

1 **Recognizing reflexivity among conservation practitioners**

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45 **Impact statement (140 characters max)**

46 We show how conservationists self-reflect on their values, background, and emotions; these
47 reflections shape conservation practice.

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63

64 **Abstract**

65 When deciding how to conserve biodiversity, practitioners navigate diverse missions, sometimes
66 conflicting approaches, and uncertain trade-offs. These choices are based not only on evidence,
67 funders' priorities, stakeholders' interests, and policies but also on practitioners' personal experiences,
68 backgrounds, and values. Recent scholarly literature has called for greater "reflexivity" – an
69 individual or group's ability to examine themselves in relation to their actions and interactions with
70 others – in conservation science. But what role does reflexivity play in conservation practice? Here,
71 we explore how self-reflection can shape how individuals and groups conserve nature. We provide
72 examples of reflexivity in conservation practice by drawing on a year-long series of workshop
73 discussions, online exchanges, conversations with ten experts, peer-reviewed and grey literature, and
74 our own experiences. We find that reflexivity among practitioners spans individual and collective
75 levels and informal and formal settings. Reflexivity may also encompass diverse themes, including
76 practitioners' values, emotional struggles, social identities, training, cultural backgrounds, and
77 experiences of success and failure. However, reflexive processes have limitations, dangers, and costs;
78 both informal and institutionalized reflexivity requires allocation of limited time and resources, can be
79 hard to put into practice, and alone cannot solve conservation challenges. Yet, when intentionally
80 undertaken, reflexive processes might be integrated into adaptive management cycles at multiple
81 points, helping conservationists and organizations better reach their goals. Reflexivity could also play
82 a more transformative role in conservation, motivating practitioners to re-evaluate their goals and
83 methods entirely. Ultimately, we highlight how reflexivity might help the conservation movement
84 imagine and thus work towards a better world for wildlife, people, and the conservation sector itself.

85 **Introduction**

86 Conservation practitioners routinely make complex decisions, balancing the interests of diverse
87 actors, with uncertain trade-offs between multiple priorities (McShane et al. 2011; Ausden & Walsh
88 2020). Numerous factors inform these choices, including practitioners’ personal experiences,
89 knowledge, and values, as well as evidence, funding constraints, stakeholder interests, legislation, and
90 other considerations (Cundill & Fabricius 2009; Pascual et al. 2021). For instance, practitioners’
91 attitudes towards trophy hunting as a conservation tool are likely to be partly informed by their ethical
92 stance. Or, as another example, practitioners’ political opinions regarding free-market capitalism
93 might influence their choices to promote market-based conservation approaches, like payment for
94 ecosystem services (Sandbrook et al. 2019). Moreover, conservation decisions are rarely made by
95 individuals alone; the attributes and values represented in teams, organizations, and movements
96 collectively influence the direction of conservation efforts. For example, Mace (2014) described how
97 changing views of the relationship between biodiversity and people shaped mainstream conservation
98 practice, with a shift from safeguarding nature for its own sake, to protecting it for people, towards a
99 focus on relational interactions.

100 Drawing on the qualitative social sciences, recent conservation literature encourages researchers to
101 evaluate and report how their attributes and outlooks influence their research (e.g., Bennett et al.
102 2017; Moon et al. 2019; Brittain et al. 2020; Montana et al. 2020; Ramesh 2020; Beck et al. 2021;
103 Boyce et al. 2021; Staddon 2021; Staddon et al. 2021). For instance, researchers might examine how
104 values affect their choice of research questions, how identities frame their interactions with others, or
105 how their science impacts the world (Beck et al. 2021). But this process of self-reflection about
106 actions and interactions with others – sometimes termed *reflexivity* – may also be important for
107 conservation practice. Specifically, reflexivity may help enable “flexibility, adaptation, and
108 innovation, and – if required – transformation, in the face of change” in conservation practice
109 (Wyborn et al. 2020).

110 In this essay, we examine how some practitioners self-reflect on their values, identities, emotions,
111 training, and other characteristics and how this shapes the ways they do conservation. We start by
112 defining what we mean by conservationists and reflexivity before outlining our approach. We then
113 consider a) where reflexivity is present in the conservation sector, b) the themes and contexts it spans,
114 c) potential limitations, dangers, and costs, and d) its possible roles in adaptive and transformative
115 conservation management. By sharing real-life examples and their associated benefits and limitations,
116 we aim to encourage individuals and groups to explore the role of reflexivity in their conservation
117 work.

118

119 **Who are conservationists, what is reflexivity, and how do they connect?**

120 Drawing on Sandbrook (2015), we define conservationists as people who intend to establish, improve,
121 or maintain good relations (as subjectively perceived) with nature. This definition could encompass
122 farmers who set aside land for wildlife, international policymakers, accountants within conservation
123 organizations, scientists who develop conservation evidence, and many others. However, we focus on
124 those who might *self-identify* as conservation practitioners while also discussing some examples from
125 applied conservation science.

