

Division of Governmental Studies and Services

WASHINGTON STATE UNIVERSITY EXTENSION

Report to Washington Invasive Species Council

Invasive Species Capabilities and Capacity Survey—Municipal Governments

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INTRODUCTION

This report details the findings of a survey conducted by researchers at WSU's Division of Governmental Studies and Services (DGSS) in partnership with the Washington State Recreation and Conservation Office's Washington Invasive Species Council (WISC). The Division of Governmental Studies and Services (DGSS) is a social science research and outreach unit sponsored by WSU Extension and the College of Arts and Sciences and has served Washington State University's land grant mission for over 55 years. DGSS serves as an important link that leverages the University's resources for public benefit, through applied social science research, technical assistance, and training for government and non-government organizations throughout the Pacific Northwest. DGSS has extensive survey experience that informed the project and has worked with numerous Washington State government organizations, including with natural resources organizations, such as the State Parks and Recreation Commission, the Department of Natural Resources and the Department of Fish and Wildlife.

Recognizing the importance of a needs assessment of community capacity to identify and respond to invasive species, WISC contracted with DGSS to collaboratively develop and conduct a survey of Washington State municipal and tribal government organizations who may be called upon for invasive species identification and response. This report focuses on the responses of municipal government organizations and provides tribal government responses in the analysis for comparative purposes. A separate report focusing on tribal government responses was also provided to WISC and can be found at

https://invasivespecies.wa.gov/council/reports/.

METHODS

To better understand the current capacity and needs of municipal governments responding to invasive species, DGSS researchers and WISC representatives collaboratively developed the Invasive Species Capabilities and Capacity Survey. The survey was implemented online using the Qualtrics survey platform in the Winter of 2020 and

Spring of 2021. Representatives for the Washington Invasive Species Council developed a list of 600 municipal government organizations from 209 total Washington cities. Potential respondents received three invitations to complete the survey from Washington Invasive Species Council representatives. A total of 60 municipal government organizations completed or nearly completed (60% or more) of the survey for a response rate of 10%. Of these respondents, 49 identified their municipal government organization affiliation with (as this question was not required) which was used to determine which cities were represented. Overall, a total of 42 unique cities were represented (20% of cities in the original contact list developed by WISC representatives). Eight responses were from municipal government organizations located within the same city.

ANALYSIS

Organizational Demographics

Municipal government organizations were asked the footprint of their jurisdiction in acres and the number of employees in their jurisdiction. Half of the responding municipal government organizations manage land areas of less than 3,000 acres (50%, 26) and 46% (25) have 50 employees or more.





Respondents were asked the number of employees engaged in invasive species issues (See Figure 3 Below). Half of municipalities have 3 or fewer employees engaged in invasive species issue on a full or part time basis (49%, 25). Following this question, respondents were asked two open-ended questions: (1) Where in your organization (departments or programs) are those positions located; and (2) Who are the decision makers in your organization when it comes to decisions involving invasive species? A total of 52 respondents provided information on where, within their organization, these positions are located. Public Works (20) and Parks or Parks and Recreation (22), were the most common responses. Forty-four respondents provided information on the position of decision-makers in their organization who are involved in invasive species decisions. Responses varied some across positions; the most common responses included: Public Works Director (14), Parks and Recreation Director (13), City Council (9), City Manager (7), and the Mayor (5).



7.8%

9.8%

Species of Concern

21.6%

1

19.6%

40%

20%

0%

Respondents were first asked whether their organization has identified invasive species that pose a significant risk to their organization or community and were able to select whether they had identified *invasive animals, invasive insects, invasive plants,* or *wildlife diseases.* Overall, 75.0% (45) of municipalities had identified at least one type of invasive species, while a quarter have not identified any invasive species (25.0%, 15) (See Figure 4 Below). The most frequently identified type of invasive species by municipalities was invasive plants (73.3%, 44) (See Figure 5 below).

Respondents who indicated they had identified at least one type of invasive species that posed a risk were asked the following open-ended question: *What invasive species pose the greatest risk to your community?* A total of 43 participants provided a response to this question. The most commonly identified invasive species across respondents were Invasive Knotweeds (17), Ivy (17), Blackberry (14), and various types of thistle (9), including Scotch Thistle and Canadian Thistle.

25.5%

6 or more

15.7%





Figure 5: Types of Invasive Species Identified



Respondents were next asked whether *their* organization keeps up to date with the latest invasive species to determine whether they pose a risk to their organization. A little over half of the respondents indicated that their organization does keep up to date on the latest invasive species, a percentage. Those who indicated that their organization keeps up to date on the latest invasive species were asked the following open-ended question: *How does your organization review invasive species to determine if they pose a significant risk to your organization or community*? A total of 33 respondents answered this question. Responses to this question were varied with the most common responses mentioning engagement with county-level actors (10), including county noxious weed control boards (7), a county-level noxious weed control coordinator (1), and county Extension offices (2). Other common responses included staff (5), field or site visits (5), and research and conferences (4).





Risk and Potential Pathways

Respondents were then asked whether their organization had identified key sectors (such as parks), resources (such as forest products), or infrastructure (such as irrigation systems) at risk from invasive species. A total of 34 (56.7%) municipal government organizations have identified sectors, resources, or infrastructure that are at risk. Sixty percent (36) have identified key sectors that are at risk, with less than a quarter of the respondents having identified resources (18.3%, 11) or infrastructure (13.3%, 8) that are at risk (See Figure 7 Below).

Those respondents who indicated that their organization had identified sectors, resources, or infrastructure at risk were asked to further clarify what is most at risk from invasive species introduction and damage in an open-ended question. Twenty-Two respondents indicated sectors were most at risk with parks being most identified across respondents (11). This was followed by riparian (7) and natural (5) areas, and forests (6). Only 8 respondents identified resources at risk with most responses focusing on aspects of water and water quality (7), including rivers, lakes, ponds and streams, surface water quality, aquatic habitat, salmon habitat, and aquatic health. Two respondents identified infrastructure at risk with one respondent stating, "agricultural lands" and the other mentioning "catch basins, culverts, pipes and conduits".



Participants were also asked whether their organization has identified pathways or points of entry of invasive species. Less than half of the municipal government organizations surveyed have identified pathways for invasive species (40.4%, 23). Respondents were asked to clarify their responses.¹ Of those who answered yes to this question, 23 respondents opted to specify further with common responses mentioning waterways (11) which included rivers, streams, and boats, animals (6) such as birds (4), wind (3), and vehicles and roadways (3). A total of 15 respondents provided further information on their no responses with most mentioning "no" or "none" (11). One respondent stated, "there are many established populations of invasive species. We expect the usual routes increase them/move them around." Another respondent stated, "as a small municipality, we do not feel that we are at risk to invasive species on a large scale".



Figure 8: Pathways or Points of Entry for Invasive Species

Prevention, Emergency Preparedness, and Notification Structure

Respondents were then asked about the steps their organization has taken to prevent the introduction and spread of invasive species. Respondents were given a list of steps and asked to select all that applied. The steps provided were vulnerability assessments, prevention policies and protocols, required staff trainings, volunteer staff trainings, community training/workshops, and public *campaigns*. The most frequently taken steps by municipalities was required staff trainings (46.9%, 23), prevention policies and protocols (44.9%, 22), and community trainings or workshops (34.7%, 17). Of the 10 respondents who selected "other", the most common identified step was networking with county noxious weed control boards (2). Other steps mentioned included contracted work to remove invasive species (1), sponsored weed pulls and clean ups (1), spraying yearly (1), and municipal code (1).

¹ Originally, only respondents answering "yes" were asked to please specify. During the administration of the survey, those answering "no" were also given this option.

Thus, not all "no" respondents were given the opportunity to further elaborate their response.



Figure 9: Steps Developed to Prevent Introduction and Spread of Invasive Species

Respondents were also asked whether there are barriers or gaps to being more preventative. The majority of respondents indicated that there are existing barriers or gaps (61.4%, 35). Respondents were asked to elaborate on their "yes" or "no" response.² Thirty-five respondents who indicated "yes" provided further information, with the most common gaps identified as funding (11), time (8), staff (8). Some respondents indicated that resources were an issue (8) but did not further clarify which resources were lacking. Some items mentioned included lack of resources for education, outreach, training and enforcement, relying on county-level entities due to lack of resources, and no resources to engage private landowners. One respondent stated, "we can work to monitor and prevent infestation on public land, but not adjacent property owners." The issue of gaps for private land was noted by 4 respondents. Three respondents mentioned stores, nurseries and/or online sales of invasive species as gaps to being more preventative. Only 1 respondent provided further information on their "no" response, stating the following: "being preventative is a matter of public contact and sharing of information".



Respondents were also asked whether anyone in their organization had experience responding to a

² Originally, only respondents answering "yes" were asked to please specify. During the administration of the survey, those answering "no" were also given this option.

new detection of an invasive species, and if so, about how long it had been since someone in their organization or community responded to a new detection. As Figure 11 below indicates, less than half of those responding indicated that their organization has someone with experience responding to an invasive species (43.3%, 26). Of these organizations, half (50%, 13) have responded to a new detection within the last 3 years.





Respondents were then asked whether anyone in their organization responsible for invasive species response has participated in Incident Command Structure (ICS) training. Respondents were given the following list of ICS courses and asked to select all that applied: ICS 100, ICS 200, ICS 300, ICS 400, ICS 700, ICS 701, ICS 800, and Other. The most common ICS training completed was ICS 100 (91%, 32), followed by ICS 200 (65.7%, 23), and ICS 700 (57.1%, 20). A majority of municipal government organizations reported having someone trained in ICS 100, 200, and 700 courses. Only one respondent clarified their "other" response, stating that what courses are completed "varies by staff person. I've never heard of this framework being used for invasive species response."





Next, respondents were asked whether their organization had developed a notification structure and process internally, such as notifying a WSU Extension Office of a new invasive species detection. Slightly over three quarters of the respondents (78.6%, 44), have not developed a notification structure. Respondents were given the option to further elaborate on their "yes" or "no" responses.³ Twelve respondents further elaborated their "yes" response with most indicating that their notification structure included county noxious week boards (8), and WSU and WSU Extension (2). Thirteen respondents elaborated on their "no" response with most simply stating there is no formal process (9). A few respondents indicated they had no formal process but would notify the appropriate entity (2) or only have an internal organization structure (2).

Those respondents who indicated their organization has not developed a notification structure were then asked if there are any gaps to developing an internal notification system, 59.5% (25) stated they were unsure, while 28.6% (12) stated "yes". Eleven respondents provided further information and responses were greatly varied. Resources (2),

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Thus, not all "no" respondents were given the opportunity to further elaborate their response.

education and training (2), and a standard identification and reporting portal or refined reporting system (2) received mentions.

Figure 13: Internal Notification Structure and Process Developed



Diagnosis, Internal Response, and Funding

Survey participants were asked to respond to the following open-ended question: *If a potential new invasive species is found in your community or area of interest, what office, department, or position is the most likely first point of contact?* Of the 57 respondents who answered this question, the most common responses included Public Works or the Public Works Director (23), parks, Parks and Recreation, or Parks, Planning and Natural Resources Division (17), and county noxious week boards (8).

Respondents were then asked about their capabilities and resources for invasive species response. When asked whether their organization has internal diagnosis capabilities to verify a problem species, less than a quarter (21.7%, 13) indicated yes. It should be noted that nearly a third of those who responded to this question do not know whether their organization has this capability (31.7%, 19). Of the 29 organizations who do not have a diagnosis capability, nearly half (48.3%, 14) have a list of external points of contact that can aid in problem species verification, while 27.6% (8) do not.



Following these questions, respondents were asked to identify the position within their organization that is responsible for notifying external organizations. Fifty-two participants responded; the most common responses were the Public Works Director or supervisor (14), Parks and Recreation Director or supervisor (6), Natural Resources Department or director (3), county noxious weed control boards (3).

Respondents were then asked if their organization has the ability to respond to an invasive species detection. Roughly two thirds (63.3%, 38) of respondents indicated that their organization can respond to invasive species (See Figure 15 below).

Depending on responses to this question, respondents were branched to different open-ended questions. Those who responded "yes" were then asked which department or programs within their organization have a role in responding to invasive species. Those who answered "no" were asked whether they know of an organization or community in their area that does have the ability to respond to invasive species detection. Of those who stated that their organization can respond, 28 provided further information on the departments or programs with a role in invasive species detection. The most identified department or program with a role in responding to invasive species was Parks or Parks and Recreation (24), Public Works (21), and Department of Natural Resources (6). For those respondents who indicated that they do not have the

ability to respond to an invasive species detection, 16 provided information on another organization in their community that can respond. Responses included various conservation districts such as Spokane Conservation District and the Kitsap Conservation District (4). There were also references to counties with no specific department included (4), which included King County and Cowlitz County. A couple of respondents indicates that they also rely on volunteers.



Figure 15: Ability to Respond to Invasive Species Detection

When asked whether their organization has

sufficient funding to meet their objectives, only 10% (6) said "yes", while half (53.3%, 32) said "no" (See Figure 16 below). Respondents were then asked the following open-ended question: What are the barriers or gaps to effective identification and invasive species response in your organization? Fifty-one respondents answered this question; the most common responses were funding and budget (21), staff and staffing (19), time (11), training (7), and lack of resources (7). The staff and staffing comments included responses that focused on lack staffing to meet needs and lack of knowledge amongst staff in identification and understanding their responsibilities. One respondent stated there was a "not my job" attitude amongst some staff. Some respondents also indicated that other priorities take precedence (7), with one respondent stating, "leadership doesn't see it as a priority; therefore, funding is limited for invasive removal." Similarly,

another respondent expressed that they have a wide span of responsibilities, so none truly get all the attention they deserve.





Respondents were then asked about their organization's leadership. First, respondents were asked whether their leadership was informed about the risk of invasive species. Twenty-three respondents (38.3%) answered that their leadership was informed, and 40% (24) responded that they did not know (See Figure 17 below).





The 37 respondents who indicated that their leadership is not informed or that they did not know whether their leadership is informed were also asked to identify how the council could assist in informing their leadership of invasive species threat. These respondents selected from a list of potential activities, including providing fact sheets for relevant invasive species, hosting a presentation about relevant invasive species, keeping organizations up to date with latest events and news through newsletters and social media outreach, web links with educational materials, and other. The most frequent strategy for informing leadership suggested by respondents was providing fact sheets for relevant invasive species (80.0%, 28) (See Figure 18 below). Four respondents who selected "other" provided additional information: 3 of those responses focused on the need for training and education. One asserted that, "there is not really training on developing organizational plans for response".





When asked whether top-level leadership within their organization is supportive in responses to invasive species, half of the respondents (50.0%, 30) indicated that their leadership was supportive, and nearly half indicated they did not know whether their leadership was supportive.

Figure 19: Top-Level Leadership in Organization Supportive of Invasive Species Response



Authority, Planning, and Permitting

Respondents were next asked several questions on the topics of authority, planning, and permitting. The first question in this section was *do departments* within your organization have existing authority to respond to invasive species? Respondents were also provided an opportunity to clarify their response with an option to *please specify*.⁴ A large majority of respondents answered that the authority to respond does currently exist (72.9%, 43) (See Figure 20 below). The most common departments and programs identified by "yes" respondents (42), were Public Works (24), Parks and Parks and Recreation (22). Eight respondents further clarified their "no" response with 2 indicating that they do not know, 1 mentioning that they lack the authority structure, and 1 stating a lack of budget authority.

⁴ Originally, only respondents answering "yes" were asked to please specify. During the administration of the survey, those answering "no" were also given this option.



Figure 20: Departmental Authority to Respond to Invasive Species

Respondents who indicated that their organization has the existing authority to respond to invasive species, were then asked the following: Are these authorities able to adequately respond to invasive species or are there known gaps? One third of those responding to this question felt that the existing authorities were able to respond adequately (33.3%, 14) (See Figure 21 below). Respondents were provided the opportunity to further specify their "yes" or "no" response.⁵ Eleven respondents who selected "yes" provided further information. Interestingly, although a "yes" response indicated that they can adequately respond, several respondents still mentioned gaps, including funding (4), such as "funding for positions to...work in the field", and time (2). Of those who selected "no" indicating there are gaps, 8 provided further information. Common gaps identified for these respondents, included funding (4), resources (3), and staff (2).



The next question was about planning and asked: Does your organization have an interdepartmental strategy or plans that guide your activities as they relate to invasive species? Only 18.6% (11) of respondents said that a strategy exists, indeed more respondents were unsure whether their organization had a strategy in place (28.8%, 17).





⁵ Originally, only respondents answering "yes" were asked to please specify. During the administration of the survey, those answering "no" were also given this option.

The last question in this section was about permits. Respondents were asked whether or not their organization has knowledge of what permits may be required to act on invasive species and the process to gain those permits. Slightly over a third of respondents indicated that their organization does not have knowledge about appropriate permits (33.9%, 20) and 35.6% (21) indicated their organization does have the knowledge.



