Connecticut's Natural Diversity Data Base Program

Improving the Environmental Review Process

CONNECTICUT ENERGY & ENVIRONMENT

DJ CASE +associates

EXECUTIVE SUMMARY

In 2025, the Connecticut Department of Energy and Environmental Protection (CT DEEP) engaged social scientists at DJ Case & Associates (DJ Case) to conduct a multi-faceted inquiry into Connecticut's Natural Diversity Data Base (NDDB) program and parallel programs in other states, similarly responsible for environmental reviews related to rare, threatened, and endangered species. The inquiry was designed to yield recommendations for improving NDDB communications and increasing the efficiency, transparency, and predictability of reviews.

Analyses of interviews with and a survey of members of Connecticut's regulated community, interviews with NDDB staff, and information from nine other states yielded several overarching findings.

- **Staff-user agreement:** Despite points of tension between NDDB staff and the regulated community, the two generally agree on (1) the importance of listed species conservation, (2) their overall positive working relationship and the value of direct engagement, and (3) discontent with elements of the program as it currently functions.

- **High user satisfaction with program staff:** Overall, the regulated community thinks the program is effective, and is especially satisfied with (and confident in) program staff.

- **Moderate user satisfaction with the review process:** The regulated community is satisfied with the review process overall, but only moderately satisfied with its efficiency, transparency, and predictability.

- **User desire for specific changes:** In general, the regulated community would like definite timeframes for initial responses, standardized processes for recurrent activities, fewer required field surveys, a better system for finding qualified experts, and more engagement with program staff.

- **Significance of map data and use:** Across states, the quality and use of mapping data and systems are key factors in the effectiveness of review programs and the relationships between program staff and the regulated community.

- **Importance of early consultation:** Across states, the opportunity for early collaborative engagement between applicants and review staff is crucial to providing clarity, reducing uncertainty, and enabling effective planning and decision-making for complex projects.

- **Value of streamlining for recurrent activities:** Across states, a variety of mechanisms play key roles in streamlining review of the significant volume of work conducted each year by state transportation departments and utility companies.

Though users are generally satisfied with the NDDB program, there is room for improvement in specific areas. To address these areas, DJ Case offers ten recommendations for CT DEEP's consideration, listed here in rough priority order. The recommendations are not listed in proposed order of implementation. Several would likely entail sustained multi-year efforts.

Toward the top of the list are suggestions that — reflecting ways other states have found enhanced success, as well as concerns and priorities shared by NDDB users and staff — seem most likely to help CT DEEP maintain and improve conservation efficacy and enhance the regulated community's experience of and relationship with the program. In several cases, successful implementation of one recommendation would hinge on implementation of another.

1. **Invest in mapping:** Conducting comprehensive mapping and increasing alignment among maps and tools could shorten review times and reduce the need for applicant field surveys (efficiency), clarify decision-making (transparency), and make it easier to anticipate outcomes (predictability). Such an investment would likely require additional staff.

2. **Prioritize early consultation:** Establishing a clearly defined yet informal pre-application consultation process for large, complex projects could provide clarity (transparency), increase certainty (predictability), and shorten formal review times (efficiency). Consistently providing early consultation would be more feasible with comprehensive mapping data and would likely require additional staff.

3. **Streamline additional reviews for recurrent activities:** Instituting measures to further simplify review of recurrent work by transportation departments and utility companies could make reviews quicker (efficiency) and outcomes easier to anticipate (predictability) with minimal adverse conservation impacts. Such measures would likely require additional staff time to set up at first but would free up staff time once in place.

4. **Improve the applicant survey system:** Reducing the frequency with which applicants are required to conduct surveys, helping applicants identify qualified experts, and establishing ways for consultants to become eligible to survey for specific taxa could clarify criteria (transparency), define paths forward (predictability), and save time and effort in the long run (efficiency).

5. **Increase staff capacity:** Expanding staff capacity overall and adding specific expertise could enable implementation of multiple improvements identified by staff and users.

6. **Make ezFile easy:** Overhauling the ezFile system or adding staff to provide technical support could improve new users' experience and enable reallocation of staff capacity.

7. **Set initial response timelines:** Setting a timeline for initial responses could provide the regulated community with a valued degree of predictability, even if it does not mean that overall review processes will be completed within a set timeframe.

8. **Adjust validity durations:** Lengthening the periods for which preliminary and final determinations are valid could make review and permitting processes more feasible for applicants.

9. **Enhance communication and information resources:** Improving the website, developing guidance documents, and reorganizing response letters could provide greater clarity, especially for newer users.

10. **Explore mitigation banking:** Establishing a mitigation banking system could provide staff and applicants with additional options for particular species and project types.

This report discusses these findings and recommendations and the information and insights on which they are based.

CT DEEP and DJ Case are grateful to everyone who assisted with and participated in this inquiry, including CT DEEP staff members, members of Connecticut's regulated community, and staff members from nine other state fish and wildlife agencies across the country (AZ, GA, MA, NJ, NY, OH, OR, PA, VA).

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INTRODUCTORY NOTES

Inquiry and report

In connection with CT DEEP's [20BY26 Initiative](#), this inquiry entailed interviewing NDDB staff and members of the regulated community, surveying members of the regulated community, and recommending ways to improve NDDB's communication and outreach materials, including webpages and response letters.

Per Governor's Bill HB 6868 (now [Public Act No. 25-84](#)), it also entailed conducting a high-level, comparative assessment of parallel programs responsible for environmental reviews in other states and developing recommendations to increase the efficiency, transparency, and predictability of NDDB reviews.

As outlined in the Table of Contents, the inquiry's elements are presented in roughly the order in which they were conducted. Interviews in Connecticut were conducted first. The survey was designed and fielded concurrent with cross-state research. Initial analyses were conducted as data were gathered, then revisited as a whole once all data were available.

In this report, "review," "environmental review," and "listed-species review" are used to refer to state agencies' reviews of projects and actions. These reviews focus on identifying and minimizing potential impacts to species listed as threatened, endangered, or of special concern under state and/or federal guidelines.

"Members of the regulated community," "project proponents," "applicants," "requestors," and "users" are used somewhat interchangeably to refer to anyone (and any entity) who initiates, manages, or consults on behalf of projects or actions reviewed for potential impacts to listed species.

NDDB process

Connecticut's NDDB program is responsible for reviews of projects and actions — including those funded, permitted, or authorized by the state — that may impact species listed as threatened, endangered, or of special concern. The review process is intended to identify and minimize such impacts.

Maps

Project proponents and other members of the public can use NDDB's screening maps (aka "blob" maps) to identify locations where ground disturbance or other actions may impact listed species. If the screening maps indicate no overlap between a proposed project site and the maps' shaded areas, then further NDDB review is not required under state law, though additional review may be required as part of Connecticut Environmental Policy Act, federal, municipal, or other approval and review processes.

To learn more about what is in a "blob" on the screening map, anyone can use the online ezFile portal to conduct a Site Assessment by drawing a polygon on a map. Referencing more detailed data layers and a different set of parameters, the Site Assessment tool will return a report that lists potentially present species and provides related information and resources.

For more information on NDDB's screening maps and Site Assessment tool, see *"Map data and systems"* later in this report.

Review requests

Users can submit a request for NDDB review by mail, by email, or via the ezFile portal. Requests must include information on (1) request type, (2) person/entity making the request, (3) site location and size, (4) project type, schedule, and activities, and (5) maps, plans, imagery, and any available biological reports.

Automated reviews

Once a request is submitted, the system conducts an initial automated review.

If a project meets a specific set of criteria, it is eligible for automated determination and the system will show a preview of comments and conservation measures. If the applicant indicates that those measures are feasible, the system will generate an automated letter of determination; if not, the request will be sent for NDDB staff review. Intended to streamline the review process for certain kinds of projects, automated determinations can be generated for 118 animal species. They are not generated for any plant species. About 40–45 percent of NDDB review requests result in automated determinations.

For more information, see *"Automated determination."*

Staff reviews

The remaining 55–60 percent of review requests are reviewed by NDDB staff biologists and/or botanists. In conducting reviews, staff refer to the data layers used by the Site Assessment tool and to additional data resources, such as the Connecticut Critical Habitats Map and datasets of listed plant species and natural communities documented in each town.

When staff reviewers deem that additional information is needed before a final determination can be made, applicants are often required to hire a qualified expert to complete a habitat suitability or species presence/absence survey. Such surveys can result in significant delays and costs for applicants. Surveys are most often required for plant species, as there are significant gaps in the program's current data and mapping related to plants. For more information, see *"Surveys and qualified experts."*

In 2024 and 2025 combined, 77 percent of biologist reviews were completed within 35 days. A small subset took considerably longer.

INTERVIEWS

Between late June and early August 2025, DJ Case conducted interviews with all seven members of the NDDB program staff, as well as representatives of eight entities that frequently interact with the NDDB program (e.g., requestors of environmental reviews, consultants to requestors, qualified experts who conduct surveys for requestors); in two cases, multiple staff members from an external organization participated in the interview.

Prior to the interviews, CT DEEP and DJ Case co-developed topic guides. Key questions focused on the purpose of the NDDB program and how effectively that purpose is achieved, what works well and where challenges arise, applicants' experiences with the NDDB review process, and potential improvements to the program and process.

At the start of interviews, the DJ Case researcher told participants that their identities would be kept confidential and requested permission to record the interview. Recordings were used to generate automated transcripts. The researcher also took notes during each interview. After interviews were complete, DJ Case conducted qualitative analyses of transcripts and notes, identifying both recurrent themes and unique perspectives.

Summarized below are noteworthy themes that emerged from these interviews; not all interviewees made statements reflective of all themes. Neither staff nor the regulated community is monolithic. Within each group, individuals expressed differing opinions.

Interview highlights

Interview findings suggest significant perspective alignment between NDDB staff and the regulated community. Though there have been conflicts between the two, they generally agree that:

- The conservation of listed species is important.

- Their working relationship with one another is positive.

- Direct engagement facilitates communication, clarity, and collaboration.

They also share a level of discontent with the current state of the NDDB program and review process, with somewhat different emphases. Generally, they agree that:

- The way the program currently works creates difficulties for everyone.

- Gaps in data and mapping often lead the program to require site surveys.

- Site surveys cost applicants significant time and money.

- The program lacks the staff capacity to close key data and mapping gaps, take a more strategic approach to species conservation, or make substantial changes to the program.

- Unpredictable timelines — for initial responses and overall review processes — are a significant pain point for the regulated community.

- Elements of the process, including differences between user-accessible screening maps and the data used by staff in conducting reviews, are unnecessarily unpredictable.

- It would help to streamline specific kinds of reviews.

- The ezFile system is outdated and could be substantially improved.

Staff members and members of the regulated community alike think they have valuable insights into how to improve the program, which they hope will serve as a starting point for discussion of potential improvements.

Interview details

Mission alignment

In interviews, staff expressed strong commitment to and belief in NDDB's mission to protect Connecticut's native biological diversity, especially rare, threatened, and endangered species.

External interviewees who frequently interact with the program likewise expressed a desire to help conserve listed species and suggested that most members of the regulated community want to do the same.

> **"**
> "We have a really good working relationship with the staff in NDDB."
> —*Review requestor*

Staff-user engagement

Internal and external interviewees alike generally described staff-user rapport as positive. The overwhelming majority of users described good working relationships with staff, depicting NDDB staff members as professional, approachable, helpful, and willing to listen and collaborate.

In several cases, interviewees highlighted the value of direct engagement between staff and members of the regulated community. Some, for example, described having regular meetings, which facilitated open communication, clarity, and transparency. Others noted that individual review processes go much better when the various parties (e.g., developers, engineers, taxonomic experts, NDDB staff) all talk together. These interviewees noted that building trusting and collaborative relationships is key and that most engineers and developers are open to making adjustments (e.g., by moving a planned road) once they understand the potential impacts to species.

For the most part, external interviewees said that direct outreach to NDDB

> **"**
> "A field meeting would have been tremendous for this project."
> —*External consultant*

> **"**
> "It works very well when [all players] come together and talk about… what needs to be done to get this project moving forward but also satisfy the needs of environmental protection regulations. That is when it works the best and those projects are few and far between."
> —*External consultant*

staff (e.g., calls, emails) yields timely, clear responses. Some, however, indicated that inquiries may not be answered for extended periods and said they want more consistent response times.

Discontent

Both staff and external parties expressed discontent with aspects of how the NDDB program and review process are currently structured. Related sentiments included low morale on the part of most staff and a degree of frustration on the part of most users. Staff described feeling as though the program is often the focus of undue criticism.

Despite a few instances of distrust and frustration with one another, staff and users alike generally acknowledged the difficulties faced by everyone in the current situation.

> "
> "Actual actions for the listed species should be prioritized over environmental review."
> — *NDDB staff*

Narrow focus and suboptimal efficacy

Both internal and external interviewees expressed mixed perspectives on the program's efficacy in achieving its purpose. Multiple staff members said that the program is not able to take a broad, effective approach to conservation. In their view, it should function as part of an integrated natural heritage program. Some NDDB staff noted that they would like to collaborate more actively and consistently with CT DEEP's Wildlife Diversity staff and see that as an opportunity to move toward a more integrated rare species conservation program.

Though staff generally said that the team does a good job with environmental reviews, they expressed frustration with the fact that the scope of their work has shrunk over time and now focuses almost exclusively on those reviews, which were a tiny fraction of the original program mission. They said the team is largely in a reactive mode and lacks the time necessary to proactively engage with other conservation entities and the regulated community. Such proactive engagement is, they said, key to reestablishing better relationships with that community as whole and to being more collaborative and less regulatory.

Staff members described wanting to take a more strategic and less piecemeal approach, focus on landscape-level efforts (e.g., identifying and conserving critical habitat areas), and establish species recovery plans and goals that prioritize key actions by species. Several staff members specifically mentioned that updated maps and mapping strategies would enable the program to not only focus on conservation priorities but also streamline review processes.

> "
> "I really wish we could lead with the carrot instead of the stick."
> — *NDDB staff*

Several external interviewees said they think the program is fairly effective in avoiding and mitigating harmful impacts. Others expressed uncertainty or doubt. Two echoed staff perspectives, stating that program efficacy and efficiency would increase significantly if an investment is made in the landscape-scale mapping of ecoregions and habitats.

Another said that program efficacy is constrained whenever science is overshadowed by personal biases and motivations, whether on the part of NDDB staff or developers. Two expressed concern that developers with political clout can circumvent meaningful review.

Data gaps and frequent surveys

Internal and external interviewees alike described significant gaps in NDDB's current data and mapping and a lack of the staff time needed to fill those gaps, especially for plant species. As a result, staff and users said, the program frequently requires applicants to hire third-party consultants to conduct site surveys. In some cases, those surveys become the program's primary source of data about where species occur.

This situation, interviewees said, results in major time delays, puts an undue burden on applicants, and prevents the program from taking a more strategic approach to conservation.

> ❝
> "I would say we're falling short on preserving and managing habitats."
> —*NDDB staff*

> ❝
> "When it's a $15 million project and a plant survey is what's holding up permit submittal, people aren't happy."
> —*Review requestor*

> ❝
> "We don't know if there are any snakes or turtles or plants here. So, guess what? You're going to have to survey that."
> —*NDDB staff*

Related to the frequent need for site surveys, most external interviewees expressed concerns about the current taxonomic expert system. Several said that NDDB's process for approving or rejecting experts is opaque, can delay surveys, and does not appear to be based on consistent, objective metrics. They said, for example, that:

- Qualified experts are sometimes rejected without a clear rationale.
- Experts experienced with a particular species in a neighboring and ecologically similar state are sometimes rejected because they have not worked in Connecticut.
- Significant delays can result if only a few experts are deemed qualified for specific work and those individuals are unavailable.

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>
> "The pain points are the delays having to do surveys before we can give them our determination."
>
> — *NDDB staff*

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>
> "We then spend [five months] arguing over which PhD herpetologist will be permitted to conduct additional studies."
>
> — *External consultant*

These interviewees indicated a desire for a clear definition of what a qualified expert is, with transparent metrics for requestors and experts alike. Several said they want a list of qualified taxonomists who have been previously approved and/or a list of steps people must take to be considered qualified for work on particular taxa. One expressed concern that some developers manage to get surveys done by unqualified biologists.

Capacity gaps

Staff said that the NDDB team lacks sufficient capacity to handle the current and increasing review load, let alone gather vital data or design and implement more proactive approaches. Likewise, virtually all external interviewees said they knew or suspected that the program is understaffed.

An increase in overall capacity would, staff indicated, enable them to complete reviews in a more timely manner. As importantly, a

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> "If we had the capacity to update mapping and do survey work, we could do environmental review much more effectively."
>
> — *NDDB staff*

substantial capacity increase would enable them to conduct research and establish approaches that would require far fewer applicant surveys.

Internal and external interviewees specifically noted that the program lacks and needs an aquatic botanist. Staff interviewees also noted that the program's data management and mapping capacity is significantly limited.

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> "We're mired in environmental review for everything, every single state permit."
> —*NDDB staff*

Timelines

Staff noted that most biologist reviews are completed in short order; in 2025, 79 percent were completed within 35 days. But they acknowledged that — due to delays both on their end and on the part of applicants — some review processes drag on for months if not years.

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> "The downside is unpredictability."
> —*Review requestor*

External interviewees overwhelmingly cited the unpredictability of timeframes for reviews and determinations as a significant challenge, describing the "black box" uncertainty of review processes that might be done in a few weeks or might take six months or more. Many described this as a major obstacle to planning and scheduling. Several expressed the desire for definite timeframes. One said that establishing a relatively lengthy maximum timeframe would be preferable to having no definite schedule. Another stated that, rather than imposing an artificially short timeframe, the state should manage developers' expectations.

Several users mentioned that the length and unpredictability of review and permitting processes

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> "They're probably the first agency we reach out to, because it's a black box for timeframe."
> —*External consultant*

> 66
> "It's really hard to plan, because sometimes we don't get feedback. It might take three to six months… We might miss a season and then we have to go back to our client when we're asked to do an additional study."
> —*External consultant*

is a systemic challenge in Connecticut and not isolated to NDDB. They noted that many projects require multiple determination and permitting processes that cannot be done concurrently and suggested that it would help to streamline state processes, perhaps by allowing them to overlap. Some noted that it would help to lengthen the period for which preliminary and final determinations are valid, make it easier to renew determinations, and better synchronize time periods (e.g., between NDDB determinations and pesticide permits).

Other process elements

External interviewees conveyed concerns about **unpredictability and inconsistencies** in the review process. Several said they often have no clear sense of what (or how many) surveys will be required, or of whether additional surveys (e.g., for a species not mentioned earlier or flagged by the Site Assessment tool) might be required later in the process. Several indicated that they could plan much more effectively if they had access to more data. A few mentioned that the outcomes of biologist reviews seem to be highly variable from one staff member to another. Some staff members expressed similar concerns.

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> "People will look and there's no blob there. So they're expecting to get an automated letter that says no species. And then all of a sudden it goes to [biologist] review."
>
> — *NDDB staff*

For recurrent standard procedures and maintenance, especially by utility companies and the state transportation department, several users said they would welcome **streamlined review processes**. In some cases, they noted, such activities needlessly go through biologist reviews. Some staff members said the same, noting that this as an area where efforts could be more collaborative.

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> "We may think that we've got a clean site… and then suddenly it comes back and ends up being something that we had no way of screening for. And they'll say that it needs a biologist review, which will kick you into multiple months of back and forth, if not years."
>
> — *External consultant*

Staff conveyed mixed opinions about NDDB's **screening maps and automated determination system**. Some expressed appreciation for their efficiency and the fact that many reviews do not require staff time. Others expressed concern that — often due to data gaps, especially for listed plants — the maps sometimes indicate zero listed-species "hits" or generate automated determinations for sites where a biologist review would be valuable. External interviewees also conveyed mixed opinions, with a strong majority expressing appreciation. One external interviewee said that automation had negatively impacted conservation and described erratic outcomes (e.g., unnecessary biologist reviews of highly fragmented sites, yet no biologist review of large unfragmented sites where listed species were likely to exist).

Letters and standard protection measures

The users interviewed, all of whom were quite familiar with the review process, indicated that they find NDDB **letters and determinations** clear and straightforward overall. Several mentioned that they occasionally find ambiguities and contradictions in biologist review letters (e.g., references to buffers of different distances or different types of surveys), which they attributed to content being copied and pasted from different sources. Some said that asking NDDB staff for clarification can lead to unanticipated delays. Staff noted that the letters sent to applicants could use adjustments but do not appear to present significant challenges.

Most external interviewees expressed satisfaction with the ease of understanding and implementing **standard protection measures**. One interviewee indicated that such measures may have no long-term positive effect if not based on a complete understanding of the project (e.g., temporary fencing may not benefit turtles in the long run if a permanent road is built in a location that will have significant adverse impacts).

Online resources and tools

The external interviewees who interact directly with the NDDB **website** said they are familiar with program processes and go directly to specific tools (e.g., ezFile). They do not often seek information on the website. A few noted that the website is outdated; several staff agreed.

Most users described NDDB's **online tools** (e.g., blob maps, polygon mapping, Site Assessment tool, ezFile, automated determinations) as helpful timesavers that increase efficiency, minimize email, and keep materials organized. As regular users, these interviewees said they find the ezFile system straightforward.

Most users noted that the **ezFile system** is clunky and outdated, sometimes quits unexpectedly, and needs a technological overhaul. One interviewee mentioned that it would help to be able to add files to an existing filing, rather than sending them by email. Another noted that developers know they can play with the shape of the project polygons

they draw, intentionally skirting the system to avoid a full review. One indicated finding ezFile immensely complicated and time consuming and not using it at all. Staff indicated that ezFile is often a source of frustration and confusion for newer applicants. The ezFile system was established and is managed by Connecticut's Department of Administrative Services Bureau of Information Technology Solutions (DAS/BITS), not by CT DEEP.

Concerns and solutions overlooked

Staff described their ongoing efforts to identify trouble spots in program design and implementation and to craft solutions. As they see it, CT DEEP management has not always had a full understanding of the program and has sometimes taken complaints from the regulated community at face value without consulting program staff. Team members indicated that they would like management to better understand the program and prioritize the identification and pursuit of improvements that have broad buy-in from staff.

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> "The people who have to do this work every day, both the NDDB staff and the users — what they think should be changed is the most important thing."
>
> —*Review requestor*

External interviewees similarly described having raised concerns about elements of the review process yet not seeing significant changes result.

One user observed that people periodically point fingers at the NDDB program, resulting in changes that assuage complaints without improving conservation outcomes or efficiency.

USER SURVEY

In collaboration with CT DEEP staff, the DJ Case research team designed a 27-question survey of NDDB users (e.g., applicants, consultants). No individual question required a response, allowing respondents to skip questions. DJ Case programmed the survey instrument in Qualtrics and tested it with assistance from CT DEEP staff. See *"Appendix A."*

In October 2025, with support from DJ Case, CT DEEP staff sent survey invitations to 624 unique email addresses associated with NDDB filings submitted July 2024 through August 2025. Nonrespondents received two email reminders from CT DEEP, followed by a postcard with a QR code and survey link. The survey was administered October 14 through November 17 to accommodate printing and mailing postcards to nonrespondents.

After data cleaning, including removal of responses that did not progress beyond Question 10, the final sample consisted of 241 responses (a 38.6% response rate). For all closed-ended survey questions, descriptive statistics were computed using IBM SPSS 29. See *"Appendix B."*

Survey highlights

Agency overview

The overwhelming majority of respondents agreed that CT DEEP should fulfill key conservation roles, including the conservation of rare and endangered species. Yet only half agreed that CT DEEP does a good job communicating conservation priorities for such species and ecological communities.

Program efficacy

Three in five users agreed that the NDDB program is effective at achieving its purpose, yet one in four were neutral and one in ten disagreed.

Nearly three in five respondents indicated thinking that landscape-scale mapping of listed species would help increase program efficacy. About half indicated that each of three other changes — (1) land acquisition to protect key habitats, (2) more NDDB staff capacity, and (3) more proactive engagement and collaboration by NDDB staff — would also increase program efficacy.

Review process

Two in three users indicated being satisfied with their overall experience of NDDB reviews. Respondents were slightly less satisfied with the efficiency, consistency, and transparency of the process, though most indicated being satisfied. Less than a third indicated that the NDDB review process impedes the achievement of key goals.

Nearly two in three respondents indicated that the filing process is easy. More than half indicated that it is easy to understand common forms of program correspondence.

In contrast, only one in four indicated that it is easy to find qualified experts to conduct surveys. Two-thirds think it would help to have a list of experts who have been approved for past reviews. Majorities also support having more clearly defined approval processes and criteria.

Users indicated experiencing moderate difficulty with developing mitigation plans and preparing incidental take reports, though many indicated that these were not applicable.

Four in five agreed that the review process would be made easier for applicants by establishing definite timeframes for initial responses and standardized processes for recurrent activities. Strong majorities also agreed that additional NDDB staff and more meetings with staff (virtual and onsite) would help.

When asked to rate NDDB determination letters, respondents indicated being satisfied

overall, though substantially more satisfied with automated determinations than with staff determinations. The greatest discrepancies were in ratings of the efficiency and predictability of the process.

Program staff

Respondents indicated high levels of satisfaction with their interactions with NDDB staff. More than three in four were satisfied with staff knowledge, helpfulness, and willingness to answer questions. More than two in three were satisfied with clarity of communication, staff willingness to work collaboratively, and willingness to listen to concerns. More than half were satisfied with the timeliness of staff responses.

Across most aspects of staff interactions, fewer than one in ten respondents indicated being dissatisfied. Regarding timeliness of responses, one in five indicated dissatisfaction.

Website

Respondents appeared moderately satisfied with the NDDB website, though they indicated that improvements could be made, especially making the site more user-friendly and making it easier to find answers to questions.

With assistance from DJ Case, CT DEEP has begun making improvements to the NDDB website.

Summary of highlights

Survey responses suggest that members of the regulated community strongly support the conservation aims of CT DEEP and the NDDB program. Yet they see room for increasing efficacy in communicating and achieving those ends.

Most users appear to be highly satisfied with their NDDB staff interactions and moderately satisfied with their overall experience of the review process. Yet their responses highlight specific areas of lower satisfaction and potential improvement:

- Time consumed by the review process
- Unpredictability of processes and timelines
- Challenges associated with finding qualified experts to conduct field surveys
- Staff availability/capacity (e.g., to respond more swiftly; to discuss projects/sites)
- Communication (e.g., of conservation priorities; via the NDDB website)

Broadly, these survey findings point in the same directions as interview findings. Both sets of findings, alongside the results of a cross-state inquiry, inform this report's recommendations.

Survey respondents

One in three respondents indicated that they participate in the NDDB process as engineering consultants. Nearly one in six indicated that they participate as municipal officials, employees, or contractors, and nearly one in seven as Connecticut state agency employees or contractors. The remaining respondents indicated a variety of other roles, including utility company employee, commercial or residential developer, and residential property owner. Among those who selected "Other," more than a quarter indicated they serve as consultants of various kinds (e.g., environmental consultants). The rest indicated a range of roles, including conservation district employee, farmer, federal employee, forester, marina owner, non-profit employee, and researcher. (See *"Appendix B,"* Q8.)

Just over a third of respondents indicated having applied for or participated in an NDDB project review more than 20 times. More than a third indicated having done so five times or fewer. The rest indicated having done so between 6 and 20 times. (See *"Appendix B,"* Q7.)

More than two-thirds indicated being very familiar with CT DEEP. The rest reported being somewhat familiar. None indicated being not at all familiar. (See *"Appendix B,"* Q1.)

Survey details

Descriptive summaries of survey responses are provided below. To simplify presentation, percentages are rounded to the nearest whole number, with 0.5 rounded up. (In Appendix B, percentages are rounded to the nearest tenth.)

CT DEEP and NDDB

CT DEEP's conservation roles

A strong majority of respondents agreed or strongly agreed that CT DEEP should fulfill the conservation roles mentioned. (See *"Appendix B,"* Q2.)

CT DEEP should...

conserve and protect rare and endangered animals	**88%** AGREE
conserve and protect rare and endangered plants	**86%** AGREE
designate "natural areas" to protect critical habitats for rare and endangered species	**79%** AGREE
prevent the spread of invasive species	**91%** AGREE

CT DEEP's communication of priorities

Half of respondents indicated agreeing that CT DEEP currently does a good job communicating conservation priorities for state-listed species and ecological communities. Nearly a third (32%) indicated neutrality. Most of the remaining sixth (15%) indicated disagreement, with only a few indicating that they did not know. (See *"Appendix B,"* Q3.)

NDDB's efficacy in achieving its purpose

The survey described the NDDB program's purpose as being "to protect Connecticut's native biological diversity, with emphasis on the state's most vulnerable species and ecosystems." Most respondents (60%) agreed that NDDB is effective at achieving that purpose. A quarter indicated neutrality. Fewer than one in ten indicated disagreement. (See *"Appendix B,"* Q4.)

Potential changes to increase efficacy

The survey presented six potential changes in approach and asked respondents which, if any, they thought would make the NDDB program more effective at achieving its purpose. Respondents were able to select multiple options. (See *"Appendix B,"* Q6.) In decreasing order, respondents selected:

1 Increased landscape-scale mapping of listed species so more is known before an application is filed **(57%)**

2 Land acquisitions by the state to conserve and protect key habitats **(50%)**

3 An increase in NDDB staff/time/capacity **(45%)**

4 More proactive engagement/collaboration by NDDB staff **(45%)**

5 Follow-up by NDDB staff to confirm implementation of conservation measures **(37%)**

6 A mitigation banking system **(28%)**

7 Other **(12%)**

It is possible that more respondents would have selected "a mitigation banking system" if the survey had provided a definition. In providing a text reply under "Other," one respondent asked, "What is a mitigation banking system?"

Under "Other," respondents suggested a range of ideas, including fine-scale mapping, land acquisition, hiring staff to protect key habitat, greater communication and collaboration, follow-up on measures and results, statutory timelines for NDDB comment and review periods, streamlined processes, updates to the ezFile system, and increased access to NDDB metadata across CT DEEP divisions. Some of these responses echoed selections available for this question or topics addressed later in the survey.

Review process
Satisfaction with the process

Nearly two-thirds (65%) of respondents indicated being slightly or very satisfied with their overall experience of the NDDB review process.

The survey identified five aspects of the process and asked respondents how satisfied they were with each. (See *"Appendix B,"* Q9.) Nearly two-thirds indicated being satisfied with support received from NDDB staff (65%, with 13% dissatisfied) and the predictability of the process (64%, with 14% dissatisfied). Slightly fewer indicated satisfaction with the efficiency of the process (61%, with 25% dissatisfied), the consistency of the process from one project or filing to the next (60%, with 12% dissatisfied), and the transparency of the process (59%, with 20% dissatisfied).

Across these five aspects, 0–5 percent of respondents selected "not applicable."

65% SATISFIED
with overall experience

61% SATISFIED
with efficiency of the process

65% SATISFIED
with support received from NDDB staff

60% SATISFIED
with consistency of the process from one project or filing to the next

64% SATISFIED
with predictability of the process

59% SATISFIED
with transparency of the process

Ease of the process

The survey identified six aspects of the NDDB environmental review process and asked respondents to rate the ease or difficulty of each. (See *"Appendix B,"* Q11.) The proportion of respondents who selected "not applicable" varied widely, from less than 1 percent for the application/filing process to 49 percent for preparing incidental take reports. To more directly reflect the perspectives of respondents for whom each aspect was relevant, "not applicable" responses were excluded in calculating the percentages below.

A majority of respondents rated three aspects as easy or very easy:

- Application/filing process (64% easy or very easy)
- Understanding what to do with preliminary determinations (61% easy or very easy)
- Understanding requests for additional information (55% easy or very easy)

A majority rated the other three as neutral or difficult:

- Developing mitigation plans (35% easy; 37% neutral; 28% difficult)
- Finding qualified taxonomic experts (25% easy; 40% neutral; 35% difficult)
- Preparing incidental take reports (22% easy; 62% neutral; 15% difficult)

Potential changes to ease the process

The survey presented six possible changes and asked respondents how strongly they agreed that each would make the NDDB review process easier for applicants. (See *"Appendix B,"* Q12.)

Having a definite timeframe for an initial response from NDDB	**85%** AGREE
Standardized review processes for recurrent activities	**80%** AGREE
Virtual meetings with NDDB staff to discuss the project/site	**68%** AGREE
Additional NDDB staff capacity to support the ezFile process	**65%** AGREE
Additional NDDB staff with specific biological expertise	**63%** AGREE
Field/site visits with NDDB staff to discuss the project	**60%** AGREE

Impact of NDDB review process on goal achievement

The survey asked respondents how strongly they agreed that the NDDB review process makes it harder for them (and their organization and/or clients, if applicable) to achieve key goals. (See *"Appendix B,"* Q13.)

"The review process makes it harder to achieve key goals."

29% AGREE	32% NEUTRAL	37% DISAGREE

Crosstab analyses

DJ Case ran crosstab analyses to see whether there were correlations between responses to particular questions discussed above. Across the following comparisons, crosstab analyses indicate no significant correlation:

- Perspective on CT DEEP's conservation roles (Q2) compared with:
    - Perceived efficacy of NDDB in achieving its purpose (Q4).
    - Satisfaction with the NDDB process (Q9).

- Level of experience with the process (Q7) compared with:
    - Perceived efficacy of NDDB in achieving its purpose (Q4).
    - Satisfaction with the NDDB process (Q9).
    - Perceived impact of the NDDB review process on goal achievement (Q13).

- Roles played in relation to the NDDB process (Q8) compared with:
    - Perceived impact on goal achievement (Q13).

In contrast, crosstab analyses did indicate a significant correlation between level of experience (Q7) and perceived ease of filing (Q11). This is corroborated by staff and user interviews: new users may struggle with ezFile, while experienced users find it easy to navigate.

Website

The survey identified six dimensions of the NDDB website experience and asked respondents how satisfied they were with each. (See *"Appendix B,"* Q15.)

A majority of respondents indicated being slightly or very satisfied with five of the six:

- Ease of understanding website content overall (62% satisfied; 24% neutral; 8% dissatisfied)

- Usefulness of the pre-screening ("blob") maps (61% satisfied; 21% neutral; 13% dissatisfied)

- Clarity provided on the website about the steps in the review process (54% satisfied; 27% neutral; 14% dissatisfied)

- Ease of navigating the website (53% satisfied; 27% neutral; 16% dissatisfied)

- User-friendliness of the website (51% satisfied; 26% neutral; 17% dissatisfied)

Slightly under half indicated being satisfied with the ease of finding answers to questions on the website (47% satisfied; 30% neutral; 16% dissatisfied).

Across these six dimensions, 5–7 percent of respondents selected "not applicable."

Notifications, letters, and measures
Satisfaction with automated determination letters

The survey identified eight aspects of automated determination letters and asked respondents who had received such a letter to rate how satisfied they were with each aspect. (See *"Appendix B,"* Q19.)

84% SATISFIED
with efficiency of the process

77% SATISFIED
with predictability of the process

76% SATISFIED
with overall clarity of the letters

72% SATISFIED
with clarity in description of measures to be taken

68% SATISFIED
with transparency of reasoning

65% SATISFIED
with clarity about next steps

60% SATISFIED
with feasibility of conservation measures

60% SATISFIED
with effectiveness of measures in achieving conservation outcomes

Respondents indicated high satisfaction with the efficiency of the process (84% satisfied), predictability of the process (77% satisfied), and overall clarity of the letters (76% satisfied). Across these three aspects, only 3 to 6 percent indicated being dissatisfied.

They indicated somewhat lower satisfaction with clarity in description of measures to be taken (72%), transparency of reasoning (68%), clarity about next steps (65%), feasibility of conservation measures (60%), and effectiveness of measures in achieving conservation outcomes (60%). Across these five aspects, 3–14 percent indicated being dissatisfied, primarily with feasibility of measures, clarity about next steps, and effectiveness of measures.

Across these eight aspects of automated determination letters, 4–12 percent of respondents selected "not applicable."

Satisfaction with biologist/botanist review letters

The survey presented the same eight aspects of, and asked the same question about, biologist/botanist review letters. (See *"Appendix B,"* Q21.)

Compared to automated determination letters, respondents indicated substantially less satisfaction with efficiency (54% satisfied; 28% dissatisfied) and predictability (56% satisfied; 21% dissatisfied).

54% SATISFIED
with efficiency of the process

56% SATISFIED
with predictability of the process

71% SATISFIED
with overall clarity of the letters

68% SATISFIED
with clarity in description of measures to be taken

68% SATISFIED
with transparency of reasoning

68% SATISFIED
with clarity about next steps

55% SATISFIED
with feasibility of conservation measures

47% SATISFIED
with effectiveness of measures in achieving conservation outcomes

Across all but one of the remaining aspects, total satisfaction with biologist/botanist letters held within 5 percent of satisfaction with automated determination letters. Total dissatisfaction was higher, ranging from 12 to 19 percent.

Less than half of respondents indicated being satisfied with the effectiveness of measures required by biologist/botanist review letters (47% satisfied; 12% dissatisfied).

Across these eight aspects of staff review letters, 1–6 percent selected "not applicable."

Finding and using qualified experts

The survey presented four statements about finding and using qualified taxonomic experts to conduct field surveys as part of the NDDB review process and asked respondents how strongly they agreed with each. (See *"Appendix B,"* Q23.)

Respondents indicated mixed perspectives on the first statement:
"The current system works well."

20%	33%	19%	29%
AGREE	**NEUTRAL**	**DISAGREE**	**DON'T KNOW**

The other three statements suggested possible changes. Across all three, a majority of respondents agreed that the change would help users find and use qualified experts.

It would help to have…

a list of biologists and botanists who have been approved for past reviews	**67%** AGREE
a clearly defined process for experts to get approved	**59%** AGREE
a checklist of criteria for selecting qualified taxonomic experts	**58%** AGREE
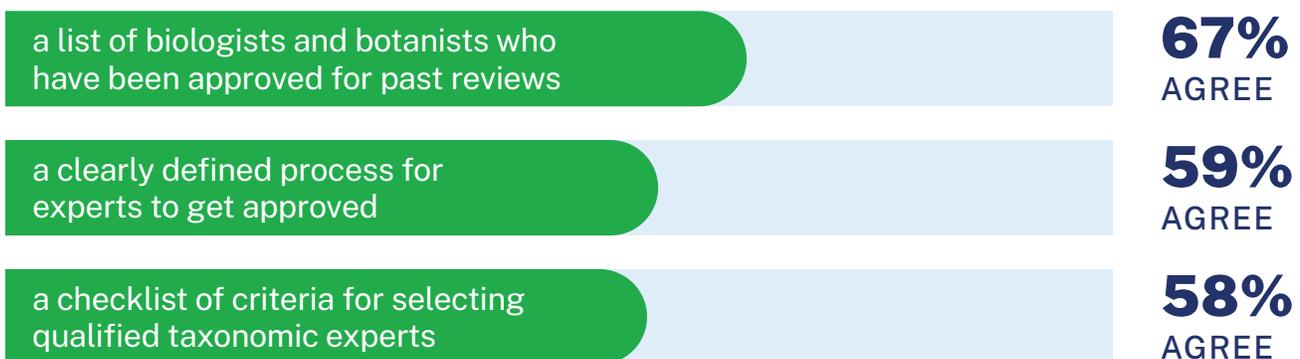
Across all three, 2 percent or fewer disagreed that the change would help. Between 21 and 23 percent indicated that they did not know.

