension personnel across the nation are quickly adapting to daily changes while continuing to respond to the needs of clients. This article provides examples of how we in North Carolina State Extension Forestry have responded to the challenges we have faced thus far. The solutions and tools described can be used in the current situation and for future pandemics, disasters, and other unique events that require "alternative" arrangements. The needs of landowners, farmers, youths, and the public at large will not diminish during this unprecedented time; therefore, we should continue to innovate to ensure that our impact is not diminished.

Keywords: [COVID-19](#), [pandemic](#), [remote technology](#), [adaptation](#)

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Introduction

At the end of 2019, an outbreak of respiratory disease caused by a novel coronavirus (named COVID-19) emerged across the world, reaching the United States in early 2020 (Centers for Disease Control and

Prevention, 2020). On March 11, 2020, the International Health Regulations Emergency Committee of the World Health Organization declared the outbreak a pandemic (World Health Organization, 2020), and on March 13 The White House (2020) issued a proclamation declaring a national emergency in the United States. Shortly after the national emergency was declared, many states, including North Carolina, declared their own emergency statuses, closing schools and businesses and banning gatherings of people via stay-at-home orders. At the time of this writing, the pandemic's effects are evolving and expanding worldwide on a daily basis.

Extension is well equipped to play an important role in communities during times of disaster and crisis, including the ongoing pandemic. The roles of Extension during disasters have been well documented, as Extension educators work on multiple fronts to find or disseminate the information needed for a particular situation quickly. For example, after Hurricane Katrina, Extension personnel in Louisiana were back at work immediately, coordinating distribution of family-related recovery publications and assisting local communities (Cathey, Coreil, Schexnayder, & White, 2007), and during a local crisis in Klamath Falls, Oregon, when the provision of irrigation water to farm families was eliminated, the Klamath County Extension professionals hosted community meetings to identify needs and strategies for action (Cartwright, Case, Gallagher, & Hathaway, 2002).

As COVID-19 spreads throughout the United States, North Carolina State Extension Forestry (NCSEF) staff have been able to quickly adjust and adapt to the rapidly changing guidance and restrictions placed on businesses, communities, and individuals in the state. In this article, we discuss some adaptations and actions we have taken in North Carolina due to concerns and restrictions related to the pandemic. The information provided herein can be used now and as effects of the pandemic evolve. Additionally, although these actions have been undertaken amid the COVID-19 crisis, many can be continued in perpetuity or adapted for similar future events.

How NCSEF Is Quickly Adapting

NCSEF professionals have been actively engaged in many different efforts in response to the unprecedented situation caused by the pandemic. We organize these efforts broadly into three categories: helping non-Extension colleagues, continuing existing services to clients, and identifying and addressing novel needs and challenges. What we present herein are just some examples of how NCSEF staff have adapted thus far and, likely, of how Extension professionals elsewhere may be quickly adapting to the challenges that come with a pandemic.

Helping Non-Extension Colleagues

Prior to COVID-19, NCSEF staff regularly used many remote technologies. These tools allowed for partnering with other states to deliver regional programming and regularly engaging with statewide and regional partners. Familiarity with these tools has made NCSEF staff a valuable resource for helping non-Extension colleagues meet the challenges of adapting to unique conditions while needing to carry on with their work (Table 1). For example, an NCSEF staff member, who has more than a decade of experience using online technologies such as Zoom, was called on to conduct training for faculty and staff on ways they could use the technology to meet their needs. In addition, NCSEF staff provided access to Zoom for the Environmental Educators of North Carolina to convene over 60 environmental educators from across the

state to discuss concerns, ideas, and resources related to environmental education programming. Because of the technology, participants were able to divide into three "rooms" to address specific topic areas and then rejoin the collective group to wrap up. These efforts, and others, were deployed within days of the university's announcing that nonessential employees would be required to work from home.

Table 1.
Challenges Posed Due to COVID-19 and Our Solutions to Helping Non-Extension Colleagues

Challenge	Solution(s)
Lack of experience with or access to some remote technologies among faculty and non-Extension colleagues	<ul style="list-style-type: none"> • Serve as a resource for teaching faculty needing to provide courses online. • Provide training to faculty, staff, and partners in using Zoom and other telemeeting platforms and unfamiliar technologies. • Aid teaching faculty in adapting their synchronous in-person classes to asynchronous online courses. • Provide Zoom capabilities to groups that otherwise would not have access.
Need for large-capacity means of bringing people together	<ul style="list-style-type: none"> • Provide access to the Zoom platform with a larger capacity than what other non-Extension faculty and staff have available in order to convene meetings of up to 500 people (e.g. college town hall meetings, department town hall meetings, regional webinars).
Need to continue to conduct ongoing faculty searches	<ul style="list-style-type: none"> • Provide the Zoom platform for interviews, which allows for continuity of work.