126 We use the term reflexivity to mean an individual or group's ability to examine their feelings,
127 identities, reactions, behaviors, motives, and other attributes and how these influence what they do or
128 think in a situation (adapted from Cambridge Dictionary 2021). Reflexivity can be a confusing term,
129 particularly because scholars across disciplines have defined it in multiple different ways (Lynch
130 2000; Montana et al. 2020). Furthermore, the word *reflex(ive)* also means an automatic and
131 unconscious response, which is almost the opposite of conscious self-reflection. Moreover, self-
132 reflecting on what one thinks and does is a routine part of daily life for most people (Archer 2007),
133 including conservation practitioners, even if they do not use the term reflexivity. As such, the term
134 reflexivity might seem like unnecessary jargon. Yet, naming this process might help individuals
135 intentionally engage in it, find and share resources, and promote it as a legitimate part of conservation

136 practice. For this reason, we intentionally use the term reflexivity but also synonymously use the more
137 relatable non-technical language of self-reflection.

138 For social anthropologists, reflexivity implies exploring how their identity, behavior, and thinking
139 influence the human relationships of ethnographic fieldwork, data interpretation, and writing. Many
140 conservationists are concerned with both human and human nature (Sandbrook et al. 2019). Thus,
141 conservationists' self-reflections might examine their relationships with wildlife as well as with
142 fellow humans. Furthermore, many disciplines, emphasize the role of reflexivity in the research and
143 writing process (Whitaker & Atkinson 2019). However, conservation is action-oriented, so reflexivity
144 in this context concerns both practice and research.

145

146 **Our approach**

147 We are a mix of 11 academics and practitioners from different backgrounds and professions, studying
148 and working in different countries around the world. Most of us have connections to the United
149 Kingdom, with six of us from European countries, two from North America, two from South Asia,
150 and one from South America. Five of us are women, six of us are men, and at the time of writing,
151 seven of us were doctoral students. All (aside from [redacted]) were chosen from a pool of over one
152 hundred applicants following an invitation to collaborate (available at: [redacted]), shared through
153 networks and social media, and targeted at early-career conservationists. Applicants were asked to
154 describe their role, location, background, interest in the topic, and what they felt they could contribute
155 to the workshops. These applications were evaluated by [redacted], who aimed to select those with a
156 demonstrated interest and relevant experience related to reflexivity in conservation, from a range of
157 backgrounds and geographical locations.

158 This essay was developed through seven three-hour workshops and ongoing online discussions
159 involving all co-authors through 2020 and 2021 as part of [redacted]. Reflexivity is an enormous topic
160 and is sometimes written about in relatively abstract terms and not named explicitly (making it

161 difficult to systematically study). For these reasons, we have sought to foreground real-world
162 examples and only present the most illustrative of numerous cases that we found.

163 Each workshop centered on a specific question, including: What is reflexivity in nature conservation?
164 What topics might conservationists self-reflect on? When or where do conservation practitioners self-
165 reflect? What might reflexivity in conservation look like in the future? These workshops accompanied
166 structured activities, like discussions through an online forum and searching for and examining
167 relevant peer-reviewed and gray literature. We also drew on our own experiences with reflexivity.
168 Furthermore, we invited ten experts (five from government agencies, two from non-governmental
169 organizations, and three from academic institutions) from our readings and networks to share
170 examples of reflexivity. These experts were named with their permission and reviewed and approved
171 this submission. We documented all workshop and online forum discussions and literature reviews as
172 notes. We split into sub-groups, each tasked with reviewing notes and workshop recordings to
173 consolidate points around a set of pre-defined topics (corresponding to the essay sections), iteratively
174 revising the boundaries of the emergent themes and the examples within them.

175

176 **Six emerging themes from reflexivity in practice**

177 We found numerous examples of reflexivity, spanning multiple levels, from that of individuals and
178 organizations to the wider conservation movement. These examples suggest that conservation
179 practitioners self-reflect on diverse topics, which we group into the themes of: values and views;
180 emotions, wellbeing, and psychology; social identities and relations; cultural traditions and religions;
181 training; and success, failure, and wrong-doing. We map these themes in Table 1 and suggest related
182 questions to help encourage and guide individual and collective reflexivity.

183

TABLE 1

184 Many of our examples described informal processes rather than self-reflections that were intentionally
185 integrated into individual and collective practices. Furthermore, most did not clearly show how the

186 insights gained from self-reflection translated into practical or documentable steps. Equally, many of
187 our examples suggested that self-reflections are rarely discrete events with a clear start, end, and
188 outcome. Instead, it can be an ongoing process, contributing to personal development, management,
189 and perhaps wider conservation trends over time.

