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## **Pollinator Politics and Policymaking: The Evolution of an Advocacy Coalition Framework of Representation<sup>1</sup>**

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*Given recent initiatives to make the US Department of Agriculture (USDA) more inclusive and diverse, thus upholding the title of “The People’s Department,” this study explores the evolving development of actor coalitions and policymaking brokers that impact a common public issue considered by many as a potentially harmful threat affecting our food supply. Politically and publicly acknowledged because the issues involve an impending crisis in the production of food crops resulting from pollinator collapse, the context of this crisis relates to the reported population decline of pollinators as reflected in honeybee winter hive loss of 30 percent per year since 2006 to Colony Collapse Disease (CCD). Without pollinators, one-third of the overall US total food supply is at risk of being lost. Using the analytical tool advocacy coalition framework (ACF), the results of this study present the representative diversity of policymakers and the subsequent coalition formation that influences and directs policy development, implementation, regulation, and oversight of this multidisciplinary policy domain. Also, primary actor relationships are identified and evaluated using network analysis. The study finds evolving and conflicting policy positions of the USDA, the 2015–16 Obama Administration/EPA, and congressional action articulated in the Agricultural Act of 2014. The policy directions from the policy actors/brokers are found to have been more politically motivated than directed by CCD scientific research.*

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A critical food sustainability issue for the United States, as well as the world, is the potential crisis in agriculture crop production as the population of pollinators decline. Without pollinators, close to one-third of the overall US food supply would be at risk of being lost. A foundational assumption of this analysis is that the American food supply is a common pool resource requiring common resource management methods and techniques. These common pool resource methods and techniques are also used by those who are engaged in the protection and output of the pollinator population resource. However, those who need to manage the pollinator common pool must navigate through a highly contentious and politically challenging policy decision-making process. It is common knowledge that when Congress and the US Department of Agriculture (USDA) deal with legislation or regulations that affect agricultural policy, they face pressure from an array of interest groups and coalitions. For example, within this policy domain, biotechnology firms lobby Congress heavily, as does a growing organic food industry that often disparages the safety of foods genetically modified to resist pests. Adding to these efforts, pollinator protection nongovernmental organizations (NGOs), research centers, and traditional pollinator communities all vie for a representative seat at this small table.

For several years, both the USDA and the Department of Interior (DOI) have acknowledged the need for healthy pollinators to support the country's agriculture needs. They have worked closely with states in conservation/education programs for both the agriculture sector and the public. Given this awareness, through diversity initiatives, the USDA has attempted to gain a better representation of the many faces of American agriculture by adding "seats to the table" (USDA 2016). Given the broad scope of the USDA and the public administrators leading these agencies, the USDA is often cited as the model that other groups or sectors should follow. The USDA's diversity initiatives promoted a way to produce an environment that fosters representative policymaking and policy change. It is within this more positive agency environment that pollinator policy had a chance to incubate and evolve. This study assesses the behavioral dynamics associated with the making of pollinator policy. What follows is a narrative that identifies various actors, actions, and results within the theoretical and analytical structure of an advocacy coalition framework (ACF) (Adam and Kriesi 2007).

The research narrative will first describe the pollinator policy domain, including a brief discussion of actor representation and the political nature of the domain. Second, there will be an analysis of actor coalition formation and behaviors using ACF theory and unique characteristics of the pollinator policy domain. Third, a macro network analysis of coalition relationships will be presented. Last will be a discussion of ACF theoretical attributes used in this

study as well as a more detailed finding addressing actor representation and diversification levels. The method used in this study to identify the pollinator policy in the ACF model involves qualitative textual reviews and analysis of House and Senate testimonies from the Library of Congress, USDA listening sessions transcripts, white paper publications from the White House Briefing Room, and NGO websites.