Program staff

Respondents were asked to rate their satisfaction with seven aspects of interactions with NDDB staff. (See *"Appendix B"* Q25.) Across these aspects, 11–17 percent of respondents selected "not applicable." Several factors could account for respondents not needing to interact directly with staff (e.g., automated determinations; straightforward biologist reviews that did not require applicant-staff correspondence; respondents playing roles that do not require engagement with NDDB staff). To more directly reflect the perspectives of respondents for whom each aspect of interactions with staff was relevant, "not applicable" responses were excluded in calculating the percentages below.

More than three-quarters of respondents indicated being satisfied with staff knowledge (83%, with 62% very satisfied), staff willingness to answer questions (77%, with 60% very satisfied), and staff helpfulness (77%, with 55% very satisfied). Across these aspects, 2–8 percent indicated dissatisfaction.

More than two-thirds indicated being satisfied with the clarity of staff communication (71%, with 47% very satisfied), staff willingness to work collaboratively (69%, with 45% very satisfied), and staff willingness to listen to concerns (68%, with 45% very satisfied). Across these aspects, 9–11 percent indicated dissatisfaction.

More than half indicated being satisfied with the timeliness of staff responses (58%, with 40% very satisfied), while a fifth (20%) indicated being dissatisfied.

83% SATISFIED
with staff knowledge

77% SATISFIED
with staff willingness to answer questions

77% SATISFIED
with staff helpfulness

71% SATISFIED
with clarity of staff communication

69% SATISFIED
with staff willingness to work collaboratively

68% SATISFIED
with staff willingness to listen to concerns

58% SATISFIED
with timeliness of staff responses

Open-ended responses

To allow for detailed feedback on a range of topics, the survey included nine open-ended text response fields (Q5, Q10, Q14, Q16, Q17, Q22, Q24, Q26, Q27). The first three received the greatest number of responses: Q5 (53% of respondents), Q10 (50%), and Q14 (44%). The other six open-ended questions received varied response rates (13–20%).

Responses yielded a combined total of approximately 50 pages of text, which were provided to CT DEEP.

DJ Case's initial review indicated that text responses corroborated findings from interviews and closed-ended survey questions. A forthcoming thematic summary analysis of open-ended survey responses will serve as an addendum to this report.

CROSS-STATE ANALYSES

In consultation with DJ Case, CT DEEP identified ten states for comparison purposes. Considerations included prioritizing some states with similar population patterns, especially in the Northeast; making comparisons mentioned in staff and external interviews; including states that use online tools and assessments; ensuring diversity in super versus non-super agencies and in levels of engagement with mitigation banking; and ensuring diversity in geography, political leanings, and urban/rural population patterns.

With assistance from CT DEEP, DJ Case was able to identify and schedule interviews with representatives of nine agencies. DJ Case conducted one-hour interviews with one or two staff members per agency; in two cases, a follow-up interview was also conducted. In addition to agreeing to interviews, agency staff generously answered written follow-up questions. DJ Case also reviewed online resources (e.g., descriptive webpages, digital mapping tools) associated with each agency's review process.

Given its limitations, this inquiry focuses on specific environmental review teams within each agency, especially those responsible for wildlife species, and reflects individual team members' understandings and viewpoints. It does not encompass interviews with staff from or detailed information about other entities (e.g., natural heritage programs, wildlife diversity programs) that may be involved in the protection of rare species in each state.

Alongside CT DEEP's Natural Diversity Data Base program, this inquiry examines approaches to environmental reviews taken by:

- **Arizona:** The Arizona Game and Fish Department's Project Evaluation Program

- **Georgia:** The Wildlife Conservation Section of the Wildlife Resources Division of the Georgia Department of Natural Resources

- **Massachusetts:** The Natural Heritage and Endangered Species Program of the Massachusetts Division of Fisheries and Wildlife

- **New Jersey:** The Threatened and Endangered Species Unit in the New Jersey Department of Environmental Protection's Bureau of Watershed Management

- **New York:** The New York State Department of Environmental Conservation's Division of Fish and Wildlife

- **Ohio:** The Division of Wildlife in the Ohio Department of Natural Resources

- **Oregon:** The Oregon Department of Fish and Wildlife

- **Pennsylvania:** The Pennsylvania Game Commission

- **Virginia:** Environmental Services in the Virginia Department of Wildlife Resources

As DJ Case commenced analysis, it quickly became clear that comparing these states' approaches to environmental reviews for listed species is, as the idiom has it, like comparing apples and oranges. Across these states, agencies tackle this work in a wide variety of ways, within disparate regulatory (or non-regulatory) contexts and agency structures, and with review responsibilities for various taxa distributed in significantly different ways. Where some states have at least one clearly delineated program or unit dedicated to such reviews, others take a decentralized approach. In some states, other entities (e.g., natural heritage programs responsible for data collection and analysis) also contribute to the overarching mission of protecting rare species.

The primary potential value in cross-state analyses lies not in making direct comparisons but in gleaning ideas and insights that may prove useful to Connecticut as the state considers possible adjustments to the NDDB review process.

Cross-state highlights

Based on analyses of agency website content and interviews with agency staff across ten states, including Connecticut, DJ Case distilled a set of overarching findings relevant to listed-species review programs and their relationships with the regulated community.

Map data and systems

Across states, several map-related factors clearly result in more efficient reviews and more positive, collaborative relationships with applicants:

- Comprehensive mapping of listed species and/or critical habitats.
- Close alignment between the maps and screening tools available to applicants before review requests are made and those used by agency staff during reviews.
- Maps that do not change frequently or unpredictably.

In Connecticut's case, NDDB staff and users alike stated in interviews that significant gaps in map data create uncertainty and lead to frequent surveys at applicants' expense. Similarly, differences between the data layers used by screening/blob maps and those used by the automated determination process lead to unpleasant surprises in some cases.

States' varied mapping models reveal a range of potential approaches and parameters, from priority habitat frameworks to buffers significantly wider than NDDB currently uses (e.g., extending a mile or more from documented occurrences).

Pre-application consultations

Across states, it is clear that—for large, complex projects—the opportunity for early collaborative engagement between project proponents and project review staff can enable more effective planning and decision-making by providing clarity, reducing uncertainty, and minimizing surprises.

Streamlining for recurrent activities

Most states have established broad mechanisms to streamline review of the significant volume of work conducted each year by state transportation departments and utility companies.

Surveys and qualified experts

Across states, there is a high degree of variability in how frequently applicants are required to hire qualified experts to conduct site surveys. In states where the agency has the authority to approve or reject consultant qualifications, there is also a high degree of

variability in how much assistance is provided to applicants in identifying qualified experts. In some states, staff provide applicants with the names of experts qualified for the work needed. Other agencies provide lists for some taxa and/or details on the proficiencies and qualifications required. In several states, including Connecticut, agency staff generally review new third-party consultants' CVs. It appears that the discontent expressed by members of Connecticut's regulated community about the state's approach to surveys and qualified experts is the result of a combination of factors unique among the states considered here.

Mitigation banking

CT DEEP staff have expressed interest in the possibility of a mitigation banking system. Across the nine other states considered in this inquiry, staff indicated that they either did not have such a system in place or used the approach sparingly.

In cases where mitigation banking is used in connection with listed-species reviews, staff reported that it is limited to particular species, projects of particular types and sizes, and/or collaborations with particular partners. In cases where mitigation banking was identified as a component of the state's approach, staff indicated that it was useful. None, however, indicated that it served as a cornerstone of the overall approach.

Relationships with the regulated community

In some states, including Arizona and Georgia, listed-species reviews have limited effects on private development and the regulated community generally has few complaints. In others, including Connecticut and New Jersey, some users have complaints, especially about timelines. In others, including Pennsylvania and Virginia, staff report hearing very few complaints and attribute this to strong relationships and a history of collaboration, mutual trust, and proactive engagement.

This inquiry's findings suggest two pathways for minimizing discontent within the regulated community: (1) significantly limit the degree to which listed-species reviews can impede development, especially on private property, or (2) build strong relationships between the program and the regulated community, characterized by collaborative, proactive, solutions-oriented engagement and built on a foundation of clarity, consistency, and predictability.

As described by agency staff across all states, the quality of the relationship between a review program and the regulated community is the result of a complex set of factors.

The Massachusetts Turnaround

Staff with MassWildlife's Natural Heritage and Endangered Species Program (NHESP) described a history that warrants brief summary here, as an illustration of key findings.

Two decades ago, NHESP had two staff members and a several-month backlog of reviews. The regulated community was frustrated by the slowness and unpredictability of the process. Some project proponents ended up unpleasantly surprised by review outcomes.

NHESP worked with users to address these and other concerns, resulting in regulatory change.

Today, the Massachusetts approach includes these features:

- A mapping system based on priority habitats that (1) typically excludes highly fragmented areas with limited numbers of documented species occurrences, (2) is updated at most every four years, (3) serves as a definite litmus test to determine whether filing and review will be required for a given site, and (4) minimizes the need for applicant surveys.

- A free, informal pre-filing consultation process that helps streamline reviews and proactively address concerns in advance of formal filing for large, complex projects.

- Careful internal coordination to ensure that NHESP provides clear, consistent direction to applicants and consultants.

- Fixed review timelines.

- Filing fees that help pay for the nine review staff positions needed to meet those timelines.

NHESP staff report that the situation with the regulated community has improved dramatically. Complaints about slow reviews and inconsistent outcomes have largely vanished. Today, complaints are rare and come mainly from small-scale developers and landowners who are surprised to learn that a review process exists and might limit what they can do.

Cross-state details

Regulatory contexts

Analysis of the regulatory contexts within which review processes operate in each state is beyond the scope of this inquiry. It is important to note, however, that these contexts are highly variable, especially as they relate to projects on privately owned property.

In Arizona, for example, there is no state law requiring consultation with the Game and Fish Department regarding potential project impacts on sensitive species, and recommended conservation measures are generally voluntary; counties and other entities with permitting and regulatory authority are responsible for deciding whether to require any protective measures. In Oregon, state law encourages coordination among agencies, but other state agencies — and counties, which issue permits for housing development — can typically forego coordination with the Department of Fish and Wildlife (ODFW), even when a project may impact listed species.

In most of the states considered in this inquiry, state permitting processes require coordination with a review of impacts to listed species. In practice, such coordination carries quite different implications from state to state. In Pennsylvania and Virginia, for example, permitting agencies frequently incorporate review comments and measures into permit language as requirements, conditions, or best management practices. In contrast, Georgia's laws significantly limit the extent to which the presence of listed species can impede development on private property.

In Ohio, the Division of Wildlife is recognized as having jurisdiction over animals, not habitats; the division's review comments are generally framed as recommendations, not directives, and the state recognizes the U.S. Fish and Wildlife Service (USFWS) as having habitat-related jurisdiction. In contrast, the Massachusetts Endangered Species Act and its implementing regulations explicitly protect not only rare species but also their habitats.

These variations have significant implications for the review processes discussed in this report.

Federal regulatory frameworks (notably the Endangered Species Act) and related implementation and enforcement mechanisms apply to all states. When federally listed species are involved, a federal agency may require conservation measures a state agency does not.

Taxa considered

The number of species listed under various states' Endangered Species Acts varies significantly, and different jurisdictional authorities may further constrain the number of species subject to environmental review. In addition, the agencies, divisions, and programs investigated here have responsibilities that range widely by taxa. These variations translate into significantly different levels of review complexity.

A few data points provide a sense of these variations:

- Several of these review programs — in Arizona, Georgia, and Massachusetts — consider fish, wildlife (i.e., birds, mammals, reptiles, and amphibians), plants, and invertebrates, including insects and freshwater mussels.

- Some states, including New York, Ohio, and Pennsylvania, have made only limited investments in invertebrate reviews, especially terrestrial.

- In most states, a separate program or division handles reviews for at least one group of species, typically plants and/or insects. In Connecticut, for example, NDDB considers wildlife, plants, and invertebrates, but fish are considered by the Division of Fisheries.

- Of the programs investigated here, the Pennsylvania Game Commission handles reviews for the narrowest range of taxa: birds and mammals only; fish, reptiles, amphibians, aquatic invertebrates, and plants are handled by other agencies.

- In coastal states, these programs have widely varying degrees of involvement with marine species.

As a result of such variations, the programs examined during this inquiry are responsible for quite different numbers of species. Reviews by the Pennsylvania Game Commission, for example, consider fewer than 50 birds and mammals, while the online Environmental Review Tool used by Arizona's Project Evaluation Program considers more than 800 special status species.

In this inquiry, neither the range of taxa nor the number of species considered by review programs was utilized as a comparative criteria.

In addition to specific taxa, some states' review programs, including NDDB, consider significant natural communities, though these may not have formal regulatory status.

Review volume and time investment

CT DEEP expressed interest in how many reviews each state conducts annually and how much staff time is devoted to them. Across the states selected for comparison, agency staff play widely varying roles, both in review processes and across a suite of other responsibilities.

To provide a sense of this variation, several agencies' estimates are summarized here:

- For reference, Connecticut's NDDB program receives 1200–1500 review requests annually and the number is trending upward. The program currently has seven staff members. NDDB staff indicated that approximately 4.5 FTE are spent on project reviews, while 2.5 FTE are spent on various other duties (e.g., field surveys, species data management and mapping, serving on committees related to Species Status and Wildlife Action Plan updates, program supervision).

- Arizona's Project Evaluation Program (PEP) annually receives several hundred evaluation and review requests, including reviews of proposed policy changes and environmental compliance reviews, plus 100 or more data requests. The PEP team has four members: three specialists plus one supervisor. Regional staff and specialists assist with reviews in some cases. All told, PEP staff estimate that 3.0–3.5 FTE are spent on project reviews.

- Georgia DNR's Wildlife Resources Division received 1,300 review requests in fiscal year 2024. For 70–80 percent of requests, the agency provides a full project review with comments; the rest are determined not to need a full review. Three biologists (3 FTE) handle reviews in three work areas across the state, though staff indicated that the team needs a fourth biologist to effectively handle the current workload. Depending on the species involved, the team may also request input from other DNR staff biologists.

- In federal fiscal year 2024, MassWildlife's NHESP completed 1,430 reviews. Of these, 1004 were dual reviews of 502 projects involving both the state's Endangered Species Act and its Wetlands Protection Act. NHESP has nine review staff positions (9 FTE), one of which was vacant at the time of this inquiry. The Assistant Director of NHESP also dedicates time to managing the review program. Review staff coordinate with many of NHESP's conservation science staff (8 permanent FTEs) on more significant projects; many of the same science staff are also responsible for reviewing rare species observation reports and mapping Priority Habitats; in total, about 10–20 percent of science staff time is dedicated to the review program.

- In 2025, New Jersey's T+E Unit completed 1,674 reviews across 1,191 project requests. On average, each request involved 1.4 reviews (e.g., a single property might require separate reviews related to both wetland and flood hazard area regulations). The T+E unit, which had two staff members in 2005, now has nine: seven full-time staff and two temps. All 9 FTE are dedicated to activities related to reviews (i.e., project reviews, site inspections, trainings). When necessary, the T+E Unit will reach out to specialists in other units and divisions (e.g., a snake biologist with NJ Fish and Wildlife). Staff indicated that the FTE equivalent of review assistance provided by other units and divisions would be difficult to estimate.

- In Oregon, it is unclear how many review requests are received annually, as they are not tracked in a central system. Though some requests are made through ODFW's central office, others go directly to district staff. It is likewise unclear precisely what proportion of these requests result in a full review or how much total staff time is spent on reviews across the agency.

Review fees

In most of the states considered here, including Connecticut, project proponents do not pay fees specifically linked to reviews for potential impacts on listed species. (They may pay permit application fees. A listed-species review may or may not be part of the permitting process.)

Pennsylvania Natural Diversity Inventory reviews incur a nominal $40 fee, though federal, state, and local government agencies are exempt.

In Massachusetts, applications for formal review by NHESP incur [a wide range of fees](#). These run from $300 for a simple review (for less than five acres of disturbance) to $4,000 for a complex review (for more than 20 acres of disturbance or a project requiring a wetland variance) and $4,000 per Priority Habitat intersected for linear reviews (for projects greater than a mile in length). Of the 1,430 reviews NHESP completed in 2024, the program received fees for 827. In federal fiscal year 2024, regulatory review fees brought in approximately $375,000. These fees, which have not changed in two decades, supplied 30 percent of the review program's budget.

Map data and systems

Each state maintains at least one mapping system that aggregates a range of datasets. In some states (e.g., Connecticut), review programs manage these datasets and maps. In other states (e.g., Pennsylvania), a different unit or division provides management. In others (e.g., New York), data management is performed by a non-government entity housed at a university.

Comprehensive mapping and data alignment help ensure efficient reviews and positive, collaborative relationships.

These systems and datasets vary in terms of what data can be accessed by applicants in the pre-application phase, what data are used in the agency review process, and how closely the two align. Across all states, certain location data are not publicly available for species particularly sensitive to collection or other threats.

States' mapping systems are based on somewhat variable core data (e.g., species occurrences, natural communities, habitat types), differing historical time frames for determining the relevance of species occurrences, and differing buffers defining the "hits" that trigger reviews. They also vary in terms of how comprehensive they are and how frequently they are updated.

Connecticut

NDDB provides publicly accessible screening maps (aka "blob" maps), designed to support Endangered Species Act compliance (when legally required) and provide information to anyone interested in avoiding impacts to listed species. The screening maps focus on documented observations of state listed species and are updated twice each year to include additions of new observations and deletions of sites that are determined to no longer provide suitable habitat. The "blobs" shown are based on quarter-mile buffers around each documented occurrence of listed terrestrial species, while a 300-foot buffer is placed around waterbodies with documented aquatic species.

There is no specified time limit on occurrences, meaning that a documented occurrence from a century ago may still be reflected in the screening maps, especially for plant species, if the habitat has not been significantly altered. For animal species that have been the subject of greater survey effort, NDDB staff indicated that species are generally assumed to be absent if no occurrences have been documented in the past 20–30 years. In general, NDDB staff periodically review observations, usually in sync with the five-year cycle for updating the Endangered Threatened and Special Concern species list, and will remove sites from review that appear to have deteriorated due to development or other factors.

The public-facing screening maps only indicate the documented presence of any listed species. They provide no information about which species may be present in that location. Information on species is available through the Site Assessment tool, described below.

Project proponents are encouraged to use the screening maps to identify locations with potential impacts to listed species. If an applicant consults the screening maps and finds no overlap between the proposed project site and the maps' shaded areas, then further NDDB review is not required under state law. In such cases, the applicant can demonstrate Connecticut Endangered Species Act compliance by indicating (e.g., in a checkbox on a state permit application) that the project is not located in a NDDB area. Additional NDDB review may, however, be required to secure federal or municipal approvals or as part of other review processes.

