

FEDERAL INTERAGENCY COMMITTEE ON INVASIVE TERRESTRIAL ANIMALS AND PATHOGENS



INVERTEBRATES SUBCOMMITTEE

2017-2021 STRATEGIC AND WORK PLAN

LAST UPDATED 11/22/2019

PARTICIPANTS:

- *Wayne Wehling - USDA-APHIS-PPQ*
- *Rich Hellmich – USDA-ARS*
- *Kevin Hackett – USDA-ARS*
- *Don Weber – USDA-ARS*
- *Tracy Leskey – USDA-ARS*
- *Annie Simpson – DOI-USGS*
- *Doug Burkett – DOD-AFPMB*
- *Carlos Blanco – APHIS-PPQ*
- *Matt Buffington – USDA-ARS-Smithsonian Institute*
- *Bob Kula – USDA-ARS-Smithsonian Institute*
- *Armando Rosario-Lebron APHIS-PTQ*
- *Phil Andreozzi-USDA*

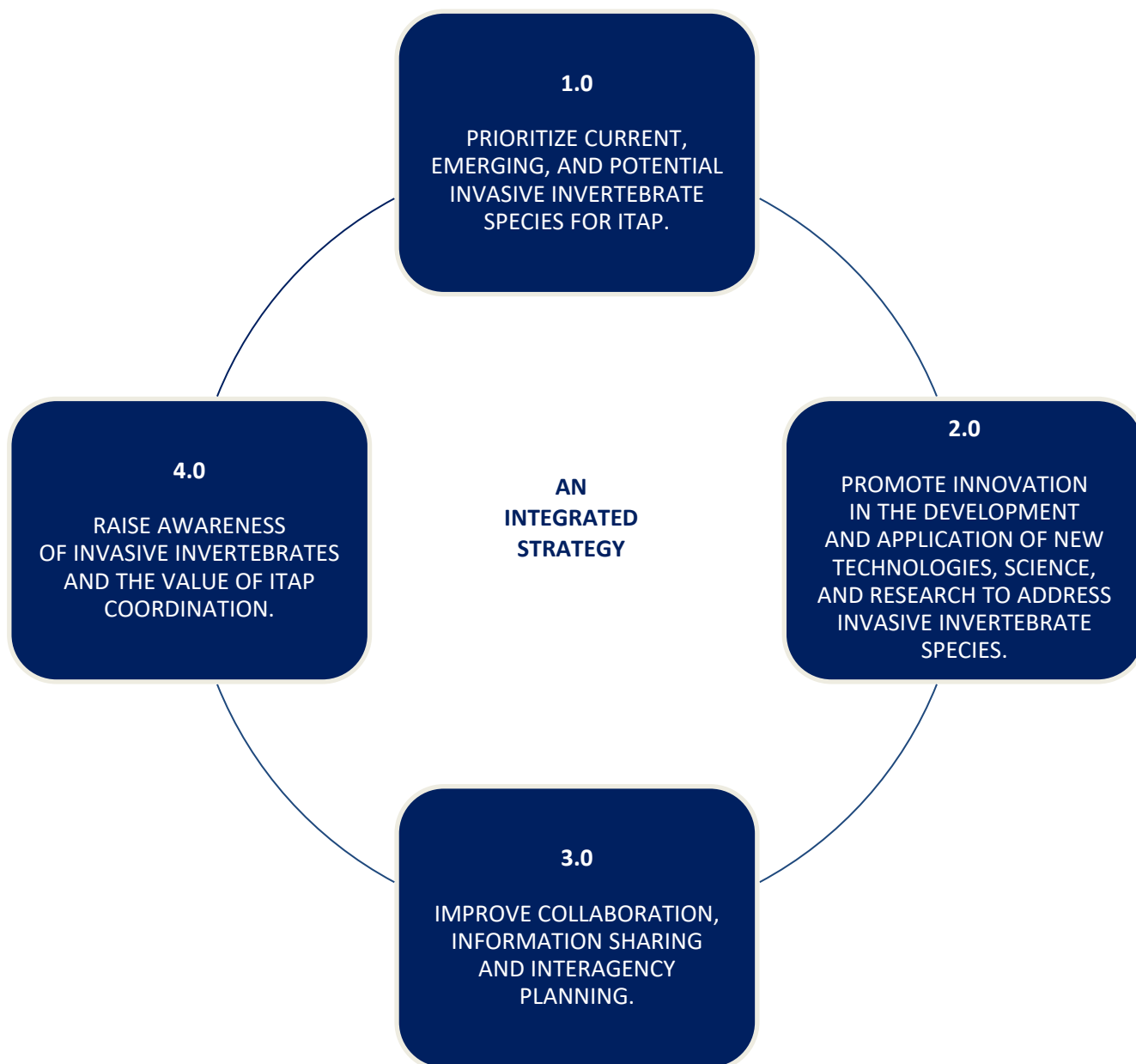
MISSION

Facilitate timely communication and action across federal agencies to address invasive invertebrate issues.

VISION

The Nation has a network that is prepared to prevent, respond and recover from the impact of high consequence invertebrate invasive species to ensure public health, economic viability, environmental and agricultural biosecurity and sustainability.

STRATEGIC GOALS



1.0 PRIORITIZE CURRENT, EMERGING, AND POTENTIAL INVASIVE INVERTEBRATE SPECIES FOR ITAP.

1.1 Identify and maintain a list of priorities and select the top five for focused research and management efforts.

- *Revise the list of the top 50 invasive invertebrate species to add to the Invasive Species Compendium; review APHIS list in progress/USGS List Version 3 for Invasive Species in this effort. Post the list of the top 50 invasive invertebrate species to the ITAP website. (FY20 Q2; L: Joyce Bolton)*
- *Compile different Agency criteria for listing invasive invertebrates. (FY20 Q3; L: Carlos/Annie)*
- *If appropriate, develop criteria for listing invasive invertebrates. (FY21 Q2, L: Carlos/Annie)*
- *Utilize experts across all agencies to identify potential priorities and select the top five for focused research and management efforts. (FY21 Q4; L: Carlos)*
- *Post the list of the top five invasive invertebrate species across agencies to the ITAP website. (FY21 Q4; L: Joyce Bolton, Carlos)*
- *Establish a list of the top 50 invasive invertebrate species to add to the Invasive Species Compendium. (FY18 Q4; L: Rosalind James) [Completed]*

Notes for goal 1

- *Wayne Whalen – APHIS-PPQ has a prioritized off-shore pest list of arthropod species that haven't been introduced yet (2015). Wayne-can you please send this list to me and I will share with the ITAP Invertebrates Subcommittee members?*
- *Without criteria – listing species is meaningless*
- *Have many different categories/criteria for invasive species:*
 - *Economic impact*
 - *Ecological impact*
 - *Total geographic impact*
 - *Potential for control*
 - *Ecological amplitude*
 - *How invasive are they*
 - *Invasion biology*
 - *Risks to foreign trade*
 - *Perception of invasive species varies by Department*
 - *I.S. impacts: natural areas, farmland, rangeland, forests, med./vet., etc.*
 - *Scale?*
 - *Genetic variability*
 - *Newly emerging problem invasive species*
 - *Geographic distribution*
 - *Western Governors have a top 50 invasive species list*
 - *Plants for planting lists*
 - *States have A, B, C lists*
 - *Working group was formed to work on this further: Annie Simpson, Tracy Leskey, Don Weber, Robin Rose, Rick Hellmich*
 - *A similar effort is underway in FICMNEW to develop criteria for listing invasive plant species.*

2.0 PROMOTE INNOVATION IN THE DEVELOPMENT AND APPLICATION OF NEW TECHNOLOGIES, SCIENCE, AND RESEARCH TO ADDRESS INVASIVE INVERTEBRATE SPECIES.