190

191 **Values and views**

192 We identified several examples of how conservationists' personal values and views, and their self-
193 reflections on these, influenced conservation practices. For instance, [redacted] previously worked in
194 a project development and fundraising role at a non-governmental organization. He valued
195 biodiversity because of its contributions to human wellbeing and described how this shaped the kind
196 of conservation projects he promoted, such as advocating for sustainable use of biodiversity through
197 agroforestry. Similarly, recognizing that values can underpin choices about actions, South African
198 National Parks surveyed its staff to understand if their views aligned with the organization's vision
199 and those held by other actors (I. Smit, personal communication, 26/01/2021). This work is ongoing,
200 with the results intended to inform the organizations' strategic planning and activities.

201 In several examples, we encountered the idea that value-aligned work contributes to motivation. For
202 example, surveys among conservationists suggest that many people choose to work in the sector
203 because of their values towards biodiversity, and the feeling of "making a difference" was a source of
204 motivation (Papworth et al. 2018; Pienkowski et al. 2021). In contrast, a lack of alignment between
205 values and work activities can be uncomfortable and demotivating. For instance, Suarez (2017)
206 conducted ethnographic fieldwork among conservationists involved in the Intergovernmental Platform
207 on Biodiversity and Ecosystem Services initiative. He observed how many practitioners used concepts
208 such as ecosystem services when engaging with policymakers while themselves feeling
209 uncomfortable with emphasizing the instrumental value of biodiversity. We found examples from our
210 own experiences where our values conflicted with others. For instance, one of us left an organization

211 because of feeling that its activities involving displacing local communities from forests were
212 unethical.

213 We also found several examples discussing how practitioners' values influenced collective
214 conservation efforts. For instance, the draft post-2020 Global Biodiversity Framework includes plans
215 to greatly increase the current extent of conserved areas by 2030 (CBD, 2021). This plan has been
216 influenced by the Half-Earth movement, which stresses the intrinsic value of biodiversity (Wilson
217 2016). This plan is controversial partly because it discounts the value some ascribe to interactions
218 between people and biodiversity (ICCA Consortium 2021; e.g., Coetzee et al. 2022). This apparent
219 conflict around the weighting of different values in decision-making relates to broader concerns about
220 who sets the conservation agenda. For example, Tallis and Lubchenco (2014) and Kothari (2021)
221 argue that global decision-making is disproportionately influenced by the views and values of senior
222 Western conservationists. Recognizing this and seeking a broader understanding of the views held
223 across the conservation movement, Sandbrook et al. (2019) surveyed more than nine thousand
224 professionals from 149 countries. They found large geographic variability, such as respondents from
225 Africa, Asia, and South and Central America being more likely to endorse people-centered
226 conservation than those from Europe, North America, and Oceania.

227

228 **Emotions, wellbeing, and psychology**

229 We found several examples exploring the role of emotions, psychology, and wellbeing among
230 conservationists. A survey of over 2,300 conservationists found that many did not expect pressures on
231 biodiversity to lessen or its overall status to improve over the next ten years (Pienkowski et al. 2022b).
232 In this context, many conservationists, who are often passionate about the state of nature (Sandbrook
233 2019), may feel grief at witnessing biodiversity loss and the prospect of this loss continuing in the
234 future (Fischer & Riechers 2021). Perhaps in response, movements like Conservation Optimism,
235 Earth Optimism, and Vikalp Sangam have emerged, seeking to illustrate examples of conservation

236 success to motivate people to act for biodiversity (but see *Thinking about success, failure, and wrong-*
237 *doing*).

238 We also found several studies examining conservation professionals' working conditions and
239 wellbeing. Multiple studies examine workplace challenges such as rangers' poor safety conditions,
240 isolation from family, inadequate compensation, and precarious employment (as reviewed by
241 Anagnostou et al. (2022)). In one of the largest of such studies, Singh et al. (2020) surveyed over
242 1,740 rangers across 40 countries in Asia, Africa, and Latin America. Among these, 79.9% said they
243 had faced a life-threatening situation during their careers, 68.1% were not provided with adequate
244 equipment to ensure their safety and do their jobs, and 26.5% saw their families for less than five days
245 a month. Recognizing the challenges rangers face, participants at the 2019 World Ranger Congress
246 endorsed the Chitwan Declaration (IRF, 2019). This declaration calls for improved health and safety
247 conditions, adequate life insurance, and work-life balance among rangers. However, challenging
248 working conditions in the conservation sector are not unique to rangers. For instance, in one study
249 among 2,311 conservationists (primarily in desk-based roles with university-level education), 27.8%
250 reported moderate or severe psychological distress (Pienkowski et al. 2022a). The study found that
251 workplace challenges, such as heavy workloads, job demands, and organizational instability, were
252 associated with higher distress. Other examples of conservationists reflecting on these challenges can
253 be found elsewhere. For instance, the *Lonely Conservationists* blog shares stories recounting the
254 challenges faced by conservationists, particularly at early career stages (Lonely Conservationists
255 2020).

256 We also found examples of practitioners evaluating other psychological aspects beyond
257 conservationists' wellbeing. For instance, experts at the United Kingdom government's Joint Nature
258 Conservation Committee spoke to us about their experiences building teams with diverse cognitive
259 profiles (sometimes termed "neurodiversity," C. Maggs, B. Trippier, & M. Smith, personal
260 communication, 26/01/2021). They were motivated to do so both because of the ethical imperative to
261 provide equal opportunities and the value of having team members who might approach problems
262 from different perspectives.