Messaging, Public Awareness, and Stakeholder Relationships

The final section touches on public awareness, public messaging, awareness of WISC, and partnerships. First, respondents were asked whether the community members within their area of interest are generally supportive of the activities their organization takes to prevent and stop invasive species. A majority of respondents answered that community members are supportive (59.3%, 35), while a third were unsure (33.9%, 20).



Don't know/Unsure

Next, respondents were asked whether their organization has specific public messaging used to engage community members in preventing and stopping invasive species. Slightly over a quarter of those who responded indicated that they do have public messaging on invasive species (27.1%, 16).

0%





Respondents were then asked whether they were familiar with WISC. A total of 28 respondents (47.5%) are familiar with WISC. Those who are familiar with WISC were also asked how WISC could help to build community support. As with some previous questions, respondents were given a list of ideas, and asked to select as many as they thought would help. The most frequent response was that WISC could provide training and workshops (81.5%, 22), followed by presentations (55.6%, 15), and risk assessments (55.6%, 15). Seven respondents who selected "other" provided more information, with most focusing on public outreach and campaigns (5), including outreach to private landowners and general community members and public messaging. Another respondent stated that learning about, "success stories that demonstrate how specific actions to control invasive helped increase desired outcome" would be helpful.







Respondents were asked whether their organization collaborates with external agencies to perform public outreach, with a third answering yes (33.9%, 19). Respondents were also asked to further clarify their response with a prompt to *please specify*.⁶ Of those respondents who indicated that their organization collaborates with external agencies, 18 provided more information on these collaborators. The most common organizations with which they collaborate included county noxious weed control boards (7), WSU Extension (5), and conservation districts (4), such as King Conservation District and Pierce Conservation District. For those who indicated that their organization does not collaborate with external agencies, 9 provided more information with most stating "no" or "not to their knowledge" (7).

Outreach				
100%				
80%			66.1%	
60%				
40%	33.9%			
20%				
0%				
	Yes		No	

Figure 28: Collaboration with External Agencies for Public Outreach

Comparisons Between Large and Small Municipalities

To examine differences in responses between different sized municipalities, we used the organization name provided by respondents in the demographics section of the survey to identify their city location. Because only 49 of the 60 respondents provided this information, there was some limitation

⁶ Originally, only respondents answering "yes" were asked to please specify. During the administration of the survey, those answering "no" were also given this option.

to this comparison. After the city was identified, the Census population statistic was collected and used to categorize municipal organizations into either large or small municipalities. A small municipality is defined as having a population of 25,000 or less. A large municipality is defined as having a population over 25,000. This division point divides the respondents into roughly two equal groups. Of those respondents who identified their municipality, 56% (27) were representing small municipalities. In areas of preparation and planning, analysis suggests that smaller communities are less likely to be prepared to address invasive species. For example, when compared to large municipalities, small municipalities are less likely to: have interdepartmental response strategies in place, keep up to date on the latest invasive species, have sufficient funding for response, have a notification system in place, or have identified pathways for invasive species intrusion (See Figures 29 -33 below).

Figure 29: Interdepartmental Strategies: Small and Large Municipalities



Figure 30: Keeping Up to Date on Latest Invasive Species: Small and Large Municipalities



Figure 31: Sufficient Funding: Small and Large Municipalities



Figure 32: Notification System in Place: Small and Large Municipalities





Figure 33: Identified Pathways for Invasive Species: Small and Large Municipalities

In terms of capabilities, smaller municipalities were less likely to have in-house ability to diagnose invasive species, and respondents from smaller entities were less likely to suggest that their organization has the ability to respond to invasive species (see Figures 34 and 35 below).









CONCLUSIONS AND RECOMMENDATIONS

Municipalities responding to this survey were of varying size as measured by area of managed lands, number of employees, and population. Importantly, all respondents indicated that at least one employee was assigned to manage invasive species response. Municipalities were much more likely to have identified invasive plants, as compared to invasive animals, insects, or diseases. It is important to note the areas in which a large proportion of participating municipalities are not yet prepared for invasive species response. These areas include keeping up to date on the most recent invasive species, identifying pathways for invasive species, notification systems, funding, and fostering informed leadership. Some areas identified by respondents as areas that WISC could help them include providing fact sheets for relevant invasive species, and providing trainings and workshops on invasive species. The comparisons between large and small municipalities also suggest that smaller organizations are less prepared, have fewer resources, and have reduced capabilities fir responding to invasive species compared to their larger counterparts.