

INTRODUCTION TO PROJECT STINKY

IPRRG's Effort to Prepare a Global Pest Risk Assessment for the Brown Marmorated Stink Bug (*Halyomorpha halys*)

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RATIONALE

- IPRRG (formerly the International Pest Risk Mapping Workgroup) embraces a workgroup philosophy.
 - Value in communication
 - Greater value in products (research, outreach, and education)
- Three major IPRMW/IPRRG products
 - “Pest risk maps for invasive alien species: a roadmap for improvement” Bioscience 2010
 - “Advancing risk assessment models to address climate change, economics, and uncertainty.” Special Issue of NeoBiota 2013
 - “Pest risk modelling and mapping for invasive alien species” CAB International, Wallingford, UK

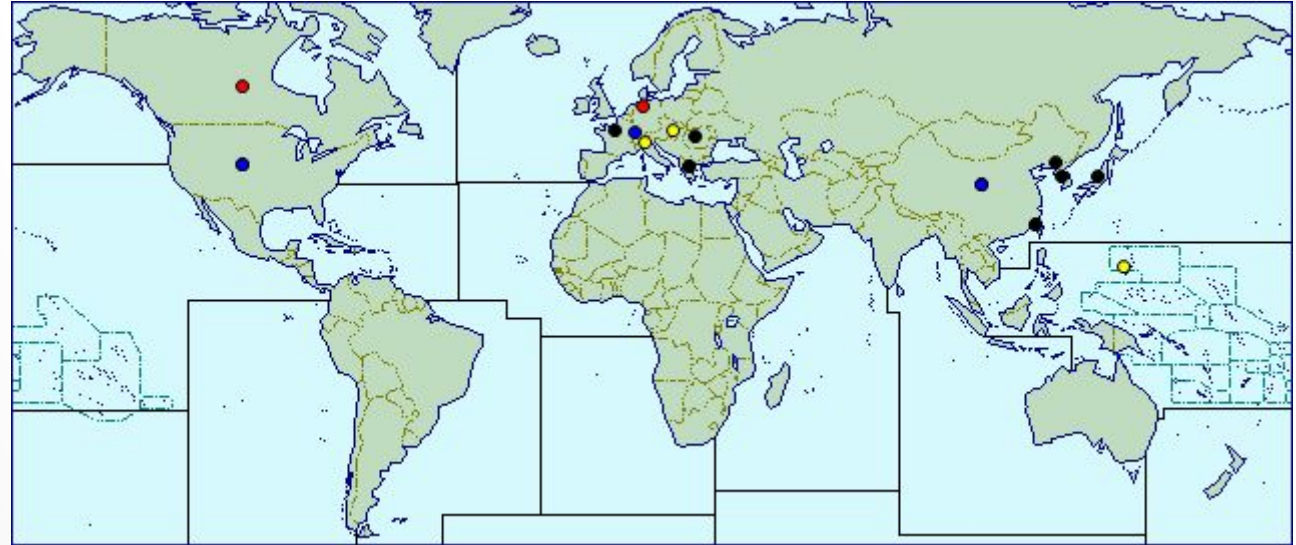


PHILOSOPHY

- International collaboration is useful:
 - Advance lines of research
 - Bring attention to ongoing work
- Participation in IPRRG projects is voluntary but valued
- Products show value of participation to the boss (il capo)

ORIGIN OF THE PROJECT

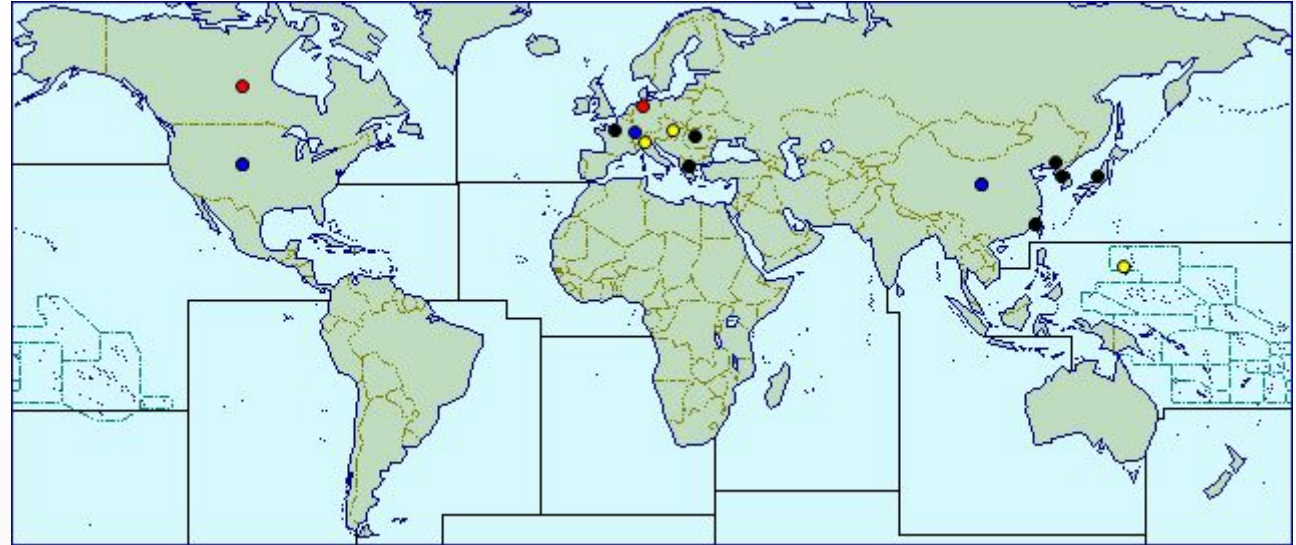
- “Project Stinky” emerged as a workgroup activity in August 2015 at the IPRRG meeting in Ft. Collins, Colorado, USA.
- Considered several alternative pests



Countries with *H. halys* (CABI, 2016)

ORIGIN OF THE PROJECT

- “Project Stinky” emerged as a workgroup activity in August 2015 at the IPRRG meeting in Ft. Collins, Colorado, USA.
- Considered several alternative pests
- Selected *H. halys* because:
 - Affects agriculture and natural resources
 - Has invaded from eastern Asia into USA, Switzerland, Canada, France, Germany, Greece, Hungary, Italy, Liechtenstein, Romania, and New Zealand
 - Many other countries are concerned about this insect



Countries with *H. halys* (CABI, 2016)

H. HALYS ADULT AND DAMAGE



OBJECTIVES FOR PROJECT STINKY

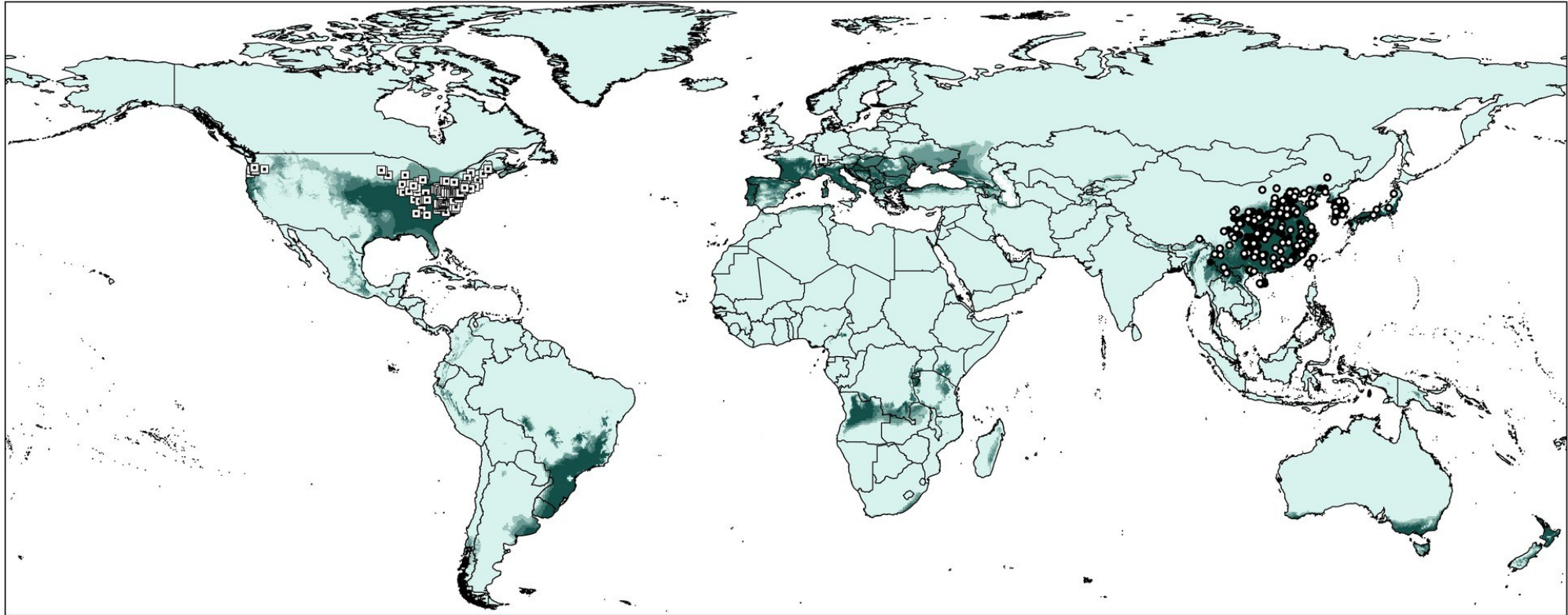
- Produce pest risk models and maps to assess the global threat posed by *H. halys* to agriculture, natural resources, and human welfare.
- Illustrate how thinking and modelling about pest invasion evolve as new information becomes available.
- Share insights about the modelling and mapping process with new pest risk analysts.
- Deliver map products and training opportunities based on *H. halys* to developing nations and others



APPROACH

- Divide into four sub-teams
 - **Entry** – Dan Borchert (USDA, APHIS, USA)
 - **Establishment** – Senait Senay (University of Minnesota, USA) & Richard Baker (DEFRA, UK)
 - **Spread** – Gericke Cook (USDA, APHIS, USA)
 - **Impact** – Darren Kriticos (CSIRO, Australia)
- Common, useful information sources shared on Google Drive
- Teams remain self-organized – currently many opportunities to contribute or lead