To learn more about what is in a "blob" on the screening map, anyone can use the online portal to conduct a Site Assessment by drawing a polygon on a map. This site assessment will then reference data layers that include much more detail than the screening/blob maps, as well as different parameters. For example, these layers — updated quarterly as new data are gathered — include 660-foot buffers around eagle nests, federally required setbacks, and delineations of species-specific suitable habitats, home ranges, and habitat uses (e.g., foraging, nesting). The resulting Site Assessment report, which the applicant can download but which is not saved to their ezFile account, will list potentially present species, provide information on their general ecology, and include lists of other resources.

> Differences between the data layers used by different tools sometimes result in unpleasant surprises for applicants.

When users submit an online application for full environmental review, the system can return an automated final determination under specific circumstances. (See *"Automated determination."*) Because the data layers used by the screening/blob maps are different from those used by the automated determination process, applicants are sometimes surprised that an area without a "blob" may include species recommendations.

NDDB staff noted that they intentionally designed the screening maps to cover less area than the data layers used by the Site Assessment tool and by staff during reviews. Their aim was to concentrate regulation in areas where occurrences had been specifically documented, and to avoid over-regulating modeled or potential habitat. In conducting reviews, NDDB staff reference the data layers used by the Site Assessment tool as well as other data resources that may indicate risk to additional species.

In interviews, NDDB staff and applicants alike indicated that significant gaps in mapping data, particularly regarding plants, often lead to site surveys being required at applicants' expense. These gaps occur especially on private property, where the state has not been able to access sites to assess habitat suitability.

> Gaps in mapping data, especially for plants, often lead to surveys being required at applicants' expense.

Arizona

AZGFD's free Environmental Review Tool (ERT) can be used for basic land use and conservation planning without user registration or login. Registering for an account enables access to additional data. Each year, about 2,500–3,000 projects are entered into the ERT, some of which are duplicates or represent feasibility testing rather than projects that will be pursued.

Based on project location and other information entered, the ERT returns a report that includes two lists of special-status species. The first list is based on documented occurrences within specified distances of the project site: within two miles of a maintenance project (e.g., along a road, pipeline, or transmission line), within three miles of most project types, and within five miles of larger projects (e.g., mines, solar or wind installations). The second list includes species predicted to occur within the project area based on species habitat models. An ERT report may indicate that no further PEP review is recommended.

Where relevant, ERT reports include information and guidelines for incorporating wildlife conservation into project planning. They also identify Conservation Opportunity Areas and other landscape features (e.g., wildlife corridors) where recommended courses of actions are likely to yield substantial benefits for wildlife and habitats. All contents of ERT reports are stated as guidance for consideration by project proponents. Implementation is voluntary.

When the PEP team receives an evaluation request, they rely on the ERT database tool, where they have access to more detailed information than project proponents do, including exact species occurrence locations.

Georgia

To access Georgia's Natural, Archaeological, and Historic Resources GIS (GNAHRGIS), users must request an account. In GNAHRGIS, first created in connection with Georgia Department of Transportation projects, users can upload a project location and get a draft species list.

GNAHRGIS generates species lists by accessing and querying the state's natural heritage database. The system flags occurrences of species within three miles of the project site for terrestrial species. It also flags aquatic species (e.g., turtles, invertebrates) present within the same HUC 10 watershed area.

Project proponents can submit a request for information or a request for a formal project review. Most information requests come from project proponents or their authorized representatives, inquiring about properties they currently own or are considering purchasing.

When staff biologists begin reviews, they start with software tools that access and query the same natural heritage database. Based on analysis of these and additional species data, as well as the state's conservation lands database, the software — like GNARGHIS — flags occurrences of species and natural communities within a three-mile radius for terrestrials and within the same HUC 10 for aquatics. Regarding aquatics, the biologist will tailor recommendations based on whether there are aquatic resources on site.

In addition, the publicly accessible Georgia Biodiversity Portal allows users to access information about species that may be present in broad areas.

Massachusetts

The NHESP review system is built on a Priority Habitat framework. Habitat areas are reviewed and mapped based on verified species occurrences from the past 25 years. In deciding whether to map an area around one or more occurrence records, agency staff consider whether the regulatory review process is likely to benefit species there. Staff might, for example, decide not to map a highly fragmented area with a limited number of documented occurrences.

Priority Habitat areas for rare species are aggregated in the state's Natural Heritage Atlas (NHA). NHA mapping is reviewed and updated no more than every four years. NHESP staff indicated that updates used to be performed more frequently, but a degree of consistency (i.e., maps that do not change every year or two) was recognized as important to the regulated community, so the current update schedule was agreed upon as a compromise solution. Periodic NHA updates consist of reviewing new data and records (including newly listed species), adding new Priority Habitat, eliminating mapping associated with records that have gone historic or species that have been delisted, and evaluating new science to see whether any substantive changes to mapping guidelines are warranted. Because stability in mapping is important to the regulated community, NHESP considers the proposed acreage of new mapping, how that compares to mapping that is going historic, and similar metrics. Though the maps change with each NHA version, the scale of those changes tends to be modest.

The NHA data layer is publicly available in GIS format and as town-level PDF maps. In general, anyone planning to engage in development or otherwise disturb habitat is required to compare the site against the NHA. If a proposed project site does not overlap with a Priority Habitat area delineated in the NHA, then no Massachusetts Endangered Species Act (MESA) filing is required and NHESP does not require any information about the project. If the site does overlap with Priority Habitat, then a MESA filing would be required to proceed with the project.

In addition, an applicant (or landowner) can submit a rare species information request for regulatory review, habitat management, or conservation purposes by submitting a form and location map. The $50 fee is waived for requests related to conservation and habitat management and submitted by nonprofit conservation groups or government agencies. Within 30 days, NHESP will provide a letter that includes a list of state-listed species for the area identified, indicating the species on which formal review would focus if an application is filed.

New Jersey

New Jersey's publicly accessible GIS-based Landscape Project maps landscape regions based on similar ecological communities. It identifies suitable habitat for listed fish, wildlife, and insect species, depicted as polygons based on (1) land-use/land-cover data and (2) plotting credible species occurrences and assuming that all ecologically similar contiguous areas are suitable habitat. Landscape Project data determine whether a threatened and endangered species review is needed.

Landscape Project maps are updated approximately every 5–8 years. Between official updates, the state's Endangered and Nongame Species Program provides new species occurrence data to the Threatened and Endangered Species (T+E) Unit every 6–12 months.

Once the T+E Unit receives a review request, the team will consult additional data, including confidential species occurrence areas and point records, in making their determination.

New York

Early in project planning, applicants are encouraged to use the Environmental Assessment Form (EAF) mapping tool. EAF data is managed by the New York Natural Heritage Program (NYNHP), housed within the State University of New York College of Environmental Science and Forestry. NYNHP provides updated files for EAF mapping tools quarterly.

For wildlife species, the EAF mapping tool is based on recent occurrences; generally, "recent" means occurrences from the past 50 years, though longer timeframes are used for turtles, given their potential lifespans. On the EAF map, verified "occupied habitat" is defined by buffer areas around known occurrences. Each buffer is determined by home-range use and landscape requirements for individual species (e.g., 0.5-mile radius for most grassland birds; 1.5-mile radius for Northern long-eared bats; 2.5-mile radius for Indiana bats).

After selecting a location and drawing a project site, an applicant can create a report for the short or long version of the EAF. The EAF tool accesses DEC databases on all regulated resources and auto-fills relevant form sections, which can then be downloaded with a summary report that shows the project location and lists the answers to the auto-filled questions.

EAF map reports are informational, summarizing types of resources present (e.g., wetlands) and indicating whether occupied habitat for a listed fish or wildlife species is present. Generating an EAF map report does not require registration and does not trigger a review process. In some cases, project proponents also have the option to submit a project screening request to NYNHP.

When DFW conducts a review, the process depends on the specific project and existing relevant knowledge. In some cases, reviews are completed based on EAF maps and staff members' own knowledge. In other cases, DFW staff will also consult other resources (e.g., eBird, iNaturalist).

Ohio

Prior to submitting a project review request, applicants can access Ohio DNR's Pre-Planning Environmental Assessment Tool. Though not GIS-driven, the tool — developed to promote threatened and endangered species assessment and awareness early in project planning — enables applicants to draw project areas and get basic information on potential species. To replace this tool, Ohio DNR is currently developing a new ArcGIS/ESRI-based system that will enable applicants to see data at a finer scale and do more effective pre-planning.

When the Division of Wildlife conducts a project review, staff utilize a different GIS-based system to compare project locations with hexagons that indicate whether listed species have the potential to be present. These hexagon maps are based on actual point/occurrence data from Ohio DNR and external biologists, on listed species' prior range distributions, and on habitat types associated with listed species.

Oregon

In Oregon, applicants and their consultants have access to the Oregon Biodiversity Information Center (ORBIC) database. Maintained by Oregon State University, ORBIC allows users to view vegetation data layers and identify species that may occur on or near a project site.

In addition, ODFW maintains the Centralized Oregon Mapping Products and Analysis Support System (COMPASS). Based on species and habitat distribution models and updated periodically alongside Oregon's State Wildlife Action Plan, COMPASS supports early planning but generally does not provide site-specific information.

Many applicants and consultants submit project queries via both ORBIC and COMPASS and also consult the USFWS Information for Planning and Consultation (IPaC) tool. In responding to review requests, ODFW staff rely on the same mapping systems, local staff expertise, and database queries and information packets submitted by applicants.

Though species occurrences are included in its mapping, ODFW project reviews are habitat-based and tied to the state's Fish and Wildlife Habitat Mitigation Policy, which classifies habitats into six categories and establishes mitigation goals for each. These habitat categories have not been comprehensively mapped statewide. As part of the project review process, the applicant's consultant typically proposes an initial habitat category for the project site; an ODFW biologist then reviews the proposed categorization.

Pennsylvania

The Pennsylvania Conservation Explorer (PACE) provides conservation planning information on biological diversity, protected lands, streams, and other natural resources. People can use PACE to access this information, including a multi-layer map, without registering.

PACE also allows users to register and submit projects for Pennsylvania Natural Diversity Inventory (PNDI) environmental review. When a project is submitted for PNDI review, the system analyzes the project footprint against PACE datasets, which are based on species occurrences. If a project site overlaps with a buffer associated with an occurrence of one of 45-plus birds and mammals, the PNDI review system generates a "hit" and the project is sent to Pennsylvania Game Commission (PGC) staff for review.

PGC staff noted that Pennsylvania has historically made significant investments in long-term surveying and that the resulting wealth of data makes the review process efficient.

In addition to PACE, the Pennsylvania Wildlife Action Plan Conservation Opportunity Area Tool allows anyone to create an "area of interest" report that includes a list of Species of Greatest Conservation Need (not including plants) as well as relevant conservation actions and habitat information. Though intended to support conservation planning and of potential use to project proponents, this tool does not satisfy the regulatory requirements met by PNDI review.

Virginia

The Virginia Department of Wildlife Resources (DWR) provides landowners, consultants, and residents with access to the Virginia Fish and Wildlife Information Service (VAFWIS), which is based on 17 distinct data sets, including species observations. This online system enables users to find information about wildlife and conduct preliminary desktop analyses in advance of applying for a local, state, or federal environmental permit. VAFWIS can generate an Initial Project Assessment, including a list of imperiled wildlife and designated wildlife resources with known and potential occurrences in the project area. For environmental review purposes, a project area is defined as the project site plus a minimum two-mile radius.

VAFWIS is also a key trigger for many project reviews by DWR's Environmental Services (ES) team. Once a regulatory agency (e.g., the Department of Environmental Quality, the Marine Resources Commission) receives a permit application, that agency runs the project through VAFWIS. (DWR has created a manual for use of its information systems and maps.) If the regulatory agency gets a hit for a species or designated resource under DWR's purview, the agency coordinates with DWR, as required by a mutual memorandum of agreement, and the project goes to the ES team for review. If there is a known species occurrence within the two-mile-radius project area, ES staff also consider habitat in drafting comments and protective measures and recommending best management practices.

Pre-application consultations

In addition to encouraging pre-application uses of the map data and systems described above, some states encourage applicants to consult in advance with the agency, program, or unit responsible for listed-species reviews, especially regarding large, complex projects.

In New York, for example, pre-application meetings are common, especially for larger projects. In these meetings, project proponents and DFW staff may discuss all elements of the project and its potential impacts, including mitigation planning possibilities.

In Virginia, DWR staff indicated that, over time, the agency has built strong relationships with energy developers and other key members of the regulated community. As DWR staff see it, these relationships and the history of collaboration and mutual trust are essential ingredients in the efficacy of their environmental review process. Often, a consultant working on a large project calls ahead to arrange a preliminary meeting with DWR Environmental Services staff, to minimize surprises later in the process.

In Massachusetts, NHESP has established a free, informal pre-filing consultation process to help streamline reviews and proactively address concerns in advance of formal filing, especially for larger projects. The process starts with simple information: the proposed location and the overall type and scale of project. This consultation process is typically high-level and often occurs before a project has been designed, sometimes even before the property has been purchased. It is designed to manage uncertainty and provide clarity

Early consultation can provide clarity and reduce uncertainty, especially for large, complex projects.

on permitting pathways and expectations before significant investments are made. The process enables pre-design project adjustments (and even relocation) to avoid the take of listed species. In cases where a take appears likely, the process enables applicants and NHESP staff to figure out how the project can be permitted and how the take can be mitigated in advance of formal filing. For more complex projects, applicants may engage with NHESP staff over months or even years on a pre-filing basis.

In Connecticut, NDDB staff indicated that they participate in some Client Concierge Service and Early Municipal Assistance meetings but that these meetings — one hour long and involving multiple programs — are of limited utility in reducing uncertainty or providing clarity related to the NDDB review process. In addition, NDDB staff meet regularly with staff from DOT and from Eversource, the state's largest electric utility.

Application mechanisms and pathways

Across the ten states considered here, review requests reach appropriate agency staff through a variety of mechanisms. In some states, applicants and their consultants submit review requests; in others, reviews are requested by permitting agencies.

In several states, applicants and their consultants have a choice among more than one submission mechanism, typically including (1) an online portal and (2) mail and/or email. This is the case in Connecticut, where users can submit requests via the ezFile portal, by mail, or by email. Generally, online portals are integrated with each state's online mapping system.

In some cases, only one mechanism is available. In Massachusetts, applicants file via MassWildlife's Heritage Hub. In Pennsylvania, they file via the Pennsylvania Natural Diversity Inventory.

In Ohio, applicants send requests to an email address that returns an automated acknowledgement of receipt. Once received, requests are coordinated and facilitated by the Environmental Review Services Section of Ohio DNR's Office of Real Estate and Land Management.

In New Jersey, project managers within the Department of Environmental Protection (DEP) check permit applications against Landscape Project mapping to determine whether they require review by the T+E Unit. If so, the project manager sends the application to the T+E unit.

In New York, Environmental Assessment Forms are routed to the Division of Environmental Permits, which has authority over all state environmental reviews. The project is then assigned to a permit analyst who screens the project against all databases and

jurisdictions. In some cases (e.g., a project sited on an existing parking lot that happens to be within an "occupied habitat" buffer), the permit analyst will make a determination independently. Once initial screening is complete, the permit analyst will reach out to all relevant entities, including DFW if listed wildlife species are involved.

In Virginia, various regulatory agencies that receive permit applications are responsible for screening projects against the VAFWIS database. If VAFWIS returns a hit for a species or designated resource under DWR's purview, the regulatory agency submits the project information to DWR's Environmental Services team.

In Oregon's much less centralized or formalized approach, regulatory agencies likewise make direct contact with ODFW.

Key features of review processes

Across these ten states, review processes take diverse forms involving various regulations, taxa, data systems, and staffing arrangements. Rather than examine every detail of each state's process, this section examines key features that CT DEEP may find relevant.

- **Automated determination:** Based on the information DJ Case gathered from each agency, it appears that only Connecticut and Arizona offer systems that, under certain circumstances, return automated final determinations when there is a "hit" for a listed wildlife species.

- **Timelines:** While some review programs operate within set timelines, others do not. Where timelines are mandated—most often for initial responses or determination of whether an application is complete—they do not necessarily mean that the entire review process will be completed within that (or any) set timeframe.

- **Streamlining for recurrent activities:** Most states have established mechanisms to streamline review of the significant volume of work conducted each year by state transportation departments and utility companies.

- **Site visits:** Though site visits by staff remain a valuable component of reviews in some states, they are generally rare and reserved for specific purposes.

Automated determination

Many states provide an online system that enables project proponents to assess whether a site overlaps with habitat or with an occurrence buffer associated with listed species (see *"Map data and systems"*). In some cases, the absence of a "hit" in a state's online system fulfills any requirements and the project needs no further review.

Connecticut's online filing system incorporates an additional feature not offered by most other states considered in this inquiry. Once a request is submitted, the system conducts an initial automated review based on the data layers used by the Site Assessment tool.

If a project meets multiple criteria — related to project type, potentially present species, habitat types and habitat uses by those species, the type of threat posed, and the availability of standard avoidance or minimization protection measures — it is eligible for automated determination.

If a project is eligible, the applicant is presented with a preview of comments and conservation measures. If the applicant indicates that those measures are feasible, then the system will generate an automated letter of determination. If the applicant indicates that they are not feasible, then the request will be sent for NDDB staff review.

Automated determinations are generated for 118 animal species in Connecticut and are intended to streamline responses, especially for recurrent project activities. Automated determinations reference NDDB's library of standard protection measures, which are specific to species and project threat. Automated determinations are not generated for any plant species. If the NDDB request was not mandated in connection with state funding, permitting, or authorization, then the automated letter's comments serve as recommendations rather than requirements and cannot be utilized if the project is later determined to meet one of these mandating conditions.

About 40–45 percent of NDDB review requests receive an automated determination. The other 55–60 percent are reviewed by staff.

Similarly, Arizona's online ERT system will, under certain circumstances, return final automated determinations and provide recommendations even when there is a "hit" for a listed species. Key factors for automated determination eligibility include the project type, the type of threat posed, and the availability of standard protection measures to mitigate potential impacts.

Timelines

Some of the review programs considered here operate within set timelines. Others do not.

CT DEEP's NDDB program is in the latter category. About 40–45 percent of NDDB review requests return an automated final determination and many staff-reviewed projects receive timely initial responses and timely final determinations. In 2025, 79 percent of biologist reviews were completed within 35 days. Yet a small subset of responses and determinations take considerably longer. Though NDDB strives to provide an initial response within 70 days, 16 percent of requests have taken longer since ezFile implementation in November 2022. This unpredictability (e.g., how long it will take to get an initial response; how long the entire process will take) is a central concern for some members of the regulated community.

> Unpredictability in timelines is a central concern for applicants.

To paint a picture of how various states handle timelines, several examples are provided below. As illustrated by these examples, timelines for initial responses are not a reliable indicator of the duration of the review process as a whole.

In some states, there is no mandated timeframe but the review program has its own target deadline. The Pennsylvania Game Commission, for instance, aims to provide an initial response to DOT requests within 20 business days and to other requests within 30; in the fall of 2025, the turnaround time on the latter was running 40-plus days, due to a string of larger projects.