Continuing Existing Services to Clients

As in-person events and workshops were canceled and "social distancing" was promoted, online technologies became ideal tools for continuing to provide content to our audiences. For example, we increased our use of web conferencing services and webinars. Extension has shown that webinars can be impactful and are an efficient and cost-effective method for reaching an audience (Allred & Smallidge, 2010; Formiga, Stone, Heleba, McQueen, & Coe, 2014; Pulec, Skelly, Brady, Greene, & Anderson, 2016; Rich et al., 2011). Looking to the future, use of web services to stream presentations can be conducted at any time and could improve access to Extension services, particularly for those with limitations such as disabilities or economic constraints who may struggle to attend in-person programs.

Obviously, however, continuing services to clients during a pandemic does not come without challenges (Table 2). We anticipate that these will continue to grow and evolve as the pandemic continues.

Table 2.

Challenges Posed Due to COVID-19 and Our Solutions to Continuing Existing Services to Clients

Challenge	Solutions
Need to address clients' questions and needs while working remotely	<ul style="list-style-type: none"> • Use email. • Apply call forwarding to have calls forwarded from work phones to cell phones. • Convert voicemail to email. • Check voicemail on a regular basis. • Respond to social media messages.
Inability to conduct face-to-face meetings, programs, and presentations	<ul style="list-style-type: none"> • Convert scheduled meetings and presentations from in-person to virtual. For example, we changed landowner meetings that were to be conducted in-person to a series of webinars incorporated into our North Carolina Woodland Owner Lunch & Learn Series. • Offer to conduct meetings online for those groups who would not otherwise have access to remote technology. • Conduct and host webinars more frequently. • Offer live and archived webinars as an opportunity for people to keep acquiring continuing education credits. For example, we are hosting such webinars on the Webinar Portal for Forestry and Natural Resources (http://www.forestrywebinars.net/).

Identifying and Addressing Novel Needs and Opportunities

Continuing "normal" life and activities to the degree possible while still staying informed about the ongoing pandemic—or, in other cases, other disasters—can help many cope with the stress produced by disasters or traumatic events (Centers for Disease Control and Prevention, 2019). Extension's ability to adapt and educate creatively during these unique times is an opportunity not only to continue service but also to help others understand and cope with the disaster (Cathey et al., 2007; Eighmy, Hall, Sahr, Gebeke, & Hvidsten, 2012). Though technology is an important tool for providing services to address emerging needs during and after a disaster, it is crucial to be aware of inequalities in access to digital technologies and to work to overcome them (Haworth, Eriksen, & McKinnon, 2019). Social media is particularly helpful for reaching large audiences quickly (Gharis, Bardon, Evans, Hubbard, & Taylor, 2014), and NCSEF staff have used

Facebook posts (Figure 1) and Twitter to share information with our audiences during the ongoing pandemic. In the future, additional tools such as Facebook Live also could be used. Additionally, "FaceTiming" with clientele may help when consultations require seeing a situation. Our challenges and solutions for identifying and addressing novel needs and opportunities are detailed in Table 3.

Figure 1.