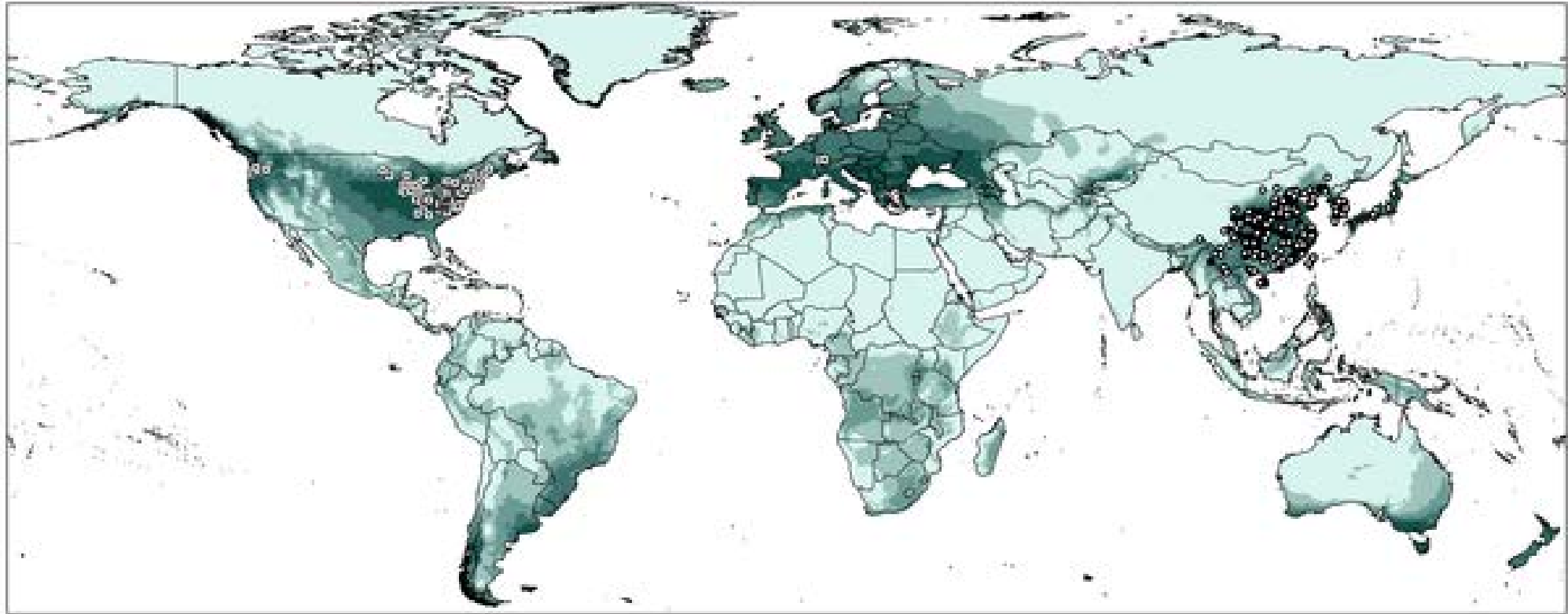
ONE MODEL OF GLOBAL CLIMATIC SUITABILITY FOR *H. HALYS* (ZHU ET AL. 2013)



Niche model based on reduced native records and transferred worldwide using GARP. Dark green color represents high suitability, light green indicates low suitability. White circles indicate the 95 occurrences used for model calibration, black dots and white squares represent the remaining native and the invasive records used for model evaluation.

doi:10.1371/journal.pone.0031246.s001

ANOTHER MODEL OF GLOBAL CLIMATIC SUITABILITY FOR *H. HALYS* (ZHU ET AL. 2013)



Niche model based on reduced native records and transferred worldwide using Maxent.

Dark green color represents high suitability, light green indicates low suitability. White circles indicate the 95 occurrences used for model calibration, black dots and white squares represent the remaining native and invasive records used for model evaluation.

<http://dx.doi.org/10.1371/journal.pone.0031246.g006>

ORIGINAL TIMELINE

- **2016** (This meeting) – Draft models presented to group. Receive reviews and comments.
- **2017** – Models completed. Work to integrate models from sub-teams begins.
- **2018** – Results are integrated into training exercises for pest risk modelling and mapping.

CHALLENGE OF THIS PHILOSOPHY

- Most members are very busy with normal work
- IPRRG projects are often not a priority for member organizations
- Projects can develop slowly
 - No progress to report yet from Entry or Spread teams
 - Spread team could use help with leadership
- *H. halys* is an active research topic for some IPRRG members
 - Avoid competition with IPRRG
 - Find ways for IPRRG to complement individual efforts

GOALS FOR TODAY

- Address any questions on Project Stinky
- Hear about research on *H. halys* from IPRRG team leads and others.
- Provide initial feedback on progress
- Identify those who are willing to contribute
- Discuss how progress could be made at the meeting and/or identify new workgroup activities





PLEASE FEEL FREE TO CONTACT ME

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