263

264 **Social identities and relations**

265 One common theme in our discussions was the examination of identities and social positions,
266 including around class, race, ethnicity, gender, sexuality, age, geographic location, and
267 “insider/outsider” status (Merriam et al. 2001). Examples included self-reflection of how conservation
268 actions can propagate or diminish inequalities. For instance, one expert we spoke with was involved
269 in participatory research with Nepali conservationists, where participants reflected upon the risks of
270 perpetuating and the opportunities to challenge inequalities around gender, caste, class, and religion
271 (S. Staddon, personal communication, 01/12/2020). Another expert attended a study circle held by a
272 grassroots conservation organization in India (N. P. Broome, personal communication, 02/03/2021).
273 This session evolved into a critical discussion of patriarchy and caste hierarchies and the
274 organization’s role in addressing these dynamics.

275 Conservationists also often described their experiences of feeling discriminated against by peers and
276 those outside the conservation sector. Several recently published blogs by black African
277 conservationists describe experiences of racism and exclusion by non-black colleagues. For instance,
278 Duff (2020) collected stories describing discrimination faced by more than 20 African female
279 conservation leaders. These included cases where African professionals received lower wages and
280 fewer career development opportunities than equally or less qualified white counterparts. Similarly,
281 [redacted] described how she and other white co-workers were invited to social events organized by
282 the director of an organization, but her black colleagues were not. An expert from South Asia also
283 described how caste discrimination constrained their data collection. ‘Lower’ caste team members
284 could not access food and accommodation in certain ‘upper’ caste villages, so the team avoided
285 surveying such areas (M. Ramesh, personal communication, 01/12/2020).

286 Several examples focused on the status of professionals as “insiders” and “outsiders” in relation to the
287 groups they engaged with through their work. For example, one of us co-authors worked in a
288 conservation organization in Central America, staffed predominately by residents. This organization

289 often employed local ex-hunters familiar with the landscape, wildlife, and hunters' behavior.
290 However, several of these rangers told the co-author how this sometimes put them in difficult
291 positions, facing conflicting responsibilities and loyalties between their employers and friends,
292 families, and neighbors (similar tensions have been reported elsewhere (e.g., Sudha 2002; Moreto
293 2016; Dutta 2020)).

294 More broadly, a vast body of research explores conservation's links with state-making, military
295 conquest, and colonialism. For instance, Kashwan et al. (2021) discuss how exclusionary protected
296 areas were promoted across Asia, Africa, and elsewhere during European colonial rule. Peluso (1993)
297 explores how conservation can help state elites broaden their power through military violence against
298 resistant populations. These themes were often in the background of many of the examples provided
299 in this essay. For example, these themes played a role in the experiences of conservationists in post-
300 colonial countries (e.g., Duff 2020; M. Ramesh, personal communication, 01/12/2020) and the
301 support and opposition for protected areas reported by Sandbrook et al. (2019). As a result, many
302 questions around values, identities, wellbeing, culture, training, and responses to success and failure
303 relate to the history and political economy in which conservation is situated.

304

305 **Cultural traditions and religions**

306 Global biodiversity conservation involves many cross-cultural encounters, and much has been written
307 – including by cultural anthropologists – about how these shape conservation practices (Kiik 2018).
308 Conservation is done in places spanning humankind's cultural, philosophical, and spiritual diversity,
309 and several of us co-authors have reflected on how our spiritual traditions and religious beliefs have
310 shaped our approach to conservation. One high-profile example of practitioners assessing how their
311 cultural background influences how they do conservation comes from the Intergovernmental Platform
312 on Biodiversity and Ecosystem Services, an advisory body of conservationists worldwide. Since its
313 establishment, it has recognized the need to embrace a cross-cultural understanding of the non-human

314 world (Díaz et al. 2015). However, Suarez (2017) illustrates how participants in the process struggled
315 to reconcile concepts of biodiversity, “nature,” and “Mother Earth” represented in different cultures.

316

317 **Training**

318 We found growing literature on how conservationists’ training shapes their work. For instance,
319 Gardner (2021) examined the descriptions of undergraduate conservation degrees in the United
320 Kingdom, finding that many did not offer dedicated social science training and were largely
321 biocentric. He concluded that many graduates might be ill-prepared to work in interdisciplinary
322 conservation practice. Similarly, another recent study identified five areas critical to contemporary
323 conservation practice: collaboration, leadership, policy, practice, and interdisciplinarity (Elliott et al.
324 2018). The authors then evaluated 650 postgraduate-level capacity development initiatives in 54
325 countries against these five areas, finding gaps around leadership and policy-related training. They
326 suggested that practitioners are often called upon to do work for which they have not been adequately
327 trained.

328 We also found examples of conservationists assessing how their training influenced their beliefs about
329 what conservation approaches should be taken. For instance, a global survey of conservationists found
330 that those trained in social and interdisciplinary sciences were more likely to endorse people-centered
331 conservation approaches than those trained in the natural sciences (Sandbrook et al. 2019). Equally,
332 Cleary (2018) highlights how the definition of ‘conservationist’ has grown to include lawyers,
333 business managers, social scientists, and others not trained in the natural sciences. He suggests this
334 shift has side-lined activities directly focused on supporting biodiversity, to the frustration of some
335 trained in ecology and related disciplines.

336

337 **Success, failure, and wrong-doing**

338 Conservation outcomes are rarely clearly a success or a failure, and one key theme that emerged was
339 the way conservationists reflect on these terms and their meanings. Individuals can face incentives to
340 deny poor outcomes and organizational norms that discourage reflection (Wahlén 2014; Catalano et
341 al. 2019). For example, a culture focused on sharing “good news” stories within WWF may have
342 discouraged the upward reporting of alleged human rights abuses in conserved areas (WWF 2020).
343 Similarly, many of us authors have experienced conservation organizations “selling success” to help
344 secure future funding (Büscher 2014).

345 Acknowledging and reflecting on both failure and success can offer valuable learning opportunities
346 (Catalano et al. 2018). Recognizing this, Fauna & Flora International drew on the concept of after-
347 action reviews (initially developed by the US army) in its projects in Kenya and elsewhere (C.
348 Hodgkinson & A. Komen, personal communication, 01/12/2020). This process involves asking what
349 happened, why, what seems to be working but also what could be done differently. This structured de-
350 briefing process may reveal alternative ways individuals and groups might approach a given
351 conservation situation. In general, examining attitudes and practices that enable or discourage frank
352 discussion of success and failure could help move the conservation movement toward a culture of
353 transparency, accountability, and learning (Catalano et al. 2018).

354

355 **Going forward: Limitations, dangers, and costs of reflexivity**

356 While our research has provided examples of the benefits of reflexivity, we also identified several
357 associated challenges (Table 2). These include the potential trade-offs between taking action and
358 investing resources and time in reflexivity; the frustrations of self-reflection in situations resistant to
359 change; and acknowledging that putting reflexive principles into practice is often easier said than
360 done. Equally, reflexivity alone will not solve many pressing conservation problems and can be an
361 uncomfortable process (though this is not necessarily a bad thing) that might uncover or foster
362 differences in groups that are hard to reconcile. These challenges might be most pronounced in group
363 or collective settings, such as institutions. As such, reflexivity alone is not a panacea for solving

364 conservation problems but could be integrated into individual and organizational practices in ways
365 discussed next.

366 TABLE 2

367

368 **Going forward: Reflexivity in adaptive and transformative conservation**

369 Our methods do not allow us to say if conservation is now having a “reflexive turn,” akin to that
370 which has occurred in social anthropology and related disciplines. However, multiple recent articles
371 call for greater reflexivity in conservation science (e.g., Bennett et al. 2017; Moon et al. 2019; Brittain
372 et al. 2020; Montana et al. 2020; Ramesh 2020; Beck et al. 2021; Boyce et al. 2021; Staddon 2021;
373 Staddon et al. 2021). Moreover, many of our peer-reviewed and grey literature examples were
374 published in the last few years. Consequently, we believe there is growing interest in the role of
375 reflexivity in conservation practice, at least among researchers. This attention might have emerged
376 from the increasing use of social science approaches and ideas (Bennett et al. 2017; Moon et al.
377 2019). It might also have arisen from increasing recognition that current conservation strategies have
378 failed to reverse the loss of nature, prompting some to question underlying values, beliefs, and
379 perspectives held in the sector (e.g., Wyborn et al. 2020). Regardless of the cause, we believe that
380 conservationists who take a metaphorical “look in the mirror” might gain insights into how, why, and
381 for whom conservation is done and if there are more suitable alternative approaches.

382 Reflexivity might be more likely to lead to tangible action when intentionally built into practices and
383 processes. For instance, some researchers encourage conservation scientists to present positionality
384 statements, describing how their identity and worldview influence their research (Moon et al. 2019;
385 Ramesh 2020). Practitioners might find it instructive to generate similar statements when advocating
386 for and implementing conservation actions. Or job seekers might examine potential employers’
387 mission, values, and activities when making career choices. Equally, reflexive processes could be

388 usefully integrated within adaptive management and monitoring, evaluation, and learning cycles in
389 organizational settings, as we illustrate through one bounded example (Table 3).

390 TABLE 3

391

392 Reflexive processes may have a broader role in conservation beyond just the adaptive management of
393 projects and programs. Discussing reflexivity in conservation, Borie et al. (2020) distinguish between
394 instrumental (i.e., to better achieve objectives) and transformative (i.e., questioning the objective
395 itself) learning. Expanding on this distinction, instrumental or adaptive reflexivity might help adjust a
396 process or project to better achieve an established goal. In contrast, transformative reflexivity might
397 involve questioning and revising the goal or discarding it entirely. We explore where there might have
398 been opportunities for transformative reflexivity in our hypothetical vignette in Table 3, which
399 focuses on day-to-day decision-making. Yet, transformative reflexivity might play a more
400 fundamental role in re-imagining mainstream conservation paradigms. For example, the Biodiversity
401 Revisited project asked if inherent problems in how biodiversity is conceptualized hinder its
402 conservation (J. Montana, personal communication, 13/10/2020).