2.1 Support ARS efforts to sequence the top 100 Agricultural Pests.

- Query Agencies to define list of priorities (FY20 Q2, L: **Hackett**)
- Develop pipeline for getting sequencing done (FY20 Q3, L: **Hackett**)
- Support ARS sequencing of top 5-10 pollinators in USA (FY20 Q3, L: **Hackett**)

2.2 Identify and maintain a list of the top five overarching invasive invertebrate species research/technology problems to address.

- Illegal trade and importation of ants or other invertebrate pets (e.g. ants)? (FY20 Q2 – Ants, FY21 Q4 – Other, L: **Armando**)

2.3 Communicate priority gaps to Agencies.

2.4 Explore convening a meeting to develop a plan to address new technologies with potential collaborating agencies

- *Identify five gaps in research and new technologies. (FY18 Q4; L: Dawn Gundersen-Rindal) [Parking Lot]*

Notes

- *Detection/monitoring is a major gap (port inspectors haven't kept up; there is a generic flow of pests from foreign shipments)*
- *Lack of taxonomic expertise to I.D. new invasive species*
- *Doug Burkett – DOD has a Pest Management Research Requirements Report that he can draw from to identify research gaps Should be revised in coming year*

2.5 Identify and maintain a list of the top five gaps in education and extension. (Partially Complete)

- *Identify five gaps in education and extension. (FY18 Q4; L: Herb Bolton; PP#037) [Parking Lot]*

Notes

- *Lack of funding to train the next generation of scientists continues to be a major gap (e.g., in fields such as systematics; integrated pest management; biological control, etc.).*
- *Losing scientific expertise in a number of important invertebrate groups due to retirements.*
- *Without the scientific expertise, certain critical courses can't be offered or taught.*
- *NIFA has an Agriculture and Food Research Initiative (AFRI) - Education and Workforce Development Program that funds Pre- and Post-Docs, Secondary School teachers, and Research/Extension Experiential Learning.*

2.6 Reduce the cost of invasive invertebrate species management by applying national data networks.

- Explore the use of other networks such as National Ecological Observation Network (NEON) and make a recommendation. (FY20 Q4; L: **Annie? Kevin Hackett?**)
- Generate an annotated list of networks that could be used to help reduce impact from invasive species. (L: FY21 Q3, L: **TBD**)
 - Note: Need someone involved in data networks (Annie?)
- Facilitate the development and application of Pest Information Platform for Extension and Education (PIPE) and the National Plant Diagnostic Network (NPDN) for the top five invasive invertebrate species. (FY21 Q4; L: **TBD**)
 - (Find Representative) Joe Leforest (S Region IPM Center?) Tracy to connect with him.

Notes

- National Plant Diagnostic Network System (NPDN) – Early Detection and Rapid Response system for new invasive plant pathogens and arthropods.
- Pest Information Platform for Extension and Education (ipmPIPE) – provides real-time monitoring and reporting of invasive plant pathogens and arthropods.
- Integrated Pest Information Platform for Extension and Education (iPiPe) – currently has 28 ipmPIPE commodity projects for insect pests and plant diseases (see Appendix C).

2.7 Promote economic impact studies for the top five invasive invertebrate species. (completed, 2 published papers)

- Identify and recommend Subcommittee members to engage in economic impact studies for the top five invasive invertebrate species. (FY18 Q4; L: Rich Johnson; PP#040) **[Parking Lot]**
 - Guidance: Invite participation from the Economic Research Service (ERS), the National Agricultural Statistical Service (NASS), and other federal agencies.
- Identify and recommend economists, ecologists, and sociologists to conduct economic impact studies for the top five invasive invertebrate species. (FY18 Q4; L: Rich Johnson; PP#041) **[Parking Lot]**
- Identify and recommend the appropriate agency to lead the economic impact studies for the top five invasive invertebrate species. (FY18 Q4; L: Rich Johnson, PP#042) **[Parking Lot]**

