

## Supplementary Materials

**Table S1.** Interview questions used in this study.

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| <b>SEMI-STRUCTURED INTERVIEW QUESTIONS</b>                                                                                                                              |
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| 1. Do you feel that there is a need to manage for forest pests within your jurisdiction?                                                                                |
| 2. How are pests managed in your jurisdiction?                                                                                                                          |
| 3. What is your agency's overall objective when it comes to pest management?                                                                                            |
| 4. If there is a misalignment between objectives and what is happening on the ground—what are the barriers? Do you see ways of overcoming these barriers?               |
| 5. Do you find that bordering agencies tend to manage pest outbreaks differently? In terms of direct control, preventive management, etc.                               |
| 6. If an outbreak crosses into your jurisdiction from another jurisdiction, what does that mean? How do you respond? What about the other way around?                   |
| 7. Are there significant challenges posed by outbreaks that cross boundaries? If so, what are they?                                                                     |
| 8. If your agency is experiencing challenges posed by outbreaks that cross boundaries, can you identify what potential solutions to these challenges might be?          |
| 9. How do you define, "effective" when it comes to managing pest outbreaks? Does your agency assess for "effectiveness"?                                                |
| 10. Do you feel that your agency's long-term plans are in line with your neighboring agencies' long-term plans? Has this issue been discussed?                          |
| 11. Do you find that increasing complexity (number of different land parcels in a management mosaic) in a landscape can increase barriers to effective pest management? |
| 12. Which forest pests have caused the most significant management issues for you in your region?                                                                       |

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**Table S2.** Means and variance between survey respondent management objective subgroups.

Bold values indicate  $p$  value  $< 0.1$ .

| Question wording                                                                                                                                                         | <u>SINGLE USE</u> |      |          | <u>MULTI-USE</u> |      |          | <u>Mann-Whit. U Test</u> |             |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------|------|----------|------------------|------|----------|--------------------------|-------------|
|                                                                                                                                                                          | N                 | MEAN | STD.DEV. | N                | MEAN | STD.DEV. | W                        | P VALUE     |
| Q1. Pest outbreaks that cross jurisdictional boundaries pose unique challenges to pest management                                                                        | 10                | 6.40 | 0.7      | 24               | 6.04 | 1.0      | 95.0                     | 0.32        |
| Q2. I see interagency collaboration as being a key tool in the present/future as we continue to deal with landscape-level issues such as pest outbreaks                  | 10                | 6.80 | 0.63     | 24               | 6.40 | 0.65     | 77.0                     | <b>0.06</b> |
| Q3. I find it easy to work with personnel from neighboring agencies                                                                                                      | 10                | 4.80 | 1.14     | 24               | 5.63 | 1.06     | 170.0                    | <b>0.08</b> |
| Q4. A pest outbreak becomes more difficult to manage once it crosses a jurisdictional boundary                                                                           | 10                | 5.50 | 1.65     | 24               | 5.46 | 1.06     | 104.5                    | 0.54        |
| Q5. I know how my neighboring agencies are managing pest outbreaks                                                                                                       | 10                | 4.10 | 1.45     | 24               | 4.92 | 1.53     | 160.0                    | 0.16        |
| Q6. Increasing "complexity" (i.e. numbers of different parcels within a management-relevant landscape) in a landscape can increase barriers to effective pest management | 10                | 6.30 | 0.82     | 24               | 5.75 | 1.51     | 96.5                     | 0.35        |
| Q7. On a scale of 1 to 10 with 1 being ineffective and 10 being very effective, how would you rate the effectiveness of forest pest management in your region?           | 10                | 6.30 | 1.34     | 24               | 6.00 | 1.98     | 103.5                    | 0.52        |

**Table S3.** Means and variance between survey respondent PACE subgroups. Bold values indicate  $p$  value  $< 0.1$ .

| Question wording                                                                                                                                                         | N  | <u>ROMO PACE</u> |          | <u>CORI PACE</u> |      | <u>Mann-Whit. U Test</u> |       |         |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----|------------------|----------|------------------|------|--------------------------|-------|---------|
|                                                                                                                                                                          |    | MEAN             | STD.DEV. | N                | MEAN | STD.DEV.                 | W     | P VALUE |
| Q1. Pest outbreaks that cross jurisdictional boundaries pose unique challenges to pest management                                                                        | 18 | 6.06             | 1.06     | 16               | 6.25 | 0.68                     | 152.0 | 0.82    |
| Q2. I see interagency collaboration as being a key tool in the present/future as we continue to deal with landscape-level issues such as pest outbreaks                  | 18 | 6.56             | 0.73     | 16               | 6.50 | 0.62                     | 142.0 | 0.80    |
| Q3. I find it easy to work with personnel from neighboring agencies                                                                                                      | 18 | 5.67             | 1.03     | 16               | 5.06 | 1.18                     | 94.0  | 0.11    |
| Q4. A pest outbreak becomes more difficult to manage once it crosses a jurisdictional boundary                                                                           | 18 | 5.28             | 1.41     | 16               | 5.69 | 1.01                     | 165.0 | 0.41    |
| Q5. I know how my neighboring agencies are managing pest outbreaks                                                                                                       | 18 | 5.06             | 1.39     | 16               | 4.25 | 1.61                     | 100.5 | 0.21    |
| Q6. Increasing "complexity" (i.e. numbers of different parcels within a management-relevant landscape) in a landscape can increase barriers to effective pest management | 18 | 6.00             | 1.28     | 16               | 5.81 | 1.47                     | 131.5 | 0.49    |
| Q7. On a scale of 1 to 10 with 1 being ineffective and 10 being very effective, how would you rate the effectiveness of forest pest management in your region?           | 18 | 5.78             | 1.59     | 16               | 6.44 | 2.00                     | 170.5 | 0.35    |

**Table S4.** Means and variance between survey respondent age subgroups. Bold values indicate  $p$  value  $< 0.1$ .

| Question wording                                                                                                                                                         | <u>AGE: 26-45</u> |      |          | <u>AGE: 46-65</u> |      |          | <u>Mann-Whit. U Test</u> |         |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------|------|----------|-------------------|------|----------|--------------------------|---------|
|                                                                                                                                                                          | N                 | MEAN | STD.DEV. | N                 | MEAN | STD.DEV. | W                        | P VALUE |
| Q1. Pest outbreaks that cross jurisdictional boundaries pose unique challenges to pest management                                                                        | 14                | 6.29 | 0.73     | 20                | 6.05 | 0.86     | 155.0                    | 0.57    |
| Q2. I see interagency collaboration as being a key tool in the present/future as we continue to deal with landscape-level issues such as pest outbreaks                  | 14                | 6.71 | 0.61     | 20                | 6.40 | 0.68     | 178.0                    | 0.13    |
| Q3. I find it easy to work with personnel from neighboring agencies                                                                                                      | 14                | 5.36 | 1.01     | 20                | 5.40 | 1.23     | 131.0                    | 0.75    |
| Q4. A pest outbreak becomes more difficult to manage once it crosses a jurisdictional boundary                                                                           | 14                | 5.43 | 1.60     | 20                | 5.50 | 1.24     | 149.5                    | 0.74    |
| Q5. I know how my neighboring agencies are managing pest outbreaks                                                                                                       | 14                | 4.36 | 1.65     | 20                | 5.50 | 1.45     | 111.0                    | 0.37    |
| Q6. Increasing "complexity" (i.e. numbers of different parcels within a management-relevant landscape) in a landscape can increase barriers to effective pest management | 14                | 5.79 | 1.53     | 20                | 6.00 | 1.26     | 128.5                    | 0.68    |
| Q7. On a scale of 1 to 10 with 1 being ineffective and 10 being very effective, how would you rate the effectiveness of forest pest management in your region?           | 14                | 6.21 | 2.04     | 20                | 6.00 | 1.65     | 137.0                    | 0.93    |

**Table S5.** Means and variance between survey respondent education subgroups. Bold values indicate  $p$  value  $< 0.1$ .

| Question wording                                                                                                                                                         | <u>ADVANCED DEGREE</u> |      |          | <u>&lt;ADVANCED DEGREE</u> |      |           | <u>Mann-Whit. U Test</u> |             |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------|------|----------|----------------------------|------|-----------|--------------------------|-------------|
|                                                                                                                                                                          | N                      | MEAN | STD.DEV. | N                          | MEAN | STD. DEV. | W                        | P VALUE     |
| Q1. Pest outbreaks that cross jurisdictional boundaries pose unique challenges to pest management                                                                        | 16                     | 6.50 | 0.63     | 18                         | 5.83 | 0.99      | 204.0                    | <b>0.03</b> |
| Q2. I see interagency collaboration as being a key tool in the present/future as we continue to deal with landscape-level issues such as pest outbreaks                  | 16                     | 6.81 | 0.54     | 18                         | 6.28 | 0.67      | 210.5                    | <b>0.01</b> |
| Q3. I find it easy to work with personnel from neighboring agencies                                                                                                      | 16                     | 5.06 | 1.29     | 18                         | 5.67 | 0.91      | 106.0                    | 0.16        |
| Q4. A pest outbreak becomes more difficult to manage once it crosses a jurisdictional boundary                                                                           | 16                     | 5.75 | 1.18     | 18                         | 5.22 | 1.26      | 180.5                    | 0.19        |
| Q5. I know how my neighboring agencies are managing pest outbreaks                                                                                                       | 16                     | 4.19 | 1.52     | 18                         | 5.11 | 1.45      | 88.5                     | <b>0.05</b> |
| Q6. Increasing "complexity" (i.e. numbers of different parcels within a management-relevant landscape) in a landscape can increase barriers to effective pest management | 16                     | 6.31 | 0.70     | 18                         | 5.56 | 1.69      | 180.5                    | 0.18        |
| Q7. On a scale of 1 to 10 with 1 being ineffective and 10 being very effective, how would you rate the effectiveness of forest pest management in your region?           | 16                     | 6.56 | 1.59     | 18                         | 5.67 | 1.91      | 188.0                    | 0.12        |