403 Our group did not agree on whether there was a clear distinction between adaptive and transformative
404 reflexivity or if a process is only truly reflexive if it is transformative. Furthermore, we also disagreed
405 on whether to advocate for reflexivity towards specific outcomes. For example, some of us believed
406 our essay should call for reflexivity towards social justice (for example, as done by Staddon et al.
407 (2022)), while others felt this was too prescriptive. Our friendly disagreements emphasize that there is
408 no single way of “doing reflexivity,” nor that it will lead everyone to the same conclusions.

409 This essay shares a collection of examples and perspectives aimed to encourage individuals and
410 groups to explore ways reflexivity can help shape how they do conservation. However, our approach
411 has limitations. Those not in networks and on social media platforms where the workshop invitation
412 was shared were not given the opportunity to collaborate. The selection process was based on

413 [redacted]'s subjective evaluations of who offered relevant experience and diversity. Many of us had
414 connections to the United Kingdom, where six of our invited experts also worked. As a result, most of
415 our networks, case studies, and information come from the United Kingdom, its former colonies, the
416 English-speaking world, and English-language literature. Many of our invited speakers worked in
417 desk-based roles, with only two from non-profit organizations. So, overall, our examples and
418 discussion cannot represent the diversity of paradigms, experiences, and ways of thinking and
419 working in conservation worldwide. Moreover, the number of invited experts was constrained by the
420 time available within the seven workshops. Inviting more experts may have yielded a wider range of
421 examples.

422 Nevertheless, our examples suggested that reflexivity might be common within conservation practice,
423 particularly in informal settings. We found comparatively fewer cases where reflexive practices were
424 explicitly integrated into institutional or group processes (although we may have missed relevant
425 examples with our approach). By examining examples from individuals, organizations, and across the
426 conservation movement more broadly, we identified a diverse range of issues that conservation
427 practitioners self-reflect on, including training and cultural backgrounds, values, emotions and
428 wellbeing, social identities, and success and failure. While reflexivity in conservation can offer
429 insights and benefits in some cases, it is not without challenges, particularly in group settings (e.g., in
430 organizations). Nevertheless, proactive adoption of reflexive processes could enhance both adaptive
431 and transformative conservation practices. Ultimately, reflexivity may help conservationists imagine
432 and, with a deeper understanding of everyone's differences, work together towards a better world for
433 wildlife, people, and the conservation sector.

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588 **Tables**

589 Table 1. Themes that conservationists might self-reflect on and associated potential benefits, accompanied by sample questions to prompt self-reflection among individuals
590 and groups.

Theme	Individual-level	Group-level (teams, organizations, movements)	Potential benefits
Values and views	<ul style="list-style-type: none"> ● How do my values inform my conservation practices? ● Do my activities align or conflict with my values? ● How do my values align or conflict with others? ● How should I engage with those with different values? 	<ul style="list-style-type: none"> ● Which values are represented in our group, with what implications? ● How do our values align or conflict; can they be reconciled or respected? ● How do the values held between different groups align and conflict? 	<ul style="list-style-type: none"> ● Understanding others’ values may help find cooperative strategies that benefit both people and nature. ● Individuals might ask if their activities align with their values, helping them find fulfilling and motivating roles in conservation. ● Acknowledging the ethical stances of others might lead to more fruitful debates around controversial topics among conservationists. ● Such self-reflection can also reveal whose voices are underrepresented and thus perhaps need to be promoted in conservation practice.
Emotions, wellbeing, and psychology	<ul style="list-style-type: none"> ● What are my emotional experiences and motivations? ● What strategies might support my wellbeing? ● What are the challenges and rewards that I face? ● Who can I work with to improve conditions? 	<ul style="list-style-type: none"> ● What are the emotional experiences of people in our group? ● How do these affect our efforts to meet conservation goals? ● Are institutions (e.g., employers) fulfilling legal and ethical duties? ● Who are at most at risk, why, and what can be done? 	<ul style="list-style-type: none"> ● Employers might promote the positives and manage the challenges of working in conservation, perhaps supporting conservationists’ mental health, satisfaction, and productivity (Singh et al. 2020; Pienkowski et al. 2022a). ● Organizations and others might think about how framings affect those in the sector, including the risks and benefits associated with optimistic and “gloom-and-doom” narratives (Swaisgood & Sheppard 2010). ● Addressing workplace stressors might help simultaneously tackle sources of organizational instability and inefficiency (Pienkowski et al. 2021).
Social identities and relations	<ul style="list-style-type: none"> ● How do my social position and identities affect my conservation work? ● What privileges do I enjoy? ● How can my practices address inequalities? ● What is my relationship with the history of conservation? 	<ul style="list-style-type: none"> ● Who is represented in our group? ● How do experiences vary by identity and social position? ● What are the aspirations and ideals for how people should be treated within and beyond our group? ● What steps can we and others take to improve equity and justice? 	<ul style="list-style-type: none"> ● Conservationists and conservation groups concerned about discrimination and inequality might assess how their activities can support efforts to tackle these issues. For example, Jones and Solomon (2019) outline issues (e.g., salary and advancement inequalities) that could be addressed and support (e.g., training opportunities) offered to tackle gender discrimination. ● Rudd et al. (2021) outline steps to help address racism in conservation science (e.g., educational curricula representing past and present relationships between people and conservation) and practice (e.g., fair dissemination of funds to organizations led by Indigenous representatives).