2.8 Identify regulatory challenges and promote non-regulatory solutions for invasive invertebrate species.

- Publish series of research papers to highlight market changes contributing to the problem. (FY21 Q4, L: **TBD**)
- Support development of regulatory mechanism to address trade issues. (FY21 Q4, L: **Armando, S: Carlos**)
- Produce a series of research papers on topic of the consequences of the illegal trade of ants and other invertebrate pets. (FY21 Q4, L: **Carlos, Armando**)
 - Current status of illegal trade of ants
 - Ants as vehicle for intro of pests/pathogens of hymenoptera
 - Difficulties of rearing exotic ants
 - Domestic and international regulations of exotic arthropods
 - Includes new technology tools (Kevin do you have a reference for this paper?).

3.0 IMPROVE COLLABORATION, INFORMATION SHARING AND INTERAGENCY PLANNING.

3.1 Establish and maintain members from each agency to serve as representatives and to identify agency experts for the Invertebrates Subcommittee.

- *Recruit members from new agencies such as DHS, HHS, USGS, NASS, ERS, FWS, USFS, NPS, BLM, BOR, BIA, NRCS, NOAA, EPA, FDA, and others. (FY17 Q3/Ongoing; L: **Doug Burkett**, S: **All Subcommittee Members**)*
 - *Danielle Buttke recruited from NPS - 2017.*
 - *Robert Kula and Matt Buffington were recruited from USDA-ARS-Smithsonian Institute - 2017.*
 - *Vanessa Lopez FS 2018, Armando USADA APHIS. 2019; Ronald Ochoa ARS 2020 Bob Pfannenstiel APHIS 2020: Phil to reach out to FS, Doug same for DOD*
- *Invite speakers from appropriate agencies to share information. (FY18 Q4/Ongoing; L: **Bob Nowierski**, S: **Hilda Diaz-Soltero**)*

3.2 Recruit new and retain active Invertebrates Subcommittee members with the appropriate expertise.

- *Provide quarterly high-level overviews about ITAP, the Invertebrates and other SCs, their goals, and the wider roles and contributions across federal agencies (DOI, NPS, USDA, etc.). (Ongoing, L: **Hilda**)*
 - *Invite all members and external people at related agencies.*
- *APHIS Program Managers/Experts/Leads for nationally important invasive insects, reach out to them and invite to participate on specific issues (Ongoing, L: **TBD**)*
- *Provide mentoring opportunities (“buddy system”) for Invertebrate members to connect with longer-term members to answer questions about the SC, specific roles (e.g. Chairs, Exec Secs), and opportunities to engage and participate in ITAP actions and objectives. (FY20 Q2, L: **Kevin**)*
- *Engage directly with existing members, share the new work plan, and reinvigorate participation. (FY20 Q2, L: **Carlos**)*
- *Participate in two ITAP-wide and webinars per year to share progress reports, discuss ongoing activities, and raise issues as needed. (FY20 Q2, FY20 Q4, L: **Co-Chairs**)*
- *Host two Invertebrate webinars to share progress reports, discuss ongoing activities, raise issues, and invite guest attendees and speakers as desired. (FY20 Q2, FY20 Q4, L: **Co-Chairs**)*
 - *Invite members from other agencies to give talks at subcommittee meeting.*
- *Identify gaps in SC expertise and pursue new member to meet these needs. (FY20 Q3, L: **Carlos**)*
- *Update annual membership of Subcommittee rosters and participation in tasks. (FY20 Q4; L: **Carlos**)*

3.3 Maintain effective Strategic Plan and Work Plan management.

- *Post to the ITAP website. (FY18 Q1/Ongoing; L: **Carlos**, S: **Joyce Bolton**)*
- *Prepare an Annual Invertebrates Subcommittee Report and regular reports on Work Plan progress as needed to ITAP. (FY18 Q2/Ongoing; L: **Carlos**)*

4.0 RAISE AWARENESS OF INVASIVE INVERTEBRATES AND THE VALUE OF ITAP COORDINATION.

4.1 Address public perception regarding biocontrol agents and new technologies.

- *Hold a webinar with appropriate stakeholders to educate on biocontrol agents or new technologies, (FY20 Q4; L: **Bob P.**)*

4.2 Contribute critical information to the ITAP Website (include pest alert function-public websites). (Partially Complete) website not operational

- *Post accomplishments to the ITAP website (e.g. the list of the top 50 invasive invertebrate species). (FY17 Q3/Ongoing; L: **Bob Nowierski**, S: **Communications Subcommittee – Joyce Bolton**)*

FY20-21 CONSOLIDATED ACTION LIST

Goal 1: Prioritize current, emerging, and potential invasive invertebrate species for ITAP.

Actions	FY20 Q1	FY20 Q2	FY20 Q3	FY20 Q4	FY21 Q1	FY21 Q2	FY21 Q3	FY21 Q4
1. Revise the list of the top 50 invasive invertebrate species to add to the Invasive Species Compendium; review APHIS list in progress/USGS List Version 3 for Invasive Species in this effort. Post the list of the top 50 invasive invertebrate species to the ITAP website. (FY20 Q2; L: Joyce Bolton)		●						
2. Compile different Agency criteria for listing invasive invertebrates. (FY20 Q3; L: Carlos/Annie)			●					
3. If appropriate, develop criteria for listing invasive invertebrates. (FY21 Q2, L: Carlos/Annie)						●		
4. Utilize experts across all agencies to identify potential priorities and select the top five for focused research and management efforts. (FY21 Q4; L: Carlos)								●
5. Post the list of the top five invasive invertebrate species across agencies to the ITAP website. (FY21 Q4; L: Joyce Bolton, Carlos)								●

Goal 2: Promote innovation in the development and application of new technologies, science, and research to address invasive invertebrate species.

Actions	FY20 Q1	FY20 Q2	FY20 Q3	FY20 Q4	FY21 Q1	FY21 Q2	FY21 Q3	FY21 Q4
6. Query Agencies to define list of priorities (FY20 Q2, L: Hackett)		●						
7. Illegal trade and importation of ants or other invertebrate pets (e.g. ants)? (FY20 Q2 – Ants, FY21 Q4 – Other, L: Armando)		●						●
8. Develop pipeline for getting sequencing done (FY20 Q3, L: Hackett)			●					
9. Support ARS sequencing of top 5-10 pollinators in USA (FY20 Q3, L: Hackett)			●					
10. Explore the use of other networks such as National Ecological Observation Network (NEON) and make a recommendation. (FY20 Q4; L: Annie? Kevin Hackett?)				●				
11. Generate an annotated list of networks that could be used to help reduce impact from invasive species. (L: FY21 Q3, L: TBD) ● Note: Need someone involved in data networks (Annie?)							●	
12. Facilitate the development and application of Pest Information Platform for Extension and Education (PIPE) and the National Plant Diagnostic Network (NPDN) for the top five invasive invertebrate species. (FY21 Q4; L: TBD) ● (Find Representative) Joe Leforest (S Region IPM Center?) Tracy to connect with him.								●
13. Publish series of research papers to highlight market changes contributing to the problem. (FY21 Q4, L: TBD)								●
14. Support development of regulatory mechanism to address trade issues. (FY21 Q4, L: Armando, S: Carlos)								●
15. Produce a series of research papers on topic of the consequences of the illegal trade of ants and other invertebrate pets. (FY21 Q4, L: Carlos, Armando) ● Current status of illegal trade of ants. ● Ants as vehicle for intro of pests/pathogens of hymenoptera. ● Difficulties of rearing exotic ants. ● Domestic and international regulations of exotic arthropods. ● Includes new technology tools (Kevin do you have a reference for this paper?).								●