### **Nature of the Pollinator Policy Domain—Parameter and Attributes**

The first step in understanding the pollinator policy domain is to define what constitutes the pollinator population as well as the actors who are advocating for the pollinators' protection. Per the USDA's definition, pollinators can include bees, butterflies, moths, bats, and various birds, e.g., hummingbirds (USDA 2018). Both the US and world food supply are dependent on pollinator health and well-being. In the United States, about 23 percent of agricultural production comes from pollinator-dependent crops (Johnson 2010). Bond, Hunt, and Plattner (2014) also point out that "Through the provision of pollination services, honey bees support the cultivation of an estimated 90–130 crops, the harvest of which, directly and indirectly, accounts for up to a third of the U.S. diet" (4). Outside the United States, Gallai et al. (2009) estimate that the 2005 world agricultural economic production and consumption level dependence on these pollinators was in the range of 9.5 percent. However, this highly valued agriculture necessity is in jeopardy. Since 2006, commercial beekeepers in the United States have reported honeybee colony loss rates increasing to an average of 30 percent each winter, compared to historical loss rates of 10 to 15 percent. In 2013–14, the overwintering loss rate was 23.2 percent, down from 30.5 percent the previous year but still higher than historical averages. Since 2006, this loss has been attributed to an ill-defined disease, colony collapse disease (CCD) (Briefing Room 2014). In summary, the impact of pollinator loss on US food sustainability can be encapsulated in the statement from the Pollinator Health Task Force:

Pollinators are critical to our Nation's economy, food security, and environmental health. Honey bee pollination alone adds more than \$15 billion in value to agricultural crops each year and provides the backbone to ensuring our diets are plentiful with fruits, nuts, and vegetables. Through the actions discussed in this strategy, and by working with partners across our country, we can and will help restore and sustain pollinator health nationwide. (Pollinator Health Task Force 2015, ii)

The policymakers, who are the actors/brokers, have taken action to address this critical food sustainability issue in both the 2014 Farm Bill and the Obama White House's efforts to create a Pollinator Health Task Force in 2015. The latter was an attempt to set strategic policy objectives and actions to reverse the decline of the pollinator population. Also, approximately two to three years before this attempt, the traditional pollinator communities (small beekeeping operations and large pollinator/honey producers) and large pollinator NGOs (Xerces Society for Invertebrate Conservation, Pollinator Partnership, Honey Bee Health Coalition, and North American Pollinator Protection Campaign) formed an informal group to advocate for a national pollinator policy. This informal group, working with the administration (USDA/EPA/DOI), congressional leaders, and the White House formed a disjointed but concerted effort to construct a pollinator policy. This effort to develop and create policy has been and continues to be done in an evolving diverse and dynamic political environment.

### **ACF and the Pollinator Policy Domain**

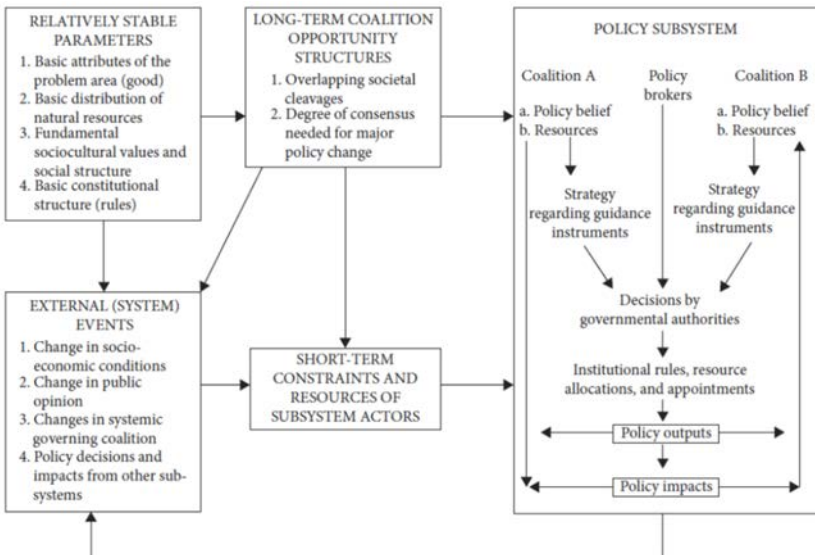
Using ACF's theoretical lens, the study's research questions can be narrowed to the following specific areas of analysis. These micro research questions will also be used to guide the application of ACF in this policy domain and, by doing so, contribute to expanding ACF theory.

- How funding levels and research resources are external and internal constraints that influence the formation of coalitions by policy subsystem actors/organizations.
- How belief systems founded on one of the CCD causal stress factors are used as a catalyst for specific organizational actors to create "change" policy coalitions.
- Given actors in this policy area are organizational units, whether social psychology theories can explain coalition relationships between organizational actors' behaviors.
- Whether ACF can be used to analyze and evaluate coalition actors in a political dynamic and evolving policy domain given changing policy parameters and direction.

- Whether the level of representativeness of certain organizational actors in the system is constrained, which can impact their ability to be legitimate, influential decision-makers in the policymaking process.
- Whether the degree of consensus on the scientific findings of CCD has led to the need to create new pollinator policies.

