The emergence of a global pandemic due to the spread of COVID-19 has had profound effects on how research and scholarly activities are conducted for many professional herpetologists. Responses to COVID-19 and mitigation efforts vary by country and institution but have largely resulted in the closures of academic campuses and research areas, travel restrictions, and interruptions in research funding. These responses have forced herpetologists to change the way they manage their professional responsibilities.

With the closure of academic and research locations, many individuals have had to shift to working remotely and from home. Virtual and distance learning have become mainstream for many students and educators. Time previously allocated to field and/or laboratory data collection may have been shifted to data analysis and manuscript preparation as more individuals are working from home and research spaces are closed or have limited operating capacity. Though generally viewed as negatively affecting professional responsibilities, some responses to the pandemic may be viewed favorably, such as the increased opportunities to engage with coworkers and communities through virtual seminars and conferences. Recognizing that the effects of COVID-19 are not uniform among individuals, we sought to better understand and quantify how COVID-19 has directly affected herpetologists across the world.

Previously, World Congress of Herpetology Newsletter readers were asked to complete a survey to investigate how the pandemic has affected the life of herpetologists (Riley et al. 2020). A total of 102 responses were recorded and have been summarized here to better understand the effects of this pandemic. Responses were submitted from
During the pandemic

individuals across 34 different countries (Fig. 1), with most respondents from North America (33%) and Europe (20%). The gender breakdown of respondents was male (58%), female (41%), and not provided (1%; Fig. 2A); the age breakdown was ≤21 (3%), 22–30 (25%), 31–40 (29%), 41–50 (17%), 51–60 (16%), and >60 (10%; Fig. 2B); and the profession breakdown was student (undergraduate, MSc, PhD; 41%), academic researchers (11%), independent researchers (14%), academic faculty (30%), museum staff and curators (2%), and unemployed (2%; Fig. 2C). Most respondents were currently based at home (69%), compared to work (29%) or research locations (2%); however, it is unclear how exactly these responses were altered by the emergence of a global pandemic. Several individuals expressed difficulty with international travel and experienced challenges and delays in their return home from research locations.

“Flights have been cancelled; I’ve been stuck abroad for longer than intended.”

Fig. 1. Map showing the countries where survey respondents maintain institutional affiliations (green shading).

Fig. 2. Gender (A), age (B), and profession (C) breakdown of survey respondents.
As COVID-19 spread across the globe in early 2020, countries, institutions, and research sites began to restrict travel and limit access to facilities and workspaces. Just over half of individuals (56%) responded that they were sufficiently able to close down and cease research activities prior to local restrictions and shutdowns.

“We had to cancel an experiment partway through and euthanize the animals before the study could be completed.”

The majority of individuals responded that COVID-19 had not affected their funding (56%), likely due to funds previously being allocated for 2020. For those individuals who responded that funding had changed due to COVID-19, 70% of respondents indicated that it was negatively affected (e.g., cancelled contracts, reduced budgets) and 30% indicated funding was positively affected (e.g., project extensions, additional funds secured). When trying to understand how research projects have been affected by COVID-19, most respondents provided answers that fell into one of three main categories: reduced or withdrawn funding (26%), increased research or logistical difficulties (16%), or no research travel or site access (58%; Fig. 3).

“IT is difficult to decide what actions are safe and which aren’t. It’s a hard time to navigate if fieldwork should be continued or if it is better to adapt and take up different priorities.”

Regardless of the exact method in which COVID-19 has affected research projects, 76% of respondents indicated at least a 20% reduction in the amount of work they are able to accomplish compared to pre-pandemic conditions (Fig. 4).
With the demands and expectations of teaching, field research, and laboratory research changing, 64% of individuals responded that it has been difficult balancing these responsibilities despite 52% of individuals stating that they have access to adequate resources to conduct their professional responsibilities. It is possible that the difficulty of balancing research and teaching expectations during a pandemic contributed to 61% of respondents believing that COVID-19 will impact their careers.

Respondents indicated that the most beneficial way to lessen or ameliorate the negative effects of the pandemic on their career would be through additional financial support (76%). Support of individuals outside of their professional employers was also investigated. In response to the pandemic, individuals suggested that scientific societies and professional organizations increase funding opportunities (36%), offer virtual meetings or facilitate remote access to resources (31%), increase communication and networking opportunities (17%), and offer personal resources to help manage life during a pandemic (16%; Fig. 5).

The majority of respondents (80%) indicated that travel restrictions associated with COVID-19 have prevented individuals from attending research events such as conferences, seminars, and workshops. When asked if these events had been replaced with virtual or online options, 48% indicated they had been, and 70% indicated that these virtual or online options were helpful. Given the responses from this survey were collected from July to November, we suspect that events at the start of this global pandemic were cancelled and that those events in the latter months of 2020 have had time to transition to virtual or online formats.

“The inability to carry out planned fieldwork will delay results, and if funding is not extended, it will impact the quality of our study.”

“On one hand it is easier to attend. On the other hand, it is difficult to focus when one is at home with home life and other obligations.”
Despite challenges associated with managing professional and personal responsibilities during COVID-19, 86% of individuals responded that the pandemic has provided novel opportunities, with the most widespread answer including virtual meetings or online seminars (70%). Another frequent response was the ability to finish and submit research papers, which was included in 54% of the responses. When asked specifically about writing during the pandemic, 23% responded that they had submitted a paper that was mostly completed prior to the pandemic, 18% responded that they had started writing a new manuscript, 6% responded that they had started and submitted a new paper, 24% had submitted one or more manuscripts, and 29% had not yet submitted a paper (Fig. 6). Papers that had been worked on primarily were research papers (77%) but also included review papers (8%) and short notes (16%).

“I was writing more than ever.”

Many individuals responded that they would like to see changes in traditional work practices continue once we have recovered from this global pandemic. We asked what arrangements respondents would like to see continue in the future: 41% of responses favored flexible work arrangements, 33% favored virtual conferences, and 26% favored online seminar series (Fig. 7).

“As a group leader I find it difficult to discern who works better from home and who needs more oversight.”
During the pandemic

The COVID-19 pandemic and the subsequent institutional, regional, and national responses presented a dramatic shift in work and lifestyle for many. Through the survey, we hoped to capture a snapshot of how the initial pandemic response affected herpetologists globally. As anticipated, the survey showed the pandemic generated a spectrum of challenges and new experiences. Perhaps most notable was that many individuals commented on the importance of future financial support in helping to minimize the impact of COVID-19 on careers and research projects, particularly those involving disrupted fieldwork. Respondents were united in recording reduced work output, most likely linked to a large number of people also detailing the difficulties of balancing new and/or changing responsibilities and working from home. Perhaps more encouraging is that the majority of participants reported that the pandemic had provided novel opportunities which they would see carried over into post-pandemic life.

Literature Cited: