TN Exotic Pest Plant Council
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Invasive Plant Management Cost Assessment 101: How to develop a survey and get a response

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Photo: Herbicide application on kudzu (*Pueraria Montana var. lobata*); James H. Miller, USDA Forest Service, Bugwood.org

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1. DESIGN YOUR SURVEY

a. **Questions to consider**.
Questions, questions, questions. Just as in scientific research, you first need to know what questions you seek to answer. For example, you may want to find out: *How much do agencies spend on invasive plant removal?* Or, *What are the most problematic species in the state?* Or, *What region or sector spends the most on invasive plant management?* Once you have some questions in mind, you will want to refine these questions and craft them into easily understood, easily answered survey questions.

An excellent reference for survey design is Dillmann, Smyth and Christian's text, *Internet, Mail and Mixed-Mode Surveys: The Tailored Design Method* (2009). The authors offer sixteen "important questions" to ask *yourself* before beginning the survey process.

[Insert Figure 12.2 (407) from Dillmann et al. from 2009 text? Ask Dillmann for permission]

b. **Pick your mode**.
Survey modes include mail, email, PDF/word documents, online survey services (such as Survey Monkey), or a combination of those modes (I utilized PDF/word fillable documents, but might opt for a web-based survey service in the future). For example, a commonly recommended practice to increase response rate is: (1) send a letter informing the respondent of your intent to survey them, (2) send the survey link or attachment via email to the respondent, (3) send a postcard two weeks later, reminding the respondent of the survey, (4) call and/or email the respondent to remind them of the survey. Depending on your organization's budget, you may or may not want to do this mailing process. You could, instead, just choose steps 1, 2 and 4, or just 2 and 4.

c. **Other considerations.**
Other things to keep in mind when designing your survey include:
   i. Yes/no questions are often easier and quicker to answer than open-ended questions that might lead to uncertainty. Opt for multiple choice questions whenever possible; you are in essence offering possibilities to the respondent and hopefully "queue" something in their mind. For example, instead of formatting your question like this:

   What type of organization do you work with? ____________

   You should consider formatting it like this:

My organization is a:
☐ *Federal agency*
☐ *State agency*
☐ *Non-profit/501c3*
☐ *Private corporation or landowner*
☐ *County or city park*
☐ *Other ___________*

ii. **Keep it simple!** The shorter the survey, the easier the questions, the more likely your respondent is to sit down and take the time to fill out the survey. Prioritize what information you wish to gather and cut the rest. Make your focus question clear and stick with it. If you can eliminate your respondent having to look at records, they are less likely to give up. For example, instead of asking for an exact figure of volunteer hours expended annually, you may wish to offer ranges to choose from:

Approximately how many hours of volunteer labor does your agency expend annually on invasive plant management?

☐ *Less than 25 hours per year*
☐ *25-50 hours per year*
☐ *Between 50 and 100 hours per year*
☐ *100-250 hours per year*
☐ *250-500 hours per year*
☐ *Greater than 500 hours per year.*

iii. Visit this website for more tips on survey design.

2. DISTRIBUTE YOUR SURVEY

a. **Pilot run.**
Once you are happy with your survey format and design, you will want to distribute the survey to a small *pilot group* of respondents. You may be able to do this by simply sending the survey to the board members of your organization. For example, our council's board consists of affiliates from state parks, municipal park systems, National Park Service units, native plant nursery companies, and several other state and federal agencies. These are essentially the groups I am targeting with the survey, so by getting these people to actually *fill out the survey*, time themselves, ask themselves which questions were hard, easy, clear, or confusing, I am getting several critiques and feedback to revise my survey before I ever send it out to my actual population respondents. *If you have never designed a survey before, I strongly suggest getting as much input as possible on your survey design before distributing it across the state*. Check with a local university or college to see

if there is a Forestry/Human Dimensions or Forestry/Sociology lab that routinely develops surveys; the professor or other lab member may be willing to help you revise your survey and offer great suggestions as well.
Allow 2 weeks for this pilot run.

b. **Revisions.**
Incorporate any input from pilot group respondents, professors, and other editors. Revise your survey appropriately; get these initial pilot respondents and editors to read your revised draft if possible to be sure you have addressed all their problems.
Allow up to a week to completely revise your article.

c. **Population selection.**
While you are revising your survey, you should be compiling a spreadsheet of respondents (you may want to include these column categories: agency, agency category, contact person and title, phone number, email address, mailing address and website) to whom you will distribute your survey. <u>Consider federal agencies, state agencies, city and county park systems, agriculture departments, non-profit volunteer groups and nature centers, land conservancies, utilities and transportation departments</u>.

Extra research at this point *will be well worth your time. If you want a comprehensive budget figure, your population must be comprehensive*. You will also want to contact agencies and acts (i.e. American Recovery and Restoration Act, National Fish and Wildlife Federation Pulling Together Initiative, Landowner Incentive Program) to see about funding in your state via grants and cost-share programs. **IMPORTANT: to avoid "double counting" grant funds, ask respondents from agencies to EXCLUDE, for example, state- and federally-granted funds, or to put down this budget in a separate space acknowledged as federally/state-funded.
Allow about 1 month to develop and revise your survey and contact list.

d. **Distribution to population.**
Once you feel your survey is in tip-top shape and your contact list exhaustive, it is time to begin distributing the survey! Depending on which mode you chose (see 1.b), follow that appropriate method. You will likely get a surge or responses within a week, then responses will fizzle. If you send out a reminder email or postcard, you will probably get a second surge of responses. Each time you send a response, you should notice an influx of surveys returned. Get it? Be persistent, but not obnoxious. Give people time, and take note of who never responds, who responds, etc. Be sure you are not pestering agencies that have already responded with the completed survey or a date that they will return the survey.
Allow 2-4 months for the survey distribution and return period.

3. DEALING WITH THE DATA

a. **Analyze and graph.** You've got a hundred response surveys back. Now what? Just like a scientific study, you will want to sort and analyze your data. A few things to analyze that may be of interest: invasive plant management expenditures by organization category (i.e. federal agencies, state agencies, non-profits, city/county parks…); most commonly reported problematic plant species by species, by habit (shrub, grass, tree, forb, aquatic), or by invasive threat status (i.e. our council labels species as Alert, Significant Threat, or Severe Threat); or response rate by organization category. Consider using computer programs such as Microsoft Excel or JMP Pro 10.
Allow about 2 weeks to analyze your data.

4. PUBLISH YOUR DATA!

a. **Presentations, articles, factsheets.** Depending on *who* you wish to reach, and *how* you wish to communicate, you will want to distribute your findings! For example, TN-EPPC presented our findings at a regional Southeastern EPPC Conference with a powerpoint presentation and talk; printed fact sheet fliers for distribution at conferences, workshops and events; developed pages, links and resources on our website; and published an article in the regional *Wildland Weeds* EPPC publication.

5. A FEW THINGS TO CONSIDER: RESPONSE RATES AND HOUSEKEEPING…

a. **Collaboration?**
If you can get a second conservation, policy, or educational organization to "co-sponsor" or collaborate on this survey project with your own organization, you may be able to increase your credibility. For example, "I am calling on behalf of the Nature Conservancy and Tennessee Exotic Pest Plant Council" may have more loft that just "I am calling on behalf of the Tennessee Exotic Pest Plant Council…" If an agency is not yet familiar with "EPPC," a familiar name such as a wildlife federation, conservancy, or society may bolster your credibility and increase response rate.

b. **Time commitment: be prepared to spend about 5 months of at least 15 hours per week on this project.**
Depending on the extent and variation of invasive plant management in your state, this may take more or less time. Allotting enough time to allow "gatekeepers" to pass surveys along to the appropriate respondent in their organization and to give respondents sufficient time to gather budget data will

be key in increasing your response rate.

c. **Be persistent!**
Don't be surprised or frustrated if you have to contact a single agency 5-10 times via email and/or mail and/or telephone before getting a response! These people are busy, and if you persistently remind your contact person that this survey is important and why it is, they should eventually respond. Check out Dillmann et al. 2009 for more on this.

d. **Don't call me on my Friday afternoon!** Think about it. Would *you* want work on *someone else's work* on Friday afternoon, just hours before the weekend? Try to avoid sending emails and making reminder phone calls on afternoons late in the week. Instead, set aside time early in the week, early in the day, to make phone calls and send emails. Save the late afternoons and Fridays to input surveys, sort and analyze data, anything that doesn't depend on someone else's time!

e. **Give a deadline.**
If someone understands you need the survey returned within a month, they are more likely to get it done by then. If not, they may keep putting it off infinitely. Don't be afraid to email or call to remind them: "Our deadline for the survey is coming up soon—next Friday! Response rates have been low for your sector, please help contribute to this cost assessment!"

f. **Be flexible.**
Offer to fill out the survey *for* the respondent if that would be convenient or if they would be more willing to do so. How? Set up a phone interview, ask the questions and fill out the survey as they verbally respond. If they can't answer any of the questions on the spot, send them a reminder email with the missing questions. If they are not comfortable answering certain questions, probe out how you might make them more comfortable—can you alter the question format a bit? Can they provide an hour estimate instead of an exact dollar value? Can they provide a budget estimate knowing that your organization will present this number only as an estimate, not cold hard numbers?

g. **Be scrupulous with note taking.**
Keep track of when and how you correspond with respondents. You don't want to forget you called a person, and call them again the very next day to check in! Be respectful to respondents—keep your records tidy and easy to navigate. Also, you never know what information may be of interest to the assessment down the line—so *write down everything you can* that the respondent tells you for the given organization.

Still have questions? Contact the TN Exotic Pest Plant Council by following this link: http://tneppc.org/pages/contact

References

Dillman, D.A., J.D. Smyth, and L.M. Christian. (2009). *Internet, Mail, and Mixed-Mode Surveys: The Tailored Design Method* (3rd ed.). Hoboken, New Jersey: Wiley.

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