Cultural traditions and religions	<ul style="list-style-type: none"> ● How do my culture and religion affect how I relate to people and other life? ● How do these factors influence my practices? ● How do these aspects align and conflict with others? 	<ul style="list-style-type: none"> ● What cultural traditions shape how the conservation movement understands nature and humanity? ● Which worldviews are represented (or not) within our group? ● How does this representation influence our conservation practices and agenda? 	<ul style="list-style-type: none"> ● There have been calls for conservation approaches that simultaneously protect both cultural and biological diversity (e.g., Agnoletti & Rotherham 2015). Practitioners might assess how their worldviews align and diverge from those living in biodiverse landscapes. Doing so might help identify practices harmful to local cultures. ● Employers might assess how their staff’s cultural background influences the approaches and strategies they adopt. Hiring or engaging individuals from relevant cultural backgrounds might offer more socially just approaches supporting biological and cultural diversity.
Training	<ul style="list-style-type: none"> ● How has my training prepared me to work in different roles? ● How is my training influencing how I do conservation? ● How do I prioritize different sources of evidence? 	<ul style="list-style-type: none"> ● What competencies, skill sets, and knowledges are represented within our group? ● What gaps and shortages exist, and what competencies are needed? ● Which knowledges and sources of evidence are we prioritizing? ● What competencies should training institutions be offering? 	<ul style="list-style-type: none"> ● Individuals entering careers in conservation might find it useful to explore the competencies required in practitioner roles. ● Employers and training providers might work together to identify and address skills shortages. This could be forward-looking, preparing the conservation workforce to meet the challenge of reversing biodiversity loss. ● Employers might examine their recruitment practices. Appleton (2016) compiled a list of competencies useful for protected areas practitioners. Such registers could be extended to other conservation roles, helping employers choose suitable candidates or address gaps through training.
Success, failure, and wrong-doing	<ul style="list-style-type: none"> ● What was my role in influencing outcomes? ● What can I learn from these experiences? ● How can I create a culture of accountability and learning? 	<ul style="list-style-type: none"> ● How do we respond when things go right and wrong? ● How do we balance recognizing success, ensuring accountability, and learning from failure? ● How do we talk to others, such as funders, about problems? 	<ul style="list-style-type: none"> ● Learning from failures in conservation can help avoid them and do better in the future (Catalano et al. 2018; Catalano et al. 2019). ● Fostering accountability can support procedural, retributive, restorative, and other forms of justice. ● Strengthening performance reporting may build funders’ confidence and thus willingness to invest in conservation (M. Smith, personal communication, 07/07/2022).

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595 Table 2. Potential limitations, dangers, and costs associated with reflexivity.