Goal 3: Improve collaboration, information sharing and interagency planning.								
Actions	FY20 Q1	FY20 Q2	FY20 Q3	FY20 Q4	FY21 Q1	FY21 Q2	FY21 Q3	FY21 Q4
16. Recruit members from new agencies such as DHS, HHS, USGS, NASS, ERS, FWS, USFS, NPS, BLM, BOR, BIA, NRCS, NOAA, EPA, FDA, and others. (FY17 Q3/Ongoing; L: Doug Burkett, S: All Subcommittee Members) - Danielle Buttke recruited from NPS - 2017. - Robert Kula and Matt Buffington were recruited from USDA-ARS-Smithsonian Institute - 2017. - Vanessa Lopez FS 2018, Armando USADA APHIS. 2019; Ronald Ochoa ARS 2020 Bob Pfannenstiel APHIS 2020: Phil to reach out to FS, Doug same for DOD	•	•	•	•	•	•	•	•
17. Invite speakers from appropriate agencies to share information. (FY18 Q4/Ongoing; L: Bob Nowierski, S: Hilda Diaz-Soltero)	•	•	•	•	•	•	•	•
18. Provide quarterly high-level overviews about ITAP, the Invertebrates and other SCs, their goals, and the wider roles and contributions across federal agencies (DOI, NPS, USDA, etc.). (Ongoing, L: Hilda) Invite all members and external people at related agencies.	•	•	•	•	•	•	•	•
19. APHIS Program Managers/Experts/Leads for nationally important invasive insects, reach out to them and invite to participate on specific issues (Ongoing, L: TBD)	•	•	•	•	•	•	•	•
20. Post to the ITAP website. (FY18 Q1/Ongoing; L: Carlos, S: Joyce Bolton)	•	•	•	•	•	•	•	•
21. Prepare an Annual Invertebrates Subcommittee Report and regular reports on Work Plan progress as needed to ITAP. (FY18 Q2/Ongoing; L: Carlos)	•	•	•	•	•	•	•	•
22. Provide mentoring opportunities (“buddy system”) for Invertebrate members to connect with longer-term members to answer questions about the SC, specific roles (e.g. Chairs, Exec Secs), and opportunities to engage and participate in ITAP actions and objectives. (FY20 Q2, L: Kevin)		•						
23. Engage directly with existing members, share the new work plan, and reinvigorate participation. (FY20 Q2, L: Carlos)		•						
24. Participate in two ITAP-wide and webinars per year to share progress reports, discuss ongoing activities, and raise issues as needed. (FY20 Q2, FY20 Q4, L: Co-Chairs)		•		•				

25. Host two Invertebrate webinars to share progress reports, discuss ongoing activities, raise issues, and invite guest attendees and speakers as desired. (FY20 Q2, FY20 Q4, L: Co-Chairs) • Invite members from other agencies to give talks at subcommittee meeting.		•		•				
26. Identify gaps in SC expertise and pursue new member to meet these needs. (FY20 Q3, L: Carlos)			•					
27. Update annual membership of Subcommittee rosters and participation in tasks. (FY20 Q4; L: Carlos)				•				

Goal 4: Raise awareness of invasive invertebrates and the value of ITAP coordination.

Actions	FY20 Q1	FY20 Q2	FY20 Q3	FY20 Q4	FY21 Q1	FY21 Q2	FY21 Q3	FY21 Q4
28. Post accomplishments to the ITAP website (e.g. the list of the top 50 invasive invertebrate species). (FY17 Q3/Ongoing; L: Bob Nowierski , S: Communications Subcommittee – Joyce Bolton)	•	•	•	•	•	•	•	•
29. Hold a webinar with appropriate stakeholders to educate on biocontrol agents or new technologies, (FY20 Q4; L: Bob P.)				•				