In other states, timelines are set by statute or agreement. In Massachusetts and New York, for example, agencies have 30 days to determine whether a filing is complete. In Virginia, as agreed with regulatory agency partners, DWR typically returns initial project comments within 30–45 days. In New Jersey, many permit applications must receive a reply within 90 or 120 days. Across states, the clock for such timelines starts once an application or request is officially filed; the timeframes noted do not include the kinds of pre-application processes described above. For some types of requests and permits in these states, there is no set time for an initial response.

In some states, staff are unable to conduct all reviews within the required time limit. In Virginia, for example, staff sometimes must resort to returning boilerplate language recommending that the applicant minimize impacts; permitting agencies may flag key projects so that DWR staff can prioritize them if triage is necessary. In Oregon, staff reported that, given the high volume of requests and limited capacity, regional biologists are simply unable to complete all reviews.

Where deadlines are in effect, they do not necessarily mean that the entire review process will be completed within that (or any) set timeframe.

- In Virginia, site surveys or habitat assessments are often required following initial comments. Depending on the extent and complexity of the project, as well as any changes made by the applicant over time, it can take years for a permit to be issued.

- In New York, if the Department of Environmental Conservation (DEC) determines that an initial application was incomplete, they will request additional information. Once that information is received, DEC again has 30 days to determine completeness. After an application is complete, DEC has another 30 days to prepare a draft permit or determine that a permit cannot be issued. If a project site overlaps with verified occupied habitat, DFW may require a mitigation plan, which typically takes 6–12 months to develop. Because the final 30-day window does not start until the application is considered complete, the entire process can take months or years.

- In Massachusetts, NHESP has 30 days to determine whether a filing is complete or more information is needed. For more than 70 percent of filings, NHESP completes

the full determination within that initial window. If the initial application is incomplete, the clock stops until the applicant submits additional required information (e.g., site photos, survey reports). Once the filing is complete, NHESP has an additional 60 days to determine if the project would result in a species take and to determine conditions required to avoid take. For projects that will result in a take, an applicant then has to submit a separate application (and fee) for a permit to authorize the take. Once filed, NHESP has 30 days to deny the application or issue the permit. Though NHESP operates under multiple fixed timelines, incomplete applications can stop the clock and the timelines do not encompass the informal, pre-application consultation process, which can last months or years for complex projects.
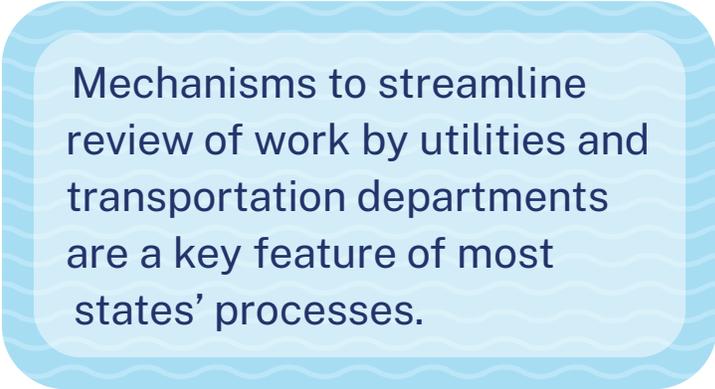
Because each state's review program is unique — with widely varying responsibilities and staff capacities, operating within disparate circumstances and structures — caution should be used in comparing the timelines they shoot for and achieve.

Streamlining for recurrent activities

Across states, a significant volume of work involving vegetation management and ground disturbance is conducted each year by state transportation departments (DOTs) and utility companies. Much of this work recurs in the same areas on a cyclical basis (e.g., roadside mowing, road and bridge work, right-of-way maintenance).

> Mechanisms to streamline review of work by utilities and transportation departments are a key feature of most states' processes.

As described below, most states have established mechanisms (e.g., MOUs, exemptions, annual plans, multi-year blanket permits, interagency agreements, dedicated positions) to streamline review of such work. To enable management of the project reviews they generate, DOTs often fund one or more staff positions within the review program.

In Connecticut, DOT and NDDB have co-developed standard protocols for specific situations (e.g., work on bridges where peregrine falcons may nest). Many of these standardized protection measures have been incorporated into the automated determination process. DOT also supports two NDDB staff positions. In addition, NDDB staff meet regularly with staff from DOT, as well as with staff from Eversource. Otherwise, reviews of recurrent activities in Connecticut generally follow the same process as reviews of other projects. In other states, they generally do not.

- **Arizona:** The Project Evaluation Program does not typically receive requests for reviews of maintenance activities. When they do, the team considers past recommendations to ensure consistency and identify where updates need to be made and explained.

- **Georgia:** The Wildlife Resources Division has a memorandum of understanding (MOU) with DOT, which no longer needs to request reviews for ongoing right-of-way maintenance and vegetation management. Reviews are only requested when DOT is proposing to change or widen a right-of-way or initiate new construction. The division also has MOUs with Georgia Power, establishing a similar arrangement for utility-related activities.

- **Massachusetts:** NHESP staff include one reviewer dedicated to utilities and one dedicated to transportation, in part to ensure consistency across reviews for those sectors and in part due to the specialized knowledge that these reviews require. For vegetation management along rights-of-way, the utility company submits an annual plan instead of filing for individual actions; for a fee, NHESP reviews the annual plan and sets conditions. NHESP also has an interagency agreement with DOT, which funds one staff reviewer; in exchange, NHESP provides expedited review of DOT projects. NHESP staff indicated that expedited reviews are careful and objective, but are made more efficient through more proactive, longer-term planning and more frequent site visits.

- **New Jersey:** For some kinds of recurrent work (e.g., utility right-of-way maintenance), DEP issues five-year blanket permits. These typically include blanket conditions, such as timing restrictions governing when certain kinds of work are completed. Blanket permits also place responsibility on the applicant to contact the agency if the applicant is planning certain kinds of work in areas of potential concern.

- **New York:** With other state agencies, DEC has developed processes to avoid recurring review of projects and actions. For example, DOT has a comprehensive consultation process related to potential impacts to listed species.

- **Ohio:** Ohio DNR and DOT have an MOU that establishes project tiers and excludes some project types from review. Because DOT engages in so many projects that trigger reviews, the department funds a Program Liaison position dedicated to the process.

- **Oregon:** For some types of work (e.g., fence installation and maintenance; mowing and other maintenance repeated in the same locations), ODFW has produced guidelines. In general, ODFW is not notified when such work is conducted.

- **Pennsylvania:** The PGC is working with USFWS and DOT to create a more streamlined process for certain DOT projects. Some recurrent work (e.g., mowing along roadways and medians) is already exempt and does not require review.

- **Virginia:** DOT projects do not go through the typical permit process. DOT has its own database, which uses DWR data, and coordinates with multiple partners in advance of any significant project. DWR also has a biologist assigned as a DOT liaison. Mowing in previously mowed areas typically does not require coordination, though DOT sometimes submits such work for review to be sure that DWR has no concerns.

Site visits

Across states, the development and refinement of GIS-based mapping resources have significantly reduced the frequency of site visits by agency staff in conducting reviews.

In Virginia, DWR staff estimate that 5 percent of project reviews involve site visits. In New Jersey, staff estimate that, collectively, the nine members of the review unit make one or two site visits per week, typically to ground truth the existence of suitable habitat. In Pennsylvania, the core two-person team conducts site visits as time allows, ideally at least once per month.

In most of the states considered here, site visits are rare and reserved for specific purposes. In Connecticut, for example, a staff member — most often a botanist — is most likely to make a site visit if a particularly sensitive site is involved or if a project appears likely to have substantial long-term conservation implications (e.g., hydrilla control in the Connecticut River). In New York, a staff member is most likely to visit sites where unavoidable adverse impacts are probable. In Oregon, biologists may conduct project site visits to confirm habitat quality. In Arizona, team members conduct site visits for some larger projects, such as renewable energy developments and substantial transportation projects that have the potential for species impacts. In Massachusetts, site visits are more frequent for DOT projects.

In Georgia, review biologists conduct occasional site visits, usually to provide technical assistance at the invitation of DOT. If a biologist is concerned about a particular non-DOT project, they typically offer to do a site visit. Most private landowners and developers decline the offer, though acceptance is somewhat more common on solar development sites where gopher tortoises are a potential concern.

Mitigation banking

The phrase "mitigation banking" describes mechanisms focused on conserving and protecting — and providing funding to conserve and protect — habitat for particular species to offset unavoidable impacts. If a project will have inevitable impacts on wetlands, for example, a developer might be required to preserve (or fund the preservation of) similar habitat elsewhere.

Though Connecticut has a relatively new [Water Resource Mitigation](#) program, the NDDB program does not generally have access to mitigation banking as a potential conservation measure. In interviews with DJ Case, some NDDB staff expressed interest in adding such an approach to their repertoire, though interviewees from the regulated community did not bring up the idea.

In interviews with other state agencies, DJ Case inquired into each agency's use of mitigation banking. Across states, staff indicated that they either do not have such a

system in place or use the approach sparingly. In cases where mitigation banking is used in connection with listed-species reviews, staff reported that it is limited to particular species, projects of particular types and sizes, and/or collaborations with particular partners.

In cases where mitigation banking was identified as an active component of the state's approach, staff indicated that it was useful. None, however, indicated that it served as a cornerstone of their overall approach.

Arizona

AZGFD does not have a mitigation banking system. In specific contexts (e.g., working with the Army Corps of Engineers) and cases (e.g., large-scale transmission line developments), AZGFD has established agreements designed to offset impacts by requiring habitat restoration or enhancement outside of the project site.

Georgia

The Wildlife Resources Division does not generally make use of mitigation banking in connection with listed-species reviews and recommended measures. Georgia has attempted species mitigation banks in the past, but they have proven suboptimal, largely due to restrictions on how funds could be spent. In collaboration with DOT and federal agencies, Georgia DNR recently established a Bat Conservation Fund; if DOT exceeds seasonal restrictions on tree clearing, they pay into the fund, which is used to purchase high-priority conservation lands. There has been discussion of establishing a similar program for aquatic species.

Massachusetts

In cases where habitat protection or restoration is not feasible or is only part of the requirements, NHESP can opt to allow applicants to provide funding for offsite conservation of the impacted species. For example, NHESP has an agreement with — and can direct money to — The Nature Conservancy (TNC) for assistance with box turtle habitat protection. NHESP staff report that this third-party approach is working well. TNC manages the funds, does outreach (in areas previously agreed on), and facilitates applications for funds. NHESP and TNC then jointly review applications and decide which projects to fund and in what amounts. MassWildlife has retained the authority to approve or deny any proposed project, to ensure that the funds benefit the species for which they were set aside. Though this approach has focused only on box turtles so far, NHESP is considering expanding to several additional species.

New Jersey

Though a [wetland mitigation banking system](#) has been developed, New Jersey does not generally use mitigation banking for wildlife habitat purposes. In two specific instances, however, related strategies are employed on demand.

Nearly 20 years ago, motivated by concern over loss of habitat that provided refuge for migratory birds in the coastal zone, the [Endangered and Nongame Species Program](#) worked to establish a rule requiring anyone clearing woods on parcels larger than 20 acres in the coastal zone to preserve suitable habitat at a 2:1 ratio; if a developer clears 10 acres, they must preserve 20. [Magnolia](#), a habitat mitigation organization, started identifying suitable properties and either purchasing them or reaching agreements with landowners to preserve them. Developers can purchase mitigation credits from Magnolia.

Less commonly used is a mitigation strategy for the state-listed Northern pine snake. Using this strategy, which has received support from the New Jersey Conservation Foundation, developers and their consultants — on their own or in collaboration with a third-party entity — can find and preserve appropriate mitigation sites.

New Jersey also made an attempt to establish mitigation banking for bat habitat, but the initiative stalled due to a lack of consistent demand.

New York

Mitigation banking is not part of suite of conservation measures that result from DFW reviews. Separately, the recently established [NYS E&T Mitigation Bank Fund](#) was created as part of legislation specific to large-scale renewable energy projects handled by the Office of Renewable Energy Siting (ORES), which can require payment into the fund to meet mitigation requirements. The law makes DEC responsible for using those funds to develop mitigation projects to offset impacts determined by ORES. To date, no payments have been made into the fund. DEC is working with ORES to ensure that the dollars collected are sufficient to generate a net conservation benefit. Currently, payments can only be made for the take of bald eagles, Northern long-eared bats, and acres of grassland habitat.

Ohio

Ohio DNR does not have a mitigation banking system. Such approaches are not among those recommended by the Division of Wildlife in review comments.

Oregon

Though ODFW does not generally recommend mitigation banking in its project review process, the agency has pilot-tested a [mitigation banking partnership](#) specific to fish passage. ODFW also serves on an interagency review team for a wetlands mitigation banking system managed by the Department of State Lands.

Pennsylvania

In collaboration with USFWS, the PGC has employed mitigation banking for Indiana bat conservation. There is precedent for land and habitat banking for other species as well; for example, commercial solar operations, some of which exceed 3,000 acres, have offset impacts to Northern harriers by protecting suitable habitat offsite. Pennsylvania DOT can also offset impacts by drawing against land it has purchased elsewhere. Additionally, conservation easements have sometimes been used as part of mitigation actions.

Virginia

DWR makes limited use of mitigation banking as a means to offset impacts to wildlife, mainly Canebrake rattlesnakes. Though DWR does not commonly turn to contribution of funds for habitat protection and/or species propagation outside a project site, the agency does consider such approaches in the case of large-scale public need projects and energy projects where impacts cannot be avoided.

DWR serves on the state's Interagency Review Team (IRT), which oversees mitigation banks and in-lieu fee programs and sites. DWR's participation in the IRT is focused on providing input and guidance to ensure that banks benefit wildlife to the greatest extent possible. Stream and wetland losses are among the more common uses of mitigation banking in Virginia.

Surveys and qualified experts

Across the states considered in this inquiry, the purposes for which and frequency with which applicants are required to hire third-party consultants and taxonomic experts (e.g., biologists, botanists, habitat specialists) varies widely. So does the type and degree of guidance provided to applicants in search of such experts. In several cases, the review unit, program, or agency has no authority to review or approve consultants hired by applicants. In other cases, the review unit, program, or agency provides applicants with the names of experts qualified for the work needed. Other agencies can provide consultant lists for some taxa and/or details on the proficiencies and qualifications required. In several states, including Connecticut, agency staff generally review new third-party consultants' CVs.

DJ Case's survey of Connecticut's regulated community indicated that the current system is a trouble spot, with only one in four respondents saying it is easy to find qualified experts and two in three agreeing that it would help to have a list of experts who have been approved for past reviews (see *"Survey details"*). In interviews, several members of the regulated community stated that NDDB's process for approving or rejecting experts is opaque, can delay surveys, and does not appear to be based on consistent, objective metrics (see *"Interview details"*).

A unique combination of factors appears to be at the root of the site survey and qualified expert difficulties encountered in Connecticut.

Agency staff in other states did not mention that significant difficulties arise in connection with the hiring of qualified experts. (This inquiry did not encompass interviews with members of the regulated community in other states; such interviews might reveal related discontent.)

It seems likely that Connecticut's challenges on this front are the result of a combination of factors that does not appear to exist in any of the other states considered here.

- **High frequency:** The NDDB review process often requires applicants to hire experts to conduct surveys.

- **Authority over qualifications:** The NDDB program has the authority to approve or reject the qualifications of experts proposed by applicants.

- **High barriers:** Compared to other states where experts' qualifications are subject to program approval, applicants in Connecticut face higher barriers in finding experts and receive less assistance in doing so.

Discontent with Connecticut's current approach to surveys and qualified experts is one facet of the NDDB program's relationship with the regulated community, discussed more broadly below.

Connecticut

In Connecticut, when NDDB reviewers deem that additional information is needed before a final determination can be made, applicants are often required to hire a qualified expert to complete a habitat suitability or species presence/absence survey. CT DEEP does not post a list of qualified experts and the NDDB website suggests that applicants "consult with local universities or botanical and zoological organizations who may be able to recommend knowledgeable persons." If the applicant proposes hiring an expert already known to the NDDB team and considered qualified for the work, the process is typically smooth.

If they propose someone else, they must submit the consultant's CV for review and approval by NDDB staff. Staff indicated that they approve most CVs and inform the applicant of the decision, at which point the expert can take steps toward acquiring a species-specific scientific collector permit, if needed, and begin work. (Applications for scientific collector permits are reviewed by several CT DEEP programs and provide NDDB staff with another opportunity to comment on applicant qualifications.)

In cases where staff think the consultant is not qualified for the work required, they inform the applicant of that decision. In such cases, staff often suggest questions the

applicant should ask potential consultants and offer guidance on finding qualified experts. Depending on the scenario, this guidance may include steering applicants toward the Native Plant Trust, providing potential university contacts, or providing a list of current scientific collector permit holders. Staff indicated that they have, on occasion, provided applicants with a list of consultants who have successfully submitted reports in the past; staff do this cautiously, taking care not to recommend a specific expert.

Arizona

AZGFD does not provide guidance on selecting qualified experts to conduct surveys. In the case of larger projects, most applicants have already hired habitat or species specialists. Neither AZGFD nor its Project Evaluation Program staff have authority over the qualifications of the consultants hired by applicants.

Georgia

Georgia DOT has a pre-qualification process that certifies consultants and consulting firms to conduct work on the department's behalf; this includes engineering, construction, and environmental consulting firms. Other project proponents may hire any consultant they wish. The Wildlife Resources Division has no authority to review or approve third-party experts.

Massachusetts

NHESP staff indicated that the state's Priority Habitat mapping, based on known observations and habitat suitability, is highly accurate, and that reviews presume that an observed species is present if habitat is suitable. Combined, these factors mean that, for most species, NHESP rarely requires applicant surveys as part of the review process. Surveys are more commonly required for state-listed plants, especially to assist with avoidance and minimization measures or, if necessary, relocation to suitable habitat outside the project footprint. In addition, applicants have the option to have a qualified biologist conduct surveys — under an NHESP-approved survey protocol — to document species presence or absence; applicants rarely do so, as voluntary surveys almost always confirm species presence.

If an applicant intends to conduct a required or voluntary survey or similar work, NHESP typically provides a list of at least 3–5 names of qualified consultants and can provide additional names if needed. Inclusion on NHESP's list of qualified consultants is based on staff experience, so there is no formal application or approval process. If a new consultant biologist wants to work on MESA projects, NHESP asks that they submit a CV and a detailed overview of where and how they have worked with a specific species. If the consultant is less experienced, NHESP may approve them to work under another qualified biologist to gain experience. If more experienced, NHESP tends to approve them for doing simpler projects at first until staff determine that they are qualified to do more complex work.

New Jersey

Staff in New Jersey's T+E Unit, which is not responsible for reviews related to plants, indicated that they do not often request species surveys as part of the review process. For most sites, Landscape Project mapping is considered sufficient species documentation. Staff noted, however, that applications must include habitat impact analyses.

In cases where applicants are required to hire a taxonomic expert, DEP does not have a formal, publicly available set of standards or approval process. A notable exception is the NJ Recognized Qualified Bog Turtle Surveyors list maintained by USFWS, which has its own standards and process. In cases where a survey is needed for other taxa, the T+E Unit typically consults with New Jersey Fish and Wildlife, which can provide a list of approved consultants or assist with reviewing CVs for other potential consultants.

New York

New York's Division of Wildlife staff indicated that they do not have a specific set of qualification requirements for the third-party consultants who conduct surveys and develop mitigation plans. They focus on the quality of the plan or survey, rather than on who prepared it. Staff also mentioned that they have noticed a recent and significant increase in the number of consulting entities billing themselves as mitigation planners for renewable energy development.