Limitations and costs	Description	Mitigation
Trade-offs between thinking and doing, when time and resources are limited	Self-reflection takes time, but many conservationists report being overworked (Campos-Arceiz et al. 2013; Pienkowski et al. 2021). Therefore, practitioners may face trade-offs between self-assessing and doing. Practitioners may be particularly reluctant to engage in reflexive processes mandated by others (e.g., bosses and funders) or if it is an onerous reporting requirement.	Reflexivity does not have to be time-consuming. For instance, after-action reviews can be a quick way to de-brief and learn from experience.
Reflexivity, where change is unlikely, might be exhausting and frustrating.	Reflexivity in situations where change is unlikely may be exhausting – of time, resources, and emotional commitment – and frustrating. These costs may be particularly likely when individuals have limited influence over the practices of wider groups. For instance, employees might raise issues that employers cannot address, harming morale and employer–employee relations.	Practitioners need to consider how likely it is they can change practices. Organizations encouraging reflexivity should be willing to act on findings.
Reflexivity is easy to discuss in theory but can be hard to put into practice.	Reflexivity is easy in theory, but it can be challenging to translate these abstract concepts into real practices that lead to positive change. For instance, an organization might examine the values held by its staff. However, it may be unclear how to turn these insights into actions.	Those engaging in reflexive processes might plan for how to integrate them into practices.
Reflexivity alone will not solve many conservation challenges.	Alone, more self-reflection will not solve many pressing conservation issues. Conservation is underfunded, poorly resourced, and often contends with powerful actors (Sandbrook 2017; Barbier et al. 2018), presenting barriers that reflexivity alone cannot address. Also, attributing links between reflexivity and positive outcomes can be challenging. So, it may be hard to identify instances where reflexivity indirectly helps resolve conservation problems.	Conservationists should be realistic about linking reflexivity to precise outcomes and flexible about the types of evidence (e.g., personal narrative) and time horizons considered.
Reflexivity can be uncomfortable and highlight issues that some might want to hide – but is this a bad thing?	Reflexivity may be uncomfortable for individuals, organizations, and the conservation sector. For instance, individuals may be reluctant to examine their role in practices that harm others. Equally, organizations might be cautious in acknowledging failures if disclosure jeopardizes reputations and future funding or invites criticism (Wahlén 2014). While there are perhaps no easy solutions to this, the conservation sector needs to find ways to balance accountability against learning from failure (Catalano et al. 2018).	Some of us co-authors contend that feeling uncomfortable is expected in some contexts, like when trying to “decolonize” conservation (Trisos et al. 2021).
Collective reflexivity may uncover differences that are hard to reconcile – but, again, is this a bad thing?	When groups engage in collective self-reflection, individuals may hold differing perspectives and come to different conclusions (J. Montana, personal communication, 13/10/2020). However, diverging opinions can be valuable. For instance, disagreement can help interrogate assumptions and reveal different approaches to problems.	Those engaging in collective reflexivity should avoid artificial consensus (Matulis & Moyer 2017).

597 Table 3. Illustrating where reflexivity could be integrated into adaptive and transformative conservation through a hypothetical vignette.

Adaptive management steps*	Reflexivity in adaptive management vignette	Opportunities for transformative reflexivity
<p>Assess: This step “involves determining the purpose of the planning, identifying who will initially be part of your project team, and articulating your project’s geographic and/or thematic scope, your vision of what you hope to achieve, and the conservation targets on which you will focus.”</p>	<p>Yayasan Hutan Sumatera is an (imaginary) Indonesian conservation non-governmental organization (NGO) that collaborated with local residents. Local leaders identified several representatives to work with key staff at the NGO. This co-management team recognized that there were no participating subsistence farmers, so they invited members of this group to join. This team then shared their vision for the project and how these aligned and conflicted. The team found several areas of consensus, which was the basis of the next step.</p>	<p>Yayasan Hutan Sumatera might ask on what basis they have the right to intervene in the lives of others and if they should even be the ones leading local conservation efforts. Are they prioritizing the needs of local residents or nature conservation? Why?</p>
<p>Plan: This step “involves defining and developing your project’s goals, strategies, and objectives, and identifying your team’s assumptions about how you believe your strategies will achieve your project’s goals.</p>	<p>The core group held a series of meetings on the project’s goals, outputs, and actions, focusing on agroforestry. They shared their experience, identifying two members knowledgeable about suitable tree species. Attending subsistence farmers were encouraged to share their opinions on the project. They pointed out how the project would harm poorer households and offered solutions.</p>	<p>The NGO might ask how power dynamics – shaped by who has access to funding, political influence, land claims, knowledge, and other factors – influenced the choice of project goals.</p>
<p>Implement: This step “involves developing and implementing specific work plans while ensuring sufficient resources, capacity, and partners.”</p>	<p>One of the staff at the NGO struggled with burnout, affecting how he interacted with colleagues and community members, his performance, and the project’s progress. His supervisor spoke with him to understand why he was struggling, what was important to him in terms of work-life balance, and how he might work differently from others in the team. They also discussed the broader work culture of the organization and how it could be altered to support all staff better.</p>	<p>The NGO might explore why employees are under pressure and if it is a consequence of dependence on short-term grants. They might ask if the project should have been initiated if there was no long-term funding.</p>
<p>Analyze and adapt: Analyze the “project’s results, core assumptions, key uncertainties, and relevant operational and financial data, and then adapt your work plan as necessary.”</p>	<p>The NGO staff had designed a logical framework to monitor and evaluate the project, which focused on outcomes for participants and the forest. But one resident highlighted that they needed to evaluate the impacts on the community as a whole as the project was displacing subsistence farmers. So, the co-management team updated the monitoring process, changed where the project would be implemented, and sought to compensate those who lost land.</p>	<p>The NGO might critically examine the process used to develop the logical framework. After learning that the project displaced subsistence farmers, they might re-evaluate their overall approach to working with residents.</p>
<p>Share: This step “involves sharing lessons and formal products with key internal and external audiences.”</p>	<p>By the end, some subsistence farmers remained angry about how the project was implemented. The NGO decided to hold a community meeting to discuss what could have been done differently. The NGO decided not to report these issues to the funder for fear of losing follow-up support.</p>	<p>The NGO might ask how concealing these issues affected residents and the organizational culture and created a risk of being blacklisted by funders.</p>

598 * Following Conservation Measures Partnership (2021).