Facebook Post Promoting Online E-learning for People Home Due to Pandemic

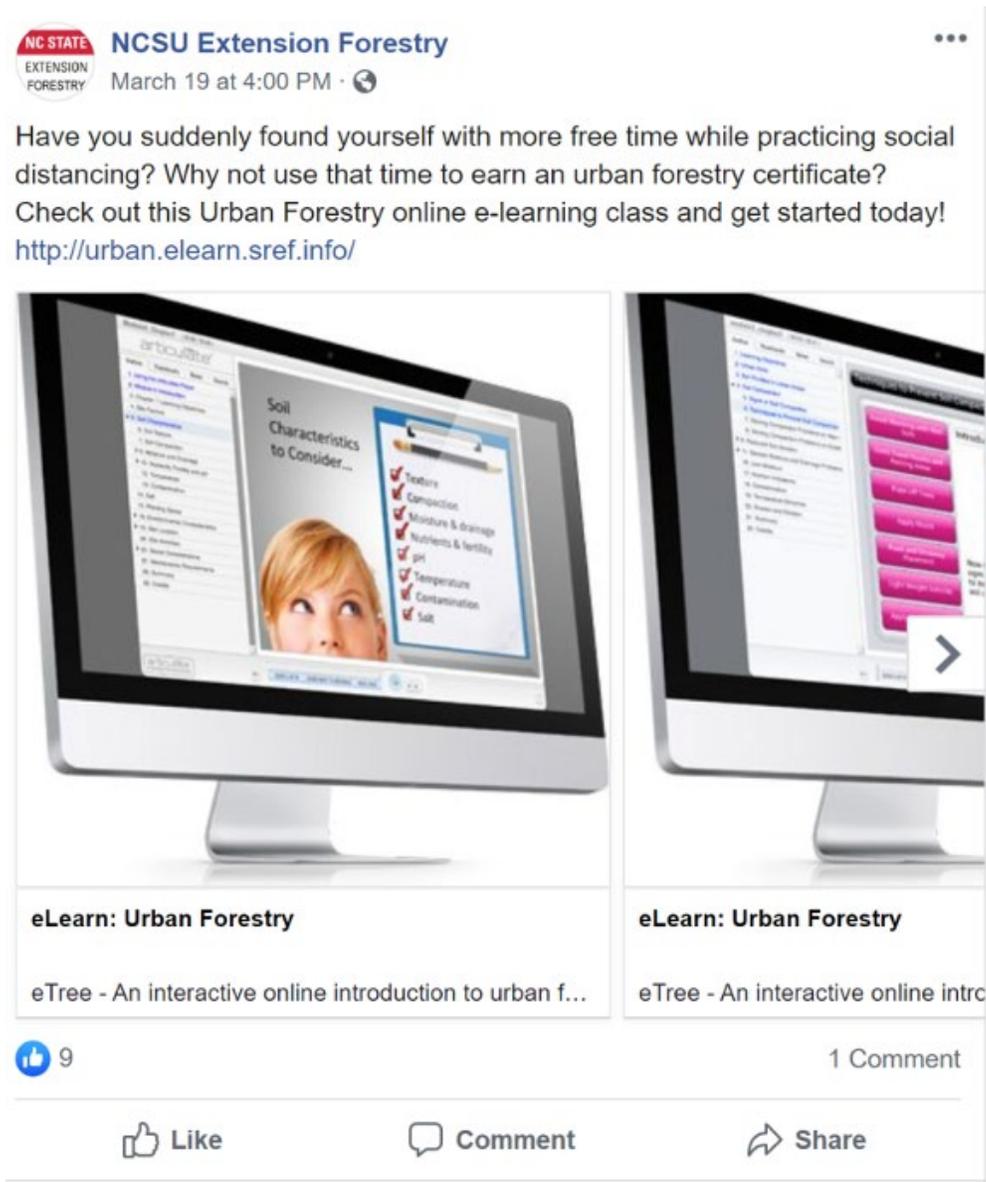


Table 3.

Challenges Posed Due to COVID-19 and Our Solutions to Identifying and Addressing Novel Needs or Opportunities

Challenge	Solutions
Limited or lack of Internet access	<ul style="list-style-type: none"> • Convert presentations to YouTube videos that can be viewed among clientele on smartphones.

- Email presentation slides to those with limited Internet access.
 - Use telemeeting services that can be accessed through smartphones, such as Zoom.
 - Host "watch parties" at Extension facilities so that those without reliable Internet access or cell phone service can watch streamed programming before or after distancing restrictions are in place.
- Need to provide timely, relevant information related to forestry and natural resources amid a pandemic
- Use social media to:
 - share online training opportunities,
 - provide information about events that have been canceled or postponed, and
 - recommend videos, courses, or other opportunities for virtual learning.
 - Use LISTSERVs or other platforms, such as MailChimp or Constant Contact, to reach many people at once.
 - Develop blog posts or articles for clients related to COVID-19. For example, we published a blog post on hygiene tips for prescribed burners (www.go.ncsu.edu/covid19tipsforprescribedburners).
 - Develop (or crowdsource) and share a list of online learning platforms and training courses for both Extension professionals and landowners.
- Need for continued collaboration on projects and publications
- Use tools such as Google Documents for instant virtual collaboration.
 - Use tools such as Google Spreadsheets to make it easy for others to add resources and for the resources to be shared widely.
- Feelings of stress and anxiety among coworkers, clientele, and others
- Conduct recurring office meetings via Zoom to communicate with and check in on staff.
 - Host virtual social hours for colleagues to unwind together.

- Use social media to encourage people to go for a walk, visit a natural area, or go outside, while responsibly social distancing.
 - Share humor through Google chat or other messaging platforms as a form of distraction.
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Conclusion

This article provides examples of tools NCSEF staff have adapted amid a pandemic, although if conditions worsen, we may reevaluate, revise, or add to these strategies. These efforts can be used for future pandemics, disasters, and other unique events that require "alternative" arrangements. In North Carolina, NCSEF's ability to quickly adapt was in part due to existing use of and familiarity with technologies such as Zoom. Extension should explore these types of alternative arrangements and use of remote technologies during normal operations both to improve and increase access to services as a matter of course and to be better prepared to respond in times of crisis.

Even though there will be a learning curve as we undergo new circumstances on a daily basis during these unprecedented times, Cooperative Extension has a unique responsibility to push forward and continue to serve the people. Our shared knowledge can help empower us to act in the face of uncertainty and support one another in our important work.

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