As a preface to the application of ACF, it should be noted that scant research has been conducted on the representativeness of coalitions within the pollinator policy domain or on the diversity of actor representativeness in the federal and state bureaucracies that may form pollinator policy. Most of the literature addressing the issue of bureaucratic diversity in this policy domain can be found on USDA, EPA, and DOI websites as well as the websites of various pollinator NGOs. Therefore, this study is presented as new research on the representative politics of the pollinator policymaking process. The following will address each ACF attribute in Figure 1 as it applies to the pollinator policy evolution.

**Figure 1: ACF Structure**



Source: Sabatier and Weible (2007, 202).

Figure 1 illustrates the analytical structure of ACF that Sabatier and Weible (2007) proposed. Each ACF analytical attribute (boxes) will be applied to the pollinator policy domain; however, we will focus on the Policy Subsystem attribute as described in Figure 1. The Policy Subsystem identifies actions that coalitions take to begin formulating a policy that ends in governmental action. While the Policy Subsystem may seem the most politically dynamic attribute, it also defines the value norming process within the coalition actors. This norming creation, per ACF theory, is the active driver of policy development.

Moving back from the governmental policy development of the Policy Subsystem, the center two attributes, Long-Term Coalition Opportunity Structures and Short-Term Constraints/Resources of Subsystem Actors, are the coalition building activities. As the title indicates, the level and number of opportunities internal to the subsystem itself constrain the building of coalitions within the subsystem. Moreover, numerous factors, including actors' resources as well as external influences, limit the building process. These activities are the most dynamic regarding consensus-value building behaviors and political relationships. Indeed, Sabatier and Jenkins-Smith (1999, 131–33) identified the significance of coalition-value building by categorizing the coalition belief structure as:

- Deep core beliefs—fundamental personal philosophical beliefs that are very difficult to change.
- Policy core beliefs—fundamental policy positions concerning the strategies for achieving core beliefs.
- Secondary beliefs—specific to the topic and may be changed by interactions and learning within the policy sub-system and across coalitions.

The two attributes on the left, Relatively Stable Parameters and External (System) Events, define the domain's limits of action and identify significant external influences that will impact coalition consensus-building and creation within the policy domain. The arrows in the diagram indicate the defining influences and creative processes. These influences and processes guide coalition building activities and, ultimately, policy creation. However, it is also important to understand that ACF is a closed-loop system where new policy may impact both the original policy parameters and create different external influences, thus making the system very dynamic and unstable. Sabatier and Jenkins-Smith (1999) pointed out that ACF is, indeed, a policy-oriented learning

system. As Figure 1 indicates, in the Policy Subsystem attribute, the internal arrow indicates the presence of dynamic learning feedback taking place within the coalition as policy formulation is occurring.

### **Applying ACF Attributes to the Pollinator Policy Domain**

#### **Relatively Stable Parameters and External (System) Events**

Per the ACF structure, the analysis begins with identification and evaluation of the parameters' stability that define the policy domain, as well as any external factors or events that may influence actors' behaviors within the policy domain. An identified structural parameter of the study is the USDA and the Obama administration's policy positions authored in 2012–14 and 2015, respectively. These policy positions were framed in the Agricultural Act of 2012–14 Farm Bills and the 2014–16 White House Pollinator Health Task Force.

As previously outlined, pollinator policy is broad and encompasses many pollinator species. However, most biological research of CCD has gone into the study of honeybees, as opposed to the native "unmanaged" species. Therefore, the present study uses the formulation of a honeybee policy as a parameter that defines coalition actors. Given this parameter, it is important to understand further the composition of the "honeybee community," other participants in honeybee management, associated advocates, and others. Per the US Department of Labor's Bureau of Labor Statistics (BLS) Quarterly Census of Employment and Wages Report 2012, 2,552 individuals comprise the honeybee management community. This number reflects those who were employed full time in the US apiculture or beekeeping sector (Bond, Hunt, and Plattner 2014, 1).

The beekeeping sector includes three groups. The first is small traditional beekeeping operations, where the primary focus is on small honey production units for personal honey consumption. The second is very similar to the traditional groups; however, honey sales are considered a side occupation of the beekeeper. The act of pollinating food crops is a secondary objective to these traditional bee managers. The last group consists of large honeybee commercial management community members who provide pollination services to the fruit-and-nuts agribusiness food production sector. These large economic concerns are also able to sell commercial honey to large food distribution entities. The BLS number is more reflective of the latter participant (Bond, Hunt, and Plattner 2014).

Besides these policy actors, other tangential actors exist that influence the pollinator Policy Subsystem, creating a "fuzzy" parameter. These actors may include conservationists and organic farmers as well as university/corporate researchers who are advocates of native pollinators; these pollinators may include wild honeybees, bumblebees, various wasps, and the Monarch butterfly. While these species of pollinators contribute to the overall success of crop

pollination, the policy objective of these native pollinator actors is different from the honeybee production coalition actors (Katz 2011). This difference in policy objective has recently become a counter-policy effort (USDA 2017).

Additionally, the ACF structure provides context to an increasingly prominent external event. From 2006 to the creation of the 2014 Farm Bill and the 2015 White House Task Force, a new socioeconomic external influence was making value inroads with crucial pollinator coalition actors. Specifically, the US population was beginning to demand healthier food product choices, such as organic products. This demand, as we shall see, plays a significant role in defining values and beliefs for pollinator policy actors.

### **Long-Term Coalition Opportunity Structure and Short-Term Constraints and Resources of Subsystem Actors**

Widespread discussion of the decline of pollinator populations, a decline that was observed in all pollinators but was particularly severe in the honeybee population, began in 2006. However, it was not until the 2012 Farm Bill that a pollinator policy, the first long-term coalition opportunity, began to crystallize by acknowledging the decline's potentially sizable adverse effects. In recognition of the significance of CCD, the 2012 bill created a conservation policy to be directed by both the USDA and DOI. The intent was twofold: first, conservation education in conjunction with states; and second, research funding to better understand the causal factors of CCD. Two years later, Congress passed a new 2014 Farm Bill with a small section addressing CCD that again only supported a conservation approach to the problem. With the bill's passage, the first pollinator policy/political triad coalition was forming between traditional beekeeping actors, the bee management community, and NGOs. This relationship was to continue to expand with new organizational actors until 2014 (House Agriculture Committee, Subcommittee on Horticulture, Research, Biotechnology and Foreign Agriculture 2014).

### **Policy Subsystem—Evolving Representation of Pollinator Management in Federal Policy Decision-Making**

Through applying the Policy Subsystem section of the ACF, the pollinator policy domain begins to emerge with identifiable organizational actors. The first step is the value norming of the organizational actors that define their respective relationships. As the process pertains to CCD, Holy (2008) explains that actor norming began in the early 1990s, when beekeepers and pollinator service providers, both considered pollinator managers, first became aware of the pollinator population reduction. However, a public level acknowledgment of the problem did not occur until the second half of that decade. Further, the international bee community began discussing CCD before it was an issue in



the United States. Eventually, a combination of scientific researchers and NGO pollinator organizations began to explain the nature of the potential problem and make US policymakers more aware of the issues. While published research at the international level reported a similar rate of decline, the causes remained shrouded in mystery. Awareness of the decline became a foundational norm of all coalitions that had formed or that were in the process of forming. A second value proposition sprang from the early formation of the North American Pollinator Protection Campaign (NAPPC) from 2000 to 2003. The mission of this organization was to consider all pollinator populations, natural as well as managed. In their view the issue was the loss of natural habitat, noting that even managed pollinators are only partially managed (Katz 2011).

With prompting from these early forming set of collective actors, in 2004 the US Department of Agriculture and US Geological Survey provided funding to the National Academy of Sciences, National Research Council, “to examine data on pollinator status in North America” (Holy 2008, 5). This examination was an attempt to determine the rate of decline, potential causes, consequences on both agricultural and ecological systems, and what future research and monitoring are required. Furthermore, the examination was to provide suggested conservation and restoration steps to reduce or halt the population decline (Holy 2008). This research effort identified a fundamental value proposition in the norming formation of the subsequent organization coalitions.

As noted previously, while actor representation is not directly addressed in ACF theory, it is crucial to this study given the evolving nature of the pollinator policy domain. The dynamics of this environment make individual actors, as well as organization actors, important to fully understand the development of pollinator policy. An indicator of representation type and level can be found in the composition of the 2006 National Academy of Sciences Status of Pollinators in North America committee membership. The committee was an early attempt to understand the health of North American pollinators and to suggest policy direction. The critical point for this study was the membership representation, which consisted of three federal agencies, eight universities from the United States, and two Canadian universities (Holy 2008). What is interesting about this committee membership is the absence of any pollinator community managers or traditional beekeepers. While this can be understood given the investigative nature of the Academy of Science examination, it also means these actors were at best passive representatives in the findings of the committee. They contributed to the research but not to the committee’s conclusions. However, it was this report that publicly identified a disease as the cause of pollinator colony collapse of honeybees, CCD (Holy 2008).

Given the recommendations of the Academy of Science/USDA committee’s findings, as well as significant media coverage and lobbying efforts from

pollinator NGOs, congressional leadership took notice. Compared to the Academy of Science 2006 pollinator report, a more representative group of participants from the pollinator community gave testimony to the 2008 House Agriculture Subcommittee. Of the ten witnesses, 20 percent were pollinator managers. If the pollinator NGO witnesses are counted, then half of the witnesses were active representatives of the actual pollinator community (House Agriculture Subcommittee on Horticulture and Organic Agriculture Hearing 2008). Including these community members indicates that primary pollinator management actors once again were directly influencing agriculture policy decision-makers.

Even with the greater representation by the pollinator community, the recommendation of the 2008 Farm Bill followed objectives similar to those suggested in the Academy of Science report, including more funding for conservation initiatives. In summary, under the Conservation Title within the 2008 bill, the subcommittee recommended: “(1) the development of habitat for native and managed pollinators; and (2) the use of conservation practices that benefit native and managed pollinators” (Holy 2008, 17). A separate section of the Farm Bill contained provisions for opening National Forest System lands by:

(A) allowing for managed honey bees to forage on National Forest System lands where compatible with other natural resource management priorities; and (B) planting and maintaining managed honey bee and native pollinator foraging on National Forest System lands where compatible with other natural resource management priorities. (House of Representatives 2014, sec. 7209, 241)

Lastly, the Farm Bill acknowledged the status of all pollinators (House Agriculture Subcommittee on Horticulture and Organic Agriculture Hearing 2008).

### **Policy Subsystem—Use of CCD Causal Factors as Coalition Values Formation**

The acknowledgment by Congress was welcome, but little had been done to address the issue of CCD or to hear testimony concerning this plight. It was clear that thematically, any congressional action from the 2006 committee report through the 2014 Farm Bill CCD was to be considered a problem of land conservation (House Agriculture Subcommittee on Horticulture and Organic Agriculture Hearing 2008).

The pollinator CCD issue was then to be examined as a conservation issue and resolvable as such. Given this approach, actor coalition formation used

conservation as a critical value proposition from 2008 until the 2014 Farm Bill. The Natural Resources Conservation Services (NRCS) was the lead agency that managed the 2008 Farm Bill directives through the passage of the 2014 Farm Bill. The only deviation to this approach was an addition to the conservation effort through an EPA funding channel. This additional funding provided resources to various research centers that were attempting to determine CCD causal factors. However, even with this extra research funding, by 2017 there was still no consensus as to what CCD was or how to correct it (Environmental Protection Agency 2017; Suryanarayanan 2015).

Commencing in 2014 and continuing through 2016, the Obama White House created a Pollinator Health Task Force whose objectives paralleled the pollinator policy objectives found in the 2014 Farm Bill. The White House Pollinator Health Task Force membership was comprised of agencies from both USDA and DOI and would eventually include the EPA. The result of this parallel pollinator policy effort was the creation of a duality in the federal political policy-brokering sources, i.e., Congress and the White House Task Force. However, the political environment between the Democratic Obama administration and Republican congressional leadership was very dynamic and unstable. This unstable relationship became a new external force to the existing pollinator Policy Subsystem. Given that the Policy Subsystem, per ACF theory, is a closed system with feedback loops, a change in the belief structure and norming values were created by this new political brokerage duality. Existing coalitions' belief structures change to match the respective brokers' differing policy approaches. This change in coalition behavior became especially true as the White House Pollinator Health Task Force began to focus specifically on the use of pesticides as a CCD causal factor. The result of the value re-norming within the Policy Subsystem spawned new coalitions (Pollinator Health Task Force 2015).

The White House Pollinator Health Task Force was influenced by the growing public attention to the use of pesticides as a health hazard as well as a potential CCD causal factor. However, the Republican-controlled Agriculture Subcommittee was not (Foran 2014). Given this enhanced publicity and pressure from environmental groups outside of the pollinator community, an effort was made during the 2013 congressional hearings to approve and pass a companion bill, H.R. 2692 (113th): Saving America's Pollinators Act of 2013. Democratic minority members of the subcommittee, as well as other cosponsors, introduced the bill. In