**Table S6.** Means and variance between survey respondent time with agency subgroups. Bold values indicate  $p$  value  $< 0.1$ .

| Question wording                                                                                                                                                         | <u>TIME W/AGENCY: &lt;10 YRS</u> |      |          | <u>TIME W/AGENCY: &gt;10 YRS</u> |      |           | <u>Mann-Whit. U Test</u> |             |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------|------|----------|----------------------------------|------|-----------|--------------------------|-------------|
|                                                                                                                                                                          | N                                | MEAN | STD.DEV. | N                                | MEAN | STD. DEV. | W                        | P VALUE     |
| Q1. Pest outbreaks that cross jurisdictional boundaries pose unique challenges to pest management                                                                        | 10                               | 6.60 | 0.70     | 24                               | 5.96 | 0.91      | 173.5                    | <b>0.03</b> |
| Q2. I see interagency collaboration as being a key tool in the present/future as we continue to deal with landscape-level issues such as pest outbreaks                  | 10                               | 6.80 | 0.63     | 24                               | 6.42 | 0.65      | 163.5                    | <b>0.06</b> |
| Q3. I find it easy to work with personnel from neighboring agencies                                                                                                      | 10                               | 4.90 | 1.60     | 24                               | 5.58 | 0.82      | 94.5                     | 0.29        |
| Q4. A pest outbreak becomes more difficult to manage once it crosses a jurisdictional boundary                                                                           | 10                               | 5.80 | 1.23     | 24                               | 5.33 | 1.24      | 146.5                    | 0.30        |
| Q5. I know how my neighboring agencies are managing pest outbreaks                                                                                                       | 10                               | 4.30 | 1.57     | 24                               | 4.83 | 1.52      | 90.5                     | 0.20        |
| Q6. Increasing "complexity" (i.e. numbers of different parcels within a management-relevant landscape) in a landscape can increase barriers to effective pest management | 10                               | 6.30 | 0.67     | 24                               | 5.75 | 1.54      | 140.5                    | 0.41        |
| Q7. On a scale of 1 to 10 with 1 being ineffective and 10 being very effective, how would you rate the effectiveness of forest pest management in your region?           | 10                               | 6.50 | 1.78     | 24                               | 5.92 | 1.82      | 142                      | 0.39        |

**Table S7.** Means and variance between survey respondent discipline subgroups. Bold values indicate  $p$  value  $< 0.1$ .

| Question wording                                                                                                                                                         | N | ENTOMOLOGY |          | N  | FORESTRY |           | N | ECOLOGY |           | KRUS. WALLIS TEST |    |             |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---|------------|----------|----|----------|-----------|---|---------|-----------|-------------------|----|-------------|
|                                                                                                                                                                          |   | MEAN       | STD.DEV. |    | MEAN     | STD. DEV. |   | MEAN    | STD. DEV. | CHI-SQUARE        | DF | P VALUE     |
| Q1. Pest outbreaks that cross jurisdictional boundaries pose unique challenges to pest management                                                                        | 5 | 6.40       | 0.55     | 22 | 6.00     | 0.97      | 7 | 6.42    | 0.79      | 1.59              | 2  | 0.45        |
| Q2. I see interagency collaboration as being a key tool in the present/future as we continue to deal with landscape-level issues such as pest outbreaks                  | 5 | 7.00       | 0        | 22 | 6.36     | 0.66      | 7 | 6.71    | 0.76      | 5.91              | 2  | <b>0.05</b> |
| Q3. I find it easy to work with personnel from neighboring agencies                                                                                                      | 5 | 6.00       | 0        | 22 | 5.45     | 1.22      | 7 | 4.71    | 0.95      | 5.39              | 2  | <b>0.06</b> |
| Q4. A pest outbreak becomes more difficult to manage once it crosses a jurisdictional boundary                                                                           | 5 | 5.60       | 1.14     | 22 | 5.32     | 1.25      | 7 | 5.86    | 1.34      | 1.40              | 2  | 0.49        |
| Q5. I know how my neighboring agencies are managing pest outbreaks                                                                                                       | 5 | 4.60       | 1.14     | 22 | 4.91     | 1.66      | 7 | 4.00    | 1.29      | 2.86              | 2  | 0.24        |
| Q6. Increasing "complexity" (i.e. numbers of different parcels within a management-relevant landscape) in a landscape can increase barriers to effective pest management | 5 | 6.40       | 0.89     | 22 | 5.68     | 1.55      | 7 | 6.29    | 0.76      | 1.58              | 2  | 0.45        |
| Q7. On a scale of 1 to 10 with 1 being ineffective and 10 being very effective, how would you rate the effectiveness of forest pest management in your region?           | 5 | 6.80       | 1.30     | 22 | 5.86     | 2.01      | 7 | 6.29    | 1.38      | 1.87              | 2  | 0.39        |