Ohio

For reptile and amphibian surveys, Ohio DNR maintains and supplies a list of state-approved herpetologists. The department has a formal application and vetting process for herpetologists who wish to be included on the list to provide their services to project proponents.

Mussel surveyors must pass a standardized test administered by The Ohio State University's Museum of Biological Diversity and must obtain an Ohio Scientific Collection Permit from the Division of Wildlife. To work where federally listed species are likely to be present, surveyors must also be on a USFWS-approved list.

Bat surveyors conducting mist-net surveys must likewise have a Scientific Collection Permit from the Division of Wildlife.

Staff did not report specific qualification requirements or approval processes for other taxa.

Oregon

In Oregon, project proponents often hire taxonomic or habitat consultants to assist with permitting. Outside of situations where ODFW has specific authority (e.g., fish passages), no specific criteria or requirements are applied to consultants' qualifications and ODFW has no authority to review or approve third-party experts. At the time of this inquiry, ODFW was considering making changes to this approach.

Pennsylvania

Applicants are generally required to submit third-party consultants' CVs for review and approval by the PGC. The agency can provide a list of qualified bat surveyors, many of whom are also qualified to conduct surveys for Allegheny woodrats. In addition, the PGC offers and periodically updates guidance documents that identify relevant conservation measures for particular species and describe the proficiencies and qualifications required of third-party consultants doing work related to that species.

PGC staff indicated that few difficulties arise in connection with the hiring of third-party consultants, as most members of the regulated community are familiar with the process and requirements and know who to hire.

Virginia

In cases where additional survey work is required and the applicant does not already have a qualified consultant, staff indicated that DWR can supply a list of approved surveyors and taxonomic experts for species that get frequent hits in the review process. DWR refers to approved surveyor lists maintained by USFWS and, in addition, maintains its own list of state-permitted firms and scientists with whom the agency has previously worked.

Relationships with the regulated community

Complaints from members of Connecticut's regulated community, especially about review timelines, were among the factors that precipitated this inquiry. Despite strong overall rapport between program staff and users, difficulties were reflected in the interviews DJ Case conducted. Though the survey fielded as part of this inquiry showed high levels of satisfaction with NDDB staff, it showed dissatisfaction with specific aspects of the review process.

In interviews with other state agencies, DJ Case asked staff about the quality of these relationships and the frequency and type of complaints made by the regulated community. One limitation of this inquiry is that DJ Case only spoke with one or two staff members from each agency and did not speak with any members of the regulated community in these states.

In New Jersey, staff indicated that — as in Connecticut — some members of the regulated community make complaints about how long the process can take.

In New York, most complaints are similarly focused on the timeframe for project reviews, which can take months or years. Discontent has diminished, however, as pre-application meetings, combined with a growing network of qualified consultants familiar with the process, have helped applicants submit more complete applications.

In states where listed-species reviews have limited effects on private development, the regulated community generally has few complaints.

- In Arizona, no state law requires consultation regarding potential project impacts on sensitive species. If a review is conducted, all recommended conservation measures are voluntary unless a permitting or regulatory authority opts to require them.

- In Ohio, changes made a decade ago — including the determination that the state does not have jurisdiction over habitat — shortened review times and turned comments into recommendations rather than directives.

- In Georgia, where state law significantly limits the extent to which the presence of listed species can impede private development, the review process generally provides project proponents with significant flexibility and standard, anticipated comments. As a rule, project proponents make few complaints. The Wildlife Resources Division does get attention from proponents when review letters incorporate stronger language than usual or recommend alternative siting for a project. Because Georgia's review system is so flexible, the expectation is that biologists will make things easy for developers.

- In Oregon, staff reported that environmental review processes are widely expected. Combined with the fact that ODFW does not have regulatory authority in most cases, this contributes to a high level of acceptance of reviews on the part of the regulated community. It is in cases where habitation mitigation is required — due to ODFW authority or a permitting agency's decision to include ODFW recommendations in permit conditions — that applicant distress can arise. The state's Fish and Wildlife Habitat Mitigation Policy standards are among the most rigorous in the country and can result in substantial financial obligations for applicants. These obligations are familiar and anticipated for certain sectors (e.g., renewable energy development). For applicants who are not as well-funded (e.g., local housing developers), the obligations can come as a surprise, have a significant impact, and sometimes lead to political pushback.

In states where strong collaborative relationships with the regulated community have been built, conflicts and complaints are minimal, despite fairly rigorous conservation requirements.

- In Pennsylvania, many state permits require applicants to submit projects for review, and most review comments end up being included in permits as requirements, conditions, or recommended best management practices. As result, reviews serve a regulatory function. Yet staff reported hearing very few complaints from the regulated community. Staff attributed this to long-term positive relationships with the community, the community's familiarity with the review process, and the agency's focus on designing conservation measures that allow projects to proceed without impacting sensitive species, seeking workarounds rather than blocking projects entirely.

- Similarly, in Virginia, reviews are common and permitting agencies frequently incorporate review comments and measures into permit language. Yet staff reported very few complaints from the regulated community. Staff attributed this to strong relationships with key community members and a history of collaboration, mutual trust, and proactive engagement. As staff see it, the agency's focus on making every effort to engage, listen, consider options, and be practical and helpful — while still returning the most protective measures and recommendations possible to avoid and minimize impacts — has been essential to that relationship- and trust-building. Though the agency team is not focused on stopping projects, staff said that proponents do occasionally abandon projects due to restrictions or conditions.

- In Massachusetts, the relationship between the review program and the regulated community was difficult two decades ago (see *"Cross-state highlights"*). As a result of regulatory changes, increased staff capacity, and the establishment of a pre-filing consultation process to streamline reviews and proactively address concerns regarding larger projects, the dynamic has improved dramatically. Complaints and concerns about inefficiencies and inconsistencies have largely vanished. Today, complaints are rare and tend to come from small-scale developers and landowners who are surprised that the review process exists and that it might limit what they can do with their property.

These findings suggest two pathways for minimizing discontent within the regulated community: (1) significantly limit the degree to which listed-species reviews can impede development, especially on private property, or (2) build strong relationships between the program and the regulated community, characterized by collaborative, proactive, solutions-oriented engagement and built on a foundation of clarity, consistency, and predictability.

RECOMMENDATIONS

Context and objectives

As described in Governor's Bill HB 6868, this inquiry emerged out of concerns about — and a desire to increase — the "efficiency, transparency, and predictability" of NDDB reviews. In the context of environmental review processes across states, **efficiency** generally manifests as short timeframes and straightforward processes, **transparency** as clearly understood communication, mapping, and decision-making criteria, and **predictability** as foreseeable outcomes and consistency across timelines, processes, and data.

DJ Case's research findings indicate that the regulated community is more satisfied than dissatisfied with the NDDB program overall. The community is especially satisfied with NDDB staff members and recognizes that they are operating with limited capacity and within the constraints of a suboptimal system. Yet some members of the regulated community do have concerns. Generally, discontent and dissatisfaction are focused on specific elements of the review process.

Findings also indicate that NDDB staff believe deeply in the program's mission and empathize with users' frustrations. Staff have a strong desire to improve the program both by increasing its efficacy in achieving conservation outcomes and by improving user experiences.

Given these fundamental alignments between program staff and the regulated community, the potential for mutually beneficial improvements is high.

Based on the impetus for this inquiry and on its findings, DJ Case identified twin overarching objectives for any changes to the NDDB program and its review processes:

1. Maintain and improve program efficacy in protecting Connecticut's native biological diversity, especially its most vulnerable species and ecosystems.

2. Improve the regulated community's experience of and relationship with the program, particularly in terms of efficiency, transparency, and predictability.

Achieving these objectives hinges on a complex set of interrelated factors and conditions. To create those conditions, DJ Case recommends that any changes instituted be designed to increase opportunities for all parties to be proactive, effective, and solution-oriented, and to build trust and increase collaboration, both within CT DEEP and between NDDB and the regulated community.

Ten recommendations

Though the regulated community is generally satisfied with the NDDB program, there is room for improvement in specific areas. To address these areas, DJ Case offers ten recommendations for CT DEEP's consideration, presented below in rough priority order.

Toward the top of the list are suggestions that — reflecting ways other states have found enhanced success, as well as concerns and priorities shared by NDDB users and staff — seem most likely to help CT DEEP maintain and improve conservation efficacy and enhance the regulated community's experience of and relationship with the program.

Toward the bottom are more technical fixes that, while potentially helpful, seem less likely to resolve the primary challenges identified.

The recommendations are not listed in proposed order of implementation. Several would likely entail sustained multi-year efforts.

Nor are the recommendations entirely independent of one another. Several would hinge on others. Prioritizing early consultation, for example, would likely require added staff capacity. DJ Case therefore recommends that changes to the NDDB program be designed as a unified set, rather than piecemeal. Across all states considered in this inquiry, it is clear that programs' conservation efficacy and relationships with the regulated community are shaped by systems, not single factors. Improving them meaningfully requires a systemic approach.

> It is vital that members of program staff and members of the regulated community both be engaged in considering and designing solutions.

DJ Case also recommends that NDDB staff and users both be engaged in considering any changes or solutions. Their insight and buy-in will be crucial to the effective design and ultimate success of such changes. This inquiry and report represent a valuable first step, but only one step, in engaging both staff and users in the process.

This inquiry did not encompass feasibility studies. CT DEEP and other state entities will presumably need to consider various barriers to implementation of recommendations (e.g., fiscal and statutory constraints).

1. Invest in mapping

Maps and their underlying data layers are essential tools for the regulated community and review staff alike. Based on analyses of Connecticut interview and survey data as well as review processes across multiple states, DJ Case recommends that CT DEEP:

- Invest in comprehensive mapping of listed plant species and critical habitats.
- Increase alignment between the maps and associated pre-application screening tools available to the regulated community and the maps, data, and tools used in reviews.
- Set a predictable schedule for relatively infrequent changes to maps.

These three measures could shorten review times (efficiency), clarify decision-making (transparency), and make it easier to anticipate outcomes (predictability). Such an investment would presumably require more robust staff and/or contractor capacity, at least in the short term.

These measures would specifically address several concerns noted by NDDB staff in interviews and by users in interviews and survey responses: (1) the uncertainty associated with significant data gaps, (2) the inability to conduct broad, strategic planning and prioritization for the conservation of vulnerable species, (3) surprises that can result from differences between the data layers used by screening/blob maps and those used by the Site Assessment tool and the automated determination process, or from species being added to the list later in the process.

In addition, these measures could reduce the frequency with which project proponents are required to do site surveys. If a reduction in applicant surveys is achieved, such surveys, which can involve considerable time and expense, could serve more focused, limited purposes, rather than serving as a proxy for research the state has not done.

NDDB staff noted that limited access to private land, especially to inform mapping of plant species, will likely be a barrier to comprehensive mapping in Connecticut, and that modeling cannot entirely replace field mapping. (In Massachusetts, in its effort to map Priority Habitat on private lands, NHESP has typically reached out to landowners for permission to conduct surveys. Even without permission, NHESP has the authority to do

survey work on private lands where necessary, though this authority is exercised sparingly. In some cases, NHESP augments field mapping with habitat modeling, though not without verified species observations and parallel assessment of aerial imagery. In general, NHESP uses modeling to inform where surveys are conducted.)

Comprehensive mapping and aligned screening tools could be based on a variety of different data sources and frameworks (e.g., priority habitat areas, landscape-scale ecoregions, species occurrence records and associated buffer distances), which already inform NDDB's current data layers for animal species. In creating and updating such maps, CT DEEP could make decisions based on explicit conservation priorities and likely benefits and could, for example, deprioritize highly fragmented areas.

2. Prioritize early consultation

Early collaborative engagement between project proponents and review staff can provide clarity (transparency), shorten formal review times (efficiency), and reduce uncertainty while enabling more effective planning and decision-making (predictability). Before proponents have defined and committed to details, high-level conversations about large-scale projects can help expedite and streamline the environmental review process by yielding increased clarity about the project and site, highlighting potential challenges, and mapping likely requirements and outcomes, thereby reducing surprises for everyone. Such consultations can also improve staff-user relationships by increasing direct, collaborative engagement and coordination among all parties.

DJ Case recommends that CT DEEP establish—and encourage applicants and their consultants to engage in—a clearly defined yet informal pre-application consultation process for large, complex projects. This would be more feasible if comprehensive mapping data are available and would presumably require additional staff.

Given that some users (e.g., DOT, Eversource) already have regular meetings with NDDB staff, this may be a matter of building on existing practices, rather than creating something entirely new. In interviews, users who said they met regularly with NDDB staff described those meetings as very helpful. Related, NDDB staff members spoke of wanting more opportunities to work collaboratively with users and, more broadly, wanting to use the "carrot" of collaboration rather than the "stick" of regulation.

Of survey respondents, 68 percent agreed that virtual meetings with NDDB staff to discuss a project or site would make the process easier for applicants; 60 percent agreed that site visits with NDDB staff would do so. Nearly half (45%) indicated that they thought more proactive engagement/collaboration would make the program more effective at achieving its purpose.

NDDB staff anticipate that specific challenges would arise in trying to establish a more robust pre-application consultation process (e.g., difficulties and inefficiencies in administrative management and prioritization; loss of the efficiency gained by automated reviews).

3. Streamline additional reviews for recurrent activities

Across states, the frequent and often recurrent work conducted by transportation departments and utility companies accounts for a significant portion of annual vegetation management and ground disturbance. DJ Case recommends that CT DEEP take steps to further streamline review of such work and actions, beyond the automated determination system and the standard protocols NDDB has already established with DOT for specific situations.

As discussed in this report, other states have created a variety of mechanisms to streamline such reviews, including MOUs, exemptions, annual plans, multi-year blanket permits, interagency agreements, and reviewer positions dedicated to specific sectors. When thoughtfully and collaboratively crafted, these mechanisms can make reviews quicker (efficiency) and outcomes easier to anticipate (predictability), benefiting both applicants and review staff, with minimal adverse conservation impacts.

Such measures would likely require additional staff time to set up at first but would free up staff capacity once in place.

In interviews, several members of the regulated community said they would welcome streamlined processes for recurrent activities. Of those who responded to the survey, 80 percent agreed that standardized review processes for recurrent activities would make the NDDB review process easier for applicants.

4. Improve the applicant survey system

Across states, there is great variability in how frequently applicants are required to hire qualified experts to conduct site surveys. There is also great variability in how much assistance is provided to applicants in identifying qualified experts.

DJ Case recommends that CT DEEP take steps to reduce the frequency with which applicants must complete site surveys. Comprehensive mapping will presumably be key to achieving this end, given that staff and users alike noted that gaps in current data, especially for plant species, are a driving factor in NDDB's frequent requests for surveys.

DJ Case also recommends that CT DEEP increase the assistance provided to applicants in identifying qualified experts. From among approaches taken by comparison states, CT DEEP could proactively and consistently (1) provide applicants with the names of experts who have submitted acceptable reports for similar work in the past, or (2) provide details on the proficiencies and qualifications required for work on specific taxa and/or species.

Finally, DJ Case recommends that CT DEEP establish a clear process by which experts can become eligible to conduct surveys related to specific taxa. Possibilities include formal processes to get added to state-approved lists (as in Ohio for herpetologists, mussel surveyors, and bat surveyors) or federal lists (as in New Jersey for bog turtle surveyors), as well as informal, gradual processes that allow staff to get acquainted with consultants' skillsets (as in Massachusetts). Though NDDB staff note that they already employ an informal, gradual process, some external consultants assert that the program sometimes rejects qualified experts and does not provide a path to eligibility. As is done in several other states considered here, Connecticut could establish such processes as a complement to the current approach of requiring applicants to submit consultants' CVs for review. Establishing such processes would presumably require additional staff capacity, at least in the short term.

Reducing the frequency with which applicants must complete site surveys, helping applicants identify qualified experts, and establishing ways for consultants to become eligible to do so could save time and effort (efficiency), clarify criteria (transparency), and better define paths forward for applicants and consultants alike (predictability).

Of survey respondents in Connecticut, only a quarter indicated that finding qualified taxonomic experts is easy. Two thirds (67%) of respondents agreed that it would help to have a list of biologists and botanists who have been approved for past reviews. More than half (59%) agreed that it would help to have a clearly defined process for experts to get approved.

5. Increase staff capacity

A complex set of factors influences the number of core staff members needed to effectively achieve a review program's goals. These factors include the program's responsibilities (e.g., volume and complexity of project reviews, non-review programmatic responsibilities) and resources (e.g., map data, availability of other agency staff to assist with reviews).

Though analysis of NDDB staff capacity is beyond the scope of this inquiry, DJ Case offers these data points for CT DEEP's consideration:

- In interviews, staff and users alike expressed the view that the NDDB program is understaffed and that increased overall capacity would enable greater efficacy, more proactive approaches, quicker reviews, and more efficient workflows. Nearly half of survey respondents (45%) indicated that they thought an increase in NDDB staff capacity would make the program more effective at achieving its purpose.

- In interviews, staff and users alike indicated that specific additional expertise is needed on the NDDB team, particularly an aquatic botanist. Nearly two-thirds of survey respondents (63%) agreed that additional staff with specific biological expertise would make the review process easier for applicants.

- In interviews, staff noted that the program has limited data management and mapping capacity.

Implementation of other recommendations would have varying effects on staff capacity needs. New and enhanced mapping efforts, for example, would likely require substantial staff and/or consultant time in the short term but could yield efficiency gains and other benefits in the long term. Streamlining for recurrent activities would likewise require frontloaded staff time but could significantly improve efficiencies thereafter.

DJ Case encourages CT DEEP to increase NDDB staff capacity overall. Sufficient capacity is a key ingredient necessary to achieve the twin objectives of effective conservation and improved experience for the regulated community. DJ Case also encourages CT DEEP to add an aquatic botanist, as well as increased data management and mapping expertise, to the NDDB team.

One way to fund additional staff and related solutions (e.g., conducting comprehensive mapping, prioritizing early consultations, ensuring initial responses within a set timeline) would be to establish review fees. Across states, it is rare for project proponents to pay fees specifically linked to listed-species reviews, yet such fees were a key part of the deal struck in Massachusetts two decades ago. There, fees have funded a significant increase in review staff capacity, a key factor in reducing uncertainty and unpredictability. NHESP fees have not increased in many years and no longer fund the number of staff positions they once did.

DJ Case encourages CT DEEP to discuss the possibility of NDDB-specific fees with the regulated community. If Connecticut's regulated community wants to see the kind of changes that Massachusetts instituted, members of the community may need to help foot the bill.

6. Make ezFile easy

Staff and user interviews, combined with survey results, indicate that the ezFile system is often frustrating for newer applicants. The system is clunky and outdated and sometimes quits in the middle of a filing. New applicants may get confused about setting up an initial "subscriber agreement." Or they may complete the review request, fail to hit the final "submit" button, and wait for a month or more before following up, thinking their request has been in the queue.

On the other hand, more experienced users have little trouble navigating it.

Though resolving ezFile's technical problems may not be essential for everyone, overhauling the system's infrastructure would clearly improve new users' experiences. Making technical improvements — or adding staff capacity dedicated to providing technical support, which 65 percent of survey respondents said would make the review process easier — would also enable a senior team member to reallocate significant time now dedicated to supporting new applicants. The ezFile system, managed by DAS/BITS, is outside of CT DEEP's purview.

7. Set initial response timelines

Across states, timelines are handled in disparate ways. In some cases, review programs set their own targets. In others, timelines are set by statute or interagency agreement. In states where mandated timelines are in effect, they typically apply to initial responses or determinations of whether an application or request is complete.

Across states, firm timelines for initial responses do not necessarily indicate that the overall review process will be completed within that (or any) set timeframe.

In interviews, NDDB staff expressed concern that — given current gaps in mapping data, especially for plants — mandated overall timelines could make it impossible to collect critical survey data, especially for species that can be effectively studied only at specific times of year. Based on their descriptions of current workload, it seemed apparent that even mandated timelines for initial responses could result in inadequate preliminary reviews.

In interviews, users overwhelmingly cited the unpredictability of timeframes for completion of reviews and determinations as a significant challenge. Several expressed the desire for definite overall timeframes. Several also indicated that initial response times were variable.

Of survey respondents, 85 percent agreed (and 45 percent strongly agreed) that having a definite timeframe for an initial response would make the review process easier for applicants.

Setting a timeline for an initial response from NDDB might have little effect on the overall review timeline. It would, however, provide Connecticut's regulated community with a valued degree of predictability. Setting such a timeline could have adverse impacts on conservation outcomes if other changes (e.g., an increase in staff capacity) are not implemented.

8. Adjust validity durations

In interviews, several members of the regulated community mentioned that it would help to lengthen the periods for which preliminary and final determinations are valid. At present, final determinations are valid for two years. DJ Case suggests that CT DEEP consider making such adjustments to give applicants longer (1) to assemble all required documentation following a preliminary determination and (2) to complete all other permitting processes following a final determination. NDDB staff expressed concern that lengthening validity durations would reduce the efficacy of listed species protections, as information provided at the time of determination may become outdated.

9. Enhance communication and information resources

Based on survey responses and interviews with staff and users in Connecticut, as well as with staff in other state agencies, DJ Case recommends that CT DEEP improve communications with and information provided to the regulated community. In addition to making it easier to navigate and find answers on the website, DJ Case suggests that CT DEEP develop guidance documents for use by NDDB applicants and their consultants, covering these topics:

1. Listed species and relevant conservation measures.

2. Listed species and relevant survey methodologies.

3. Expectations for habitat surveys, species surveys, and mitigation plans.

4. Proficiencies and qualifications required of third-party consultants doing work on particular taxa or species.

If prominently featured on the NDDB website and regularly provided to applicants, such resources could provide greater clarity, especially for newer users.

As a first step in improving communication and as part of the 20BY26 Initiative, CT DEEP tasked DJ Case with reviewing key content and recommending revisions to increase clarity.

The NDDB FAQs page was reorganized in 2025 and additional improvements are underway.

DJ Case suggested detailed edits to core NDDB webpages that provide guidance on the review process: Requests for NDDB Environmental Reviews and NDDB Maps. DJ Case also recommended an organizational schema for the NDDB FAQs page to optimize navigation.

In addition, DJ Case reviewed ten letters from NDDB staff to applicants, including preliminary assessments and final determinations. To make letters more understandable, especially for applicants who are less familiar with the NDDB review process, DJ Case recommended reorganizing letter content, combining (1) a succinct main letter summarizing central ideas and messages with (2) an attachments section where details can be spelled out. To illustrate the approach in action, DJ Case provided a proposed revision of a determination letter.

10. Explore mitigation banking

In interviews, several NDDB staff expressed interest in integrating a mitigation banking system into the program. Across the nine other review programs considered in this inquiry, staff indicated that such systems are used sparingly. In cases where mitigation banking is used in connection with listed-species reviews, staff reported that it is limited to particular species, projects of particular types and sizes, and/or collaborations with particular partners.

DJ Case recommends that CT DEEP explore mitigation banking as potentially useful tool, though it appears unlikely to be a central factor in the evolution of the NDDB program.
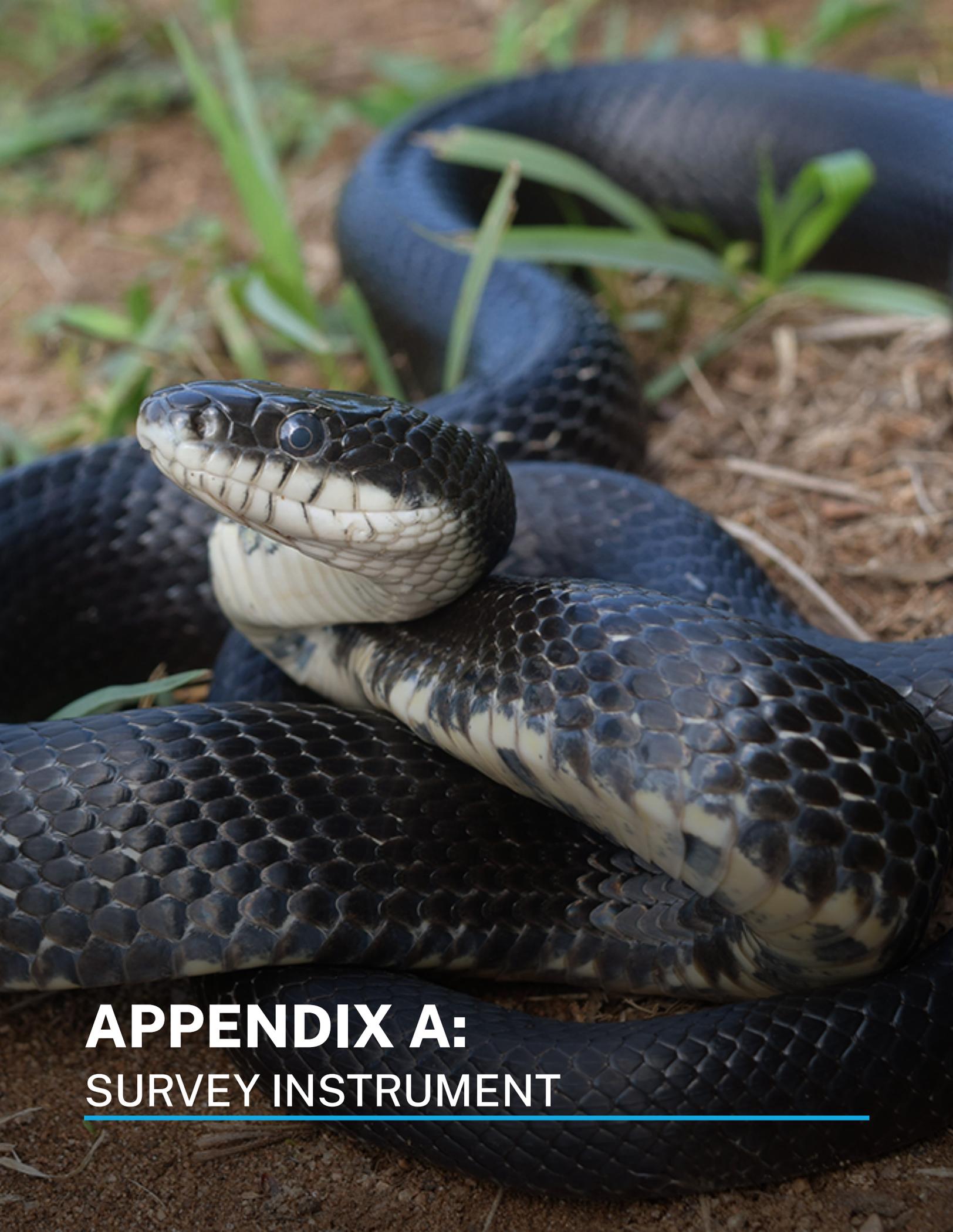
APPENDIX A:
SURVEY INSTRUMENT

Connecticut Natural Diversity Data Base (NDDB) Survey

The Connecticut Department of Energy and Environmental Protection (CT DEEP)—in collaboration with DJ Case & Associates—is conducting an assessment of the state's Natural Diversity Data Base (NDDB) program for the protection of vulnerable species. This survey is part of that assessment.

Your responses will provide CT DEEP with valuable insight into your perspectives on and experiences with the NDDB program. All questions are optional.

If you want to verify the legitimacy of this survey, please contact [CT NDDB staff member (email.address@ct.gov)].

If you encounter a technical difficulty while completing the survey, please contact [DJ Case staff member (email.address@djcase.com)].

All responses to this survey will be confidential, and no identifying information will be linked to your responses.
By clicking on the button below, you indicate your voluntary agreement to participate in this online survey.
- o   I consent
- o   I do not consent

Estimated time to complete survey: 15 minutes

CT DEEP and the Natural Diversity Data Base (NDDB) Program

Q1.   How familiar are you with the Connecticut Department of Energy and Environmental Protection (CT DEEP)?

- ○ Not at all familiar
- ○ Somewhat familiar
- ○ Very familiar

Q2.   How strongly do you agree with the following statements about the Connecticut Department of Energy and Environmental Protection (CT DEEP)?

	Strongly disagree	Disagree	Neutral	Agree	Strongly agree	Don't Know
CT DEEP should conserve and protect rare and endangered animals.	○	○	○	○	○	○
CT DEEP should conserve and protect rare and endangered plants.	○	○	○	○	○	○
CT DEEP should designate "natural areas" to protect critical habitats for rare and endangered species.	○	○	○	○	○	○
CT DEEP should prevent the spread of invasive species (e.g., hydrilla, zebra mussels).	○	○	○	○	○	○

Q3.   How strongly do you agree with the following statement?
CT DEEP currently does a good job communicating conservation priorities for state-listed species and ecological communities.

○ Strongly disagree
○ Disagree
○ Neutral
○ Agree
○ Strongly agree
○ Don't know

Q4.   The purpose of CT DEEP's Natural Diversity Data Base (NDDB) program is to protect Connecticut's native biological diversity, with emphasis on the state's most vulnerable species and ecosystems.

How strongly do you agree with the following statement?
CT DEEP's NDDB program is effective at achieving its purpose.

○ Strongly disagree
○ Disagree
○ Neutral
○ Agree
○ Strongly agree
○ Don't know

Q5.   In what ways do you think the NDDB program is most effective at achieving its purpose? In what ways do you think the program falls short or results in outcomes that don't align with its purpose?

Q6.   Which, if any, of these do you think would make the NDDB program more effective at achieving its purpose? Please select all that apply.

○ Increased landscape-scale mapping of listed species so more is known before an application is filed
○ More proactive engagement/collaboration by NDDB staff (e.g., with applicants, with conservation organizations)
○ An increase in NDDB staff/time/capacity
○ Follow-up by NDDB staff to confirm implementation of conservation measures
○ A mitigation banking system
○ Land acquisitions by the state to conserve and protect key habitats
○ Other: _____
○ None of the above [exclusive response]
○ Don't know [exclusive response]

NDDB Environmental Review Process

The NDDB environmental review process is designed to assess and mitigate the potential impacts of projects and other activities on state-listed species.

Q7.   Approximately how many times have you applied for or participated in an NDDB project review?

○ Never [skip to end of section]
○ 1 to 5 times total
○ 6 to 10 times total
○ 11 to 20 times total
○ More than 20 times total

Q8.   In what capacity do you typically apply for or participate in NDDB project reviews?
        Please select one.

        ○ As a CT state agency employee or contractor
        ○ As a municipal official, employee, or contractor
        ○ As a utility company employee or contractor (e.g., electricity distribution)
        ○ As a renewable energy development company employee or contractor
        ○ As a commercial or residential development company employee or contractor
        ○ As an engineering consultant
        ○ As a legal consultant
        ○ As a pesticide applicator
        ○ As a residential property owner
        ○ As a taxonomic expert hired to conduct NDDB surveys
        ○ Other: _____

Q9.   Based on your experience with the NDDB environmental review process, how would
        you rate your satisfaction with each of the following?

	Very Dissatisfied	Slightly Dissatisfied	Neutral	Slightly Satisfied	Very Satisfied	Not Applicable
Predictability of the process	○	○	○	○	○	○
Efficiency of the process	○	○	○	○	○	○
Transparency of the process	○	○	○	○	○	○
Consistency of process from one project or filing to the next	○	○	○	○	○	○
Support you have received from CT DEEP's NDDB staff	○	○	○	○	○	○
Overall experience with the process	○	○	○	○	○	○

Q10.   What factors most contribute to your level of satisfaction with the review process?

Q11.   How would you rate the following aspects of the NDDB environmental review process?

	Very Difficult	Difficult	Neutral	Easy	Very Easy	Not Applicable
Application/filing process	○	○	○	○	○	○
Understanding requests for additional information	○	○	○	○	○	○
Understanding what to do with preliminary determinations	○	○	○	○	○	○
Finding qualified taxonomic experts if required	○	○	○	○	○	○
Developing mitigation plans	○	○	○	○	○	○
Preparing incidental take reports	○	○	○	○	○	○

Q12.   How strongly do you agree that each of the following would make the NDDB environmental review process easier for applicants?

_____ *would make the NDDB environmental review process easier for applicants.*

	Strongly disagree	Disagree	Neutral	Agree	Strongly agree	Don't Know
Standardized review processes for recurrent activities (e.g., right-of-way maintenance)	○	○	○	○	○	○
Having a definite timeframe for an initial response from NDDB	○	○	○	○	○	○
Virtual meetings with NDDB staff to discuss the project/site	○	○	○	○	○	○
Field/site visits with NDDB staff to discuss the project	○	○	○	○	○	○
Additional NDDB staff with specific biological expertise	○	○	○	○	○	○
Additional NDDB staff capacity to support the ezFile process	○	○	○	○	○	○

Q13.   How strongly do you agree with the following statement?
The NDDB environmental review process makes it harder for me (and my organization and/or clients, if applicable) to achieve key goals.

○ Strongly disagree
○ Disagree
○ Neutral
○ Agree
○ Strongly agree
○ Don't know

Q14.   Are there ways you think the NDDB program or review process could be improved to help the program better achieve its goals while also making it easier for you (and your organization and/or clients, if applicable) to achieve key goals?

NDDB Website and Information Resources

Q15.   Based on your experience with CT DEEP's NDDB website (not the ezFile portal), how would you rate your satisfaction with the following?

	Very Dissatisfied	Slightly Dissatisfied	Neutral	Slightly Satisfied	Very Satisfied	Not Applicable
Ease of understanding website content overall	○	○	○	○	○	○
Clarity provided on the website about the steps in the review process	○	○	○	○	○	○
Ease of finding answers to questions on the website	○	○	○	○	○	○
User-friendliness of the website	○	○	○	○	○	○
Ease of navigating the website	○	○	○	○	○	○
Usefulness of the pre-screening ("blob") maps	○	○	○	○	○	○

Q16.   What additional NDDB website resources do you think would be useful to applicants?

Q17.   What other thoughts or comments, if any, would you like to share about the NDDB website and information resources?

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NDDB Notifications, Letters, and Measures

Q18.   If a project intersects with species eligible for automation, the NDDB ezFile system returns automatic determination letters.

Have you received an **automatic determination letter**?

○ Yes
○ No [if no, skip next question]

Q19.   Based on your experience with **automatic determination letters**, how would you rate your satisfaction with each of the following?

	Very Dissatisfied	Slightly Dissatisfied	Neutral	Slightly Satisfied	Very Satisfied	Not Applicable
Predictability of the process	○	○	○	○	○	○
Efficiency of the process	○	○	○	○	○	○
Overall clarity of letters	○	○	○	○	○	○
Transparency of reasoning behind letters and the measures outlined	○	○	○	○	○	○
Clarity about next steps	○	○	○	○	○	○
Clarity in description of measures to be taken	○	○	○	○	○	○
Feasibility of the conservation measures required	○	○	○	○	○	○
Effectiveness of required measures in achieving conservation outcomes	○	○	○	○	○	○

Q20.   In cases where NDDB staff review the request, applicants receive a biologist/botanist review letter. Have you received a **biologist/botanist review letter**?

○ Yes
○ No [if no, skip next question]

Q21. Based on your experience with biologist/botanist review letters, how would you rate your satisfaction with each of the following?

	Very Dissatisfied	Slightly Dissatisfied	Neutral	Slightly Satisfied	Very Satisfied	Not Applicable
Predictability of the process	○	○	○	○	○	○
Efficiency of the process	○	○	○	○	○	○
Overall clarity of letters	○	○	○	○	○	○
Transparency of reasoning behind letters and the measures outlined	○	○	○	○	○	○
Clarity about next steps	○	○	○	○	○	○
Clarity in description of measures to be taken	○	○	○	○	○	○
Feasibility of the conservation measures required	○	○	○	○	○	○
Effectiveness of required measures in achieving conservation outcomes	○	○	○	○	○	○

Q22. What thoughts, if any, would you like to share about NDDB notifications, letters, and conservation measures?

Finding and Using Qualified Taxonomic Experts for Surveys

For some project reviews, NDDB requires applicants to hire a qualified taxonomic expert (e.g., biologist, botanist) to conduct field surveys.

Q23. How strongly do you agree with each of the following statements about finding and using qualified taxonomic experts for NDDB reviews?

	Strongly disagree	Disagree	Neutral	Agree	Strongly agree	Don't Know
The current system works well.	○	○	○	○	○	○
It would help to have a checklist of criteria for selecting qualified taxonomic experts.	○	○	○	○	○	○
It would help to have a clearly defined process for experts to get approved (by species type).	○	○	○	○	○	○
It would help to have a list of biologists and botanists who have been approved for past reviews.	○	○	○	○	○	○

Q24. What thoughts or comments would you like to share about finding and using qualified taxonomic experts for NDDB reviews?

NDDB staff

If you have interacted with NDDB staff, please answer the following questions.

Q25. Based on your experience corresponding or talking with NDDB staff, how would you rate your satisfaction with the following?

	Very Dissatisfied	Slightly Dissatisfied	Neutral	Slightly Satisfied	Very Satisfied	Not Applicable
Staff willingness to answer questions	○	○	○	○	○	○
Timeliness of staff responses	○	○	○	○	○	○
Staff helpfulness	○	○	○	○	○	○
Staff knowledge	○	○	○	○	○	○
Staff willingness to listen to concerns	○	○	○	○	○	○
Staff willingness to work collaboratively	○	○	○	○	○	○
Clarity of staff communication	○	○	○	○	○	○

Q26. What other thoughts or comments, if any, would you like to share about the NDDB staff?

Additional comments

Q27.   What other thoughts or comments, if any, would you like to share about CT DEEP's NDDB Program overall?

Thank You [page appeared after submission]

Thank you for assisting the Connecticut Department of Energy and Environmental Protection by sharing your perspectives on and experiences with the Natural Diversity Data Base program.
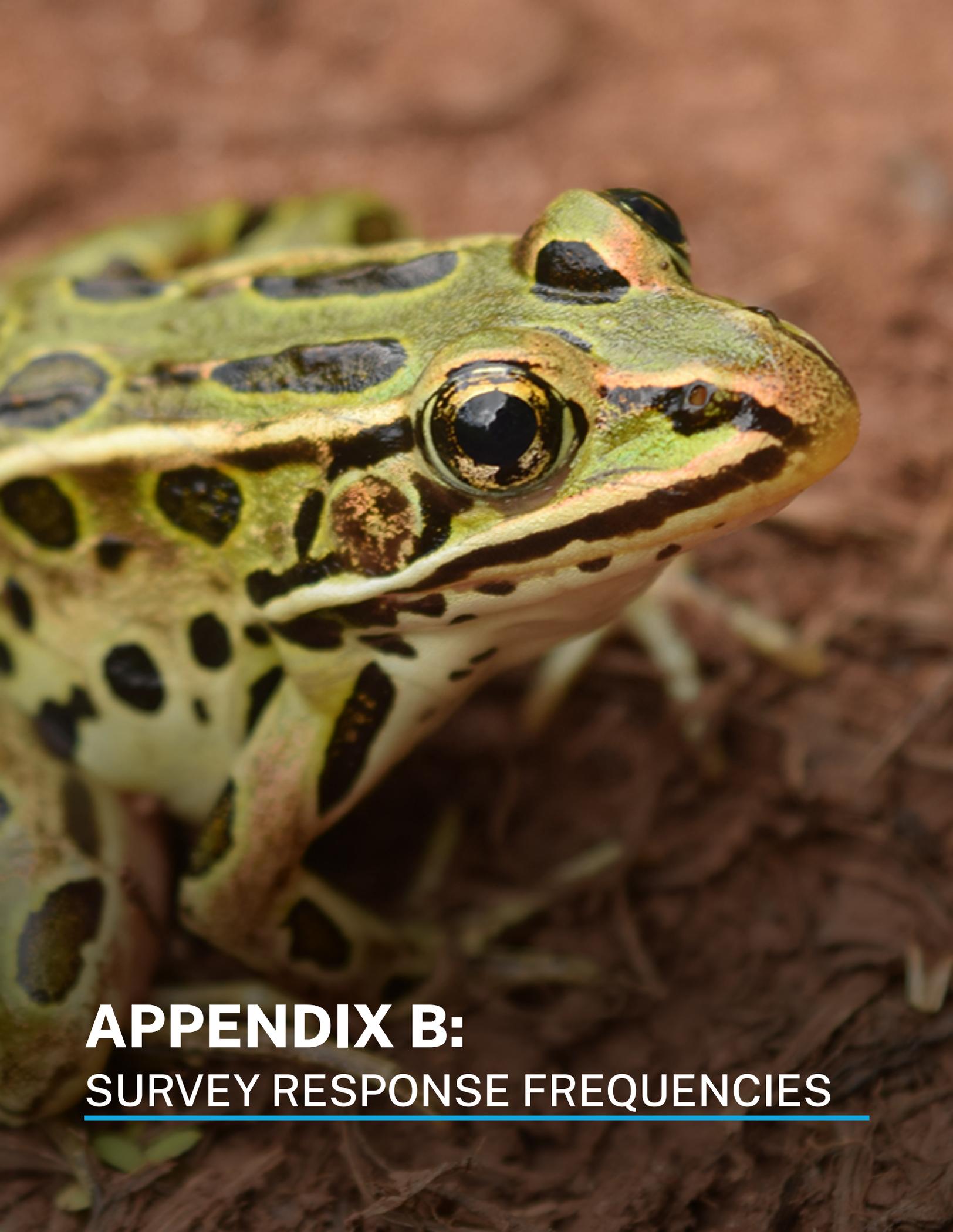
APPENDIX B:
SURVEY RESPONSE FREQUENCIES

Response frequencies were calculated for closed-ended (i.e., multiple choice) questions using IBM SPSS 29. Where they appear, "valid percent" columns should be referenced, as they exclude skipped responses. Open-ended (i.e., text response) questions are omitted below.

Connecticut Natural Diversity Database (NDDB) Survey

CT DEEP and the Natural Diversity Data Base (NDDB) Program

Q1. How familiar are you with the Connecticut Department of Energy and Environmental Protection (CT DEEP)?

	Frequency	Percent	Valid Percent	Cumulative Percent
Not at all familiar	0	0.0	0.0	0.0
Somewhat familiar	74	30.7	30.8	30.8
Very familiar	166	68.9	69.2	100.0
Total	240	99.6	100.0	
Skipped	1	0.4		
Total	241	100.0		

Q2.   How strongly do you agree with the following statements about the Connecticut Department of Energy and Environmental Protection (CT DEEP)?

	N	Strongly disagree	Disagree	Neutral	Agree	Strongly agree	Don't Know
CT DEEP should conserve and protect rare and endangered animals.	241	5.0 (12)	0.8 (2)	5.0 (12)	23.2 (56)	64.7 (156)	1.2 (3)
CT DEEP should conserve and protect rare and endangered plants.	241	5.0 (12)	1.7 (4)	5.8 (14)	25.3 (61)	60.6 (146)	1.7 (4)
CT DEEP should designate "natural areas" to protect critical habitats for rare and endangered species.	241	6.2 (15)	2.5 (6)	10.0 (24)	24.9 (60)	53.9 (130)	2.5 (6)
CT DEEP should prevent the spread of invasive species (e.g., hydrilla, zebra mussels).	241	5.0 (12)	0.4 (1)	2.5 (6)	20.3 (49)	71.0 (171)	0.8 (2)

Q3. **How strongly do you agree with the following statement?**

CT DEEP currently does a good job communicating conservation priorities for state-listed species and ecological communities.

	Frequency	Percent	Valid Percent	Cumulative Percent
Strongly disagree	5	2.1	2.1	2.1
Disagree	32	13.3	13.3	15.4
Neutral	78	32.4	32.4	47.7
Agree	101	41.9	41.9	89.6
Strongly agree	19	7.9	7.9	97.5
Don't know	6	2.5	2.5	100.0
Total	241	100.0	100.0	

Q4. **The purpose of CT DEEP's Natural Diversity Data Base (NDDB) program is to protect Connecticut's native biological diversity, with emphasis on the state's most vulnerable species and ecosystems.**

How strongly do you agree with the following statement?
CT DEEP's NDDB program is effective at achieving its purpose.

	Frequency	Percent	Valid Percent	Cumulative Percent
Strongly disagree	3	1.2	1.3	1.3
Disagree	19	7.9	7.9	9.2
Neutral	59	24.5	24.7	33.9
Agree	119	49.4	49.8	83.7
Strongly agree	25	10.4	10.5	94.1
Don't know	14	5.8	5.9	100.0
Total	239	99.2	100.0	
Skipped	2	0.8		
Total	241	100.0		

Q6. **Which, if any, of these do you think would make the NDDB program more effective at achieving its purpose? Please select all that apply.**

Statement	Frequency	Valid Percent
Increased landscape-scale mapping of listed species so more is known before an application is filed	138	57.3
More proactive engagement/collaboration by NDDB staff (e.g., with applicants, with conservation organizations)	108	44.8
An increase in NDDB staff/time/capacity	109	45.2
Follow-up by NDDB staff to confirm implementation of conservation measures	90	37.3
A mitigation banking system	68	28.2
Land acquisitions by the state to conserve and protect key habitats	120	49.8
Other: (Text)	30	12.4
None of the above	7	2.9
Don't know	20	8.3

Note: Respondents could choose multiple options; therefore, percentages do not sum to 100 percent.

NDDB Environmental Review Process

The NDDB environmental review process is designed to assess and mitigate the potential impacts of projects and other activities on state-listed species.

Q7. **Approximately how many times have you applied for or participated in an NDDB project review?**

		Frequency	Percent	Valid Percent	Cumulative Percent
	Never	4	1.7	1.7	1.7
	1 to 5 times total	87	36.1	36.3	37.9
	6 to 10 times total	38	15.8	15.8	53.8
	11 to 20 times total	30	12.4	12.5	66.3
	More than 20 times total	81	33.6	33.8	100.0
	Total	240	99.6	100.0	
Skipped		1	0.4		
Total		241	100.0		

Q8. **In what capacity do you typically apply for or participate in NDDB project reviews? Please select one.**

	Frequency	Percent	Valid Percent	Cumulative Percent
As a CT state agency employee or contractor	32	13.3	13.5	13.5
As a municipal official, employee, or contractor	38	15.8	16.0	29.5
As a utility company employee or contractor (e.g., energy, water, communications)	15	6.2	6.3	35.9
As a renewable energy development company employee or contractor	6	2.5	2.5	38.4
As a commercial or residential development company employee or contractor	9	3.7	3.8	42.2
As an engineering consultant	81	33.6	34.2	76.4
As a legal consultant	1	0.4	0.4	76.8
As a pesticide applicator	5	2.1	2.1	78.9
As a residential property owner	8	3.3	3.4	82.3
As a taxonomic expert hired to conduct NDDB surveys	3	1.2	1.3	83.5
Other (Text)	39	16.2	16.5	100.0
Total	237	98.3	100.0	
Skipped	4	1.7		
Total	241	100.0		

Q9. **Based on your experience with the NDDB environmental review process, how would you rate your satisfaction with each of the following?**

	N	Very Dissatisfied	Slightly Dissatisfied	Neutral	Slightly Satisfied	Very Satisfied	Not Applicable
Predictability of the process	237	3.4 (8)	10.1 (24)	22.4 (53)	27.8 (66)	35.9 (85)	0.4 (1)
Efficiency of the process	237	5.9 (14)	18.6 (44)	14.8 (35)	24.1 (57)	36.7 (87)	0
Transparency of the process	236	5.1 (12)	14.8 (35)	21.2 (50)	25.4 (60)	33.1 (78)	0.4 (1)
Consistency of process from one project or filing to the next	237	2.5 (6)	9.3 (22)	22.8 (54)	19.8 (47)	40.5 (96)	5.1 (12)
Support you have received from CT DEEP's NDDB staff	237	2.1 (5)	10.5 (25)	18.6 (44)	20.3 (48)	45.1 (107)	3.4 (8)
Overall experience with the process	237	3.8 (9)	11.8 (28)	19.4 (46)	32.5 (77)	32.5 (77)	0

Q11. How would you rate the following aspects of the NDDB environmental review process?

	N	Very Difficult	Difficult	Neutral	Easy	Very Easy	Not Applicable
Application/filing process	232	2.5 (6)	12.9 (30)	20.3 (47)	43.5 (101)	20.3 (47)	0.4 (1)
Understanding requests for additional information	232	1.3 (3)	10.3 (24)	31.0 (72)	36.6 (85)	15.5 (36)	5.2 (12)
Understanding what to do with preliminary determinations	231	1.3 (3)	7.8 (18)	28.6 (66)	40.3 (93)	17.7 (41)	4.3 (10)
Finding qualified taxonomic experts, if required	233	4.7 (11)	20.6 (48)	28.3 (66)	13.7 (32)	4.3 (10)	28.3 (66)
Developing mitigation plans	231	1.7 (4)	18.6 (44)	27.3 (63)	22.5 (52)	3.9 (9)	25.5 (59)
Preparing incidental take reports	230	1.3 (3)	6.5 (15)	31.7 (73)	9.1 (21)	2.2 (5)	49.1 (113)

Q12. How strongly do you agree that each of the following would make the NDDB environmental review process easier for applicants?

_____ *would make the NDDB environmental review process easier for applicants.*

	N	Strongly disagree	Disagree	Neutral	Agree	Strongly agree	Don't Know
Standardized review processes for recurrent activities (e.g., right-of-way maintenance)	223	1.8 (4)	0.4 (1)	12.1 (27)	42.6 (95)	37.2 (83)	5.8 (13)
Having a definite timeframe for an initial response from NDDB	227	1.8 (4)	0.4 (1)	10.1 (23)	39.2 (89)	45.8 (104)	2.6 (6)
Virtual meetings with NDDB staff to discuss the project/site	226	1.3 (3)	4.0 (9)	21.7 (49)	40.3 (91)	27.9 (63)	4.9 (11)
Field/site visits with NDDB staff to discuss the project	225	2.7 (6)	1.8 (4)	30.7 (69)	34.7 (78)	25.3 (57)	4.9 (11)
Additional NDDB staff with specific biological expertise	225	2.7 (6)	1.8 (4)	24.0 (54)	33.3 (75)	29.8 (67)	8.4 (19)
Additional NDDB staff capacity to support the ezFile process	227	2.6 (6)	2.2 (5)	20.7 (47)	34.8 (79)	30.4 (69)	9.3 (21)

Q13. How strongly do you agree with the following statement?
The NDDB environmental review process makes it harder for me (and my organization and/or clients, if applicable) to achieve key goals.

	Frequency	Percent	Valid Percent	Cumulative Percent
Strongly disagree	17	7.1	7.4	7.3
Disagree	69	28.6	29.7	37.1
Neutral	74	30.7	31.9	69.0
Agree	44	18.3	19.4	88.4
Strongly agree	23	9.5	9.9	98.3
Don't know	4	1.7	1.7	100.0
Total	232	96.3	100.0	
Skipped	9	3.7		
Total	241	100.0		

NDDB Website and Information Resources

Q15. Based on your experience with CT DEEP's NDDB website (not the ezFile portal), how would you rate your satisfaction with the following?

	N	Very Dissatisfied	Slightly Dissatisfied	Neutral	Slightly Satisfied	Very Satisfied	Not Applicable
Ease of understanding website content overall	217	2.9 (7)	5.4 (13)	23.5 (51)	34.6 (75)	27.2 (59)	5.5 (12)
Clarity provided on the website about the steps in the review process	218	3.7 (8)	10.1 (22)	26.6 (58)	29.8 (65)	23.9 (52)	6.0 (13)
Ease of finding answers to questions on the website	218	4.1 (9)	11.5 (25)	30.3 (66)	30.7 (67)	16.5 (36)	6.9 (15)
User-friendliness of the website	218	6.0 (13)	11.0 (24)	26.1 (57)	30.7 (67)	20.2 (44)	6.0 (13)
Ease of navigating the website	213	5.2 (11)	10.3 (22)	26.8 (57)	31.5 (67)	21.1 (45)	5.2 (11)
Usefulness of the pre-screening ("blob") maps	216	3.7 (8)	8.8 (19)	21.3 (46)	28.7 (62)	32.4 (70)	5.1 (11)

NDDB Notifications, Letters, and Measures

Q18. **If a project intersects with species eligible for automation, the NDDB ezFile system returns automatic determination letters.**
Have you received an automatic determination letter?

		Frequency	Percent	Valid Percent	Cumulative Percent
	No	78	32.4	36.6	36.6
	Yes	135	56.0	63.4	100.0
	Total	213	88.4	100.0	
Skipped		28	11.6		
Total		241	100.0		

Q19. **Based on your experience with automatic determination letters, how would you rate your satisfaction with each of the following?**

	N	Very Dissatisfied	Slightly Dissatisfied	Neutral	Slightly Satisfied	Very Satisfied	Not Applicable
Predictability of the process	138	1.4 (2)	3.6 (5)	13.8 (19)	36.2 (50)	40.6 (56)	4.3 (6)
Efficiency of the process	138	1.4 (2)	1.4 (2)	8.7 (12)	30.4 (42)	53.6 (74)	4.3 (6)
Overall clarity of letters	137	0	5.8 (8)	13.9 (19)	27.0 (37)	48.9 (67)	4.4 (6)
Transparency of reasoning behind letters and the measures outlined	138	0.7 (1)	2.2 (3)	21.7 (30)	29 (40)	39.1 (54)	7.2 (10)
Clarity about next steps	138	1.4 (2)	8.7 (12)	15.2 (21)	29.7 (41)	35.5 (49)	9.4 (13)
Clarity in description of measures to be taken	137	2.2 (3)	4.4 (6)	13.1 (18)	38.7 (53)	32.8 (45)	8.8 (12)
Feasibility of the conservation measures required	139	2.9 (4)	10.8 (15)	15.1 (21)	28.1 (39)	31.7 (44)	11.5 (16)
Effectiveness of required measures in achieving conservation outcomes	136	2.2 (3)	6.6 (9)	19.9 (27)	35.3 (48)	24.3 (33)	11.8 (16)

Q20.   **In cases where NDDB staff review the request, applicants receive a biologist/botanist review letter. Have you received a biologist/botanist review letter?**

		Frequency	Percent	Valid Percent	Cumulative Percent
	No	74	30.7	34.7	34.7
	Yes	139	57.7	65.3	100.0
	Total	213	88.4	100.0	
Skipped		28	11.6		
Total		241	100.0		

Q21.   **Based on your experience with biologist/botanist review letters, how would you rate your satisfaction with each of the following?**

	N	Very Dissatisfied	Slightly Dissatisfied	Neutral	Slightly Satisfied	Very Satisfied	Not Applicable
Predictability of the process	139	3.6 (5)	17.3 (24)	22.3 (31)	33.8 (47)	22.3 (31)	0.7 (1)
Efficiency of the process	138	5.8 (8)	21.7 (30)	17.4 (24)	36.2 (50)	18.1 (25)	0.7 (1)
Overall clarity of letters	139	4.3 (6)	9.4 (13)	15.1 (21)	37.4 (52)	33.1 (46)	0.7 (1)
Transparency of reasoning behind letters and the measures outlined	139	3.6 (5)	10.8 (15)	16.5 (23)	41.0 (57)	26.6 (37)	1.4 (2)
Clarity about next steps	137	3.6 (5)	10.9 (15)	16.1 (22)	40.9 (56)	27.0 (37)	1.5 (2)
Clarity in description of measures to be taken	139	2.2 (3)	10.8 (15)	17.3 (24)	38.8 (54)	28.8 (40)	2.2 (3)
Feasibility of the conservation measures required	139	4.3 (6)	14.4 (20)	21.6 (30)	33.8 (47)	20.9 (29)	5.0 (7)
Effectiveness of required measures in achieving conservation outcomes	142	3.5 (5)	8.5 (12)	34.5 (49)	28.9 (41)	18.3 (26)	6.3 (9)

Finding and Using Qualified Taxonomic Experts for Surveys

Q23. **How strongly do you agree with each of the following statements about finding and using qualified taxonomic experts for NDDB reviews?**

	N	Strongly disagree	Disagree	Neutral	Agree	Strongly agree	Don't Know
The current system works well.	207	4.3 (9)	14.5 (30)	32.9 (68)	15.9 (33)	3.9 (8)	28.5 (59)
It would help to have a checklist of criteria for selecting qualified taxonomic experts.	206	0	1.9 (4)	17.0 (35)	36.9 (76)	20.9 (43)	23.3 (48)
It would help to have a clearly defined process for experts to get approved (by species type).	204	0.5 (1)	1.5 (3)	17.2 (35)	33.3 (68)	25.5 (52)	22.1 (45)
It would help to have a list of biologists and botanists who have been approved for past reviews.	207	0.5 (1)	0	12.1 (25)	30.9 (64)	35.7 (74)	20.8 (43)

NDDB staff

Q25. **Based on your experience corresponding or talking with NDDB staff, how would you rate your satisfaction with the following?**

	N	Very Dissatisfied	Slightly Dissatisfied	Neutral	Slightly Satisfied	Very Satisfied	Not Applicable
Staff willingness to answer questions	205	2.9 (6)	3.9 (8)	13.2 (27)	15.1 (31)	51.7 (106)	13.2 (27)
Timeliness of staff responses	205	6.3 (13)	11.2 (23)	19.5 (40)	15.6 (32)	35.1 (72)	12.2 (25)
Staff helpfulness	205	1.0 (2)	5.9 (12)	13.2 (27)	19.5 (40)	47.8 (98)	12.7 (26)
Staff knowledge	205	0.5 (1)	1.5 (3)	13.2 (27)	18.0 (37)	53.2 (109)	13.7 (28)
Staff willingness to listen to concerns	205	2.9 (6)	4.4 (9)	19.0 (39)	19.0 (39)	37.6 (77)	17.1 (35)
Staff willingness to work collaboratively	202	3.0 (6)	4.5 (9)	19.3 (39)	19.8 (40)	37.1 (75)	16.3 (36)
Clarity of staff communication	202	1.5 (3)	7.9 (16)	16.3 (33)	21.3 (43)	41.6 (84)	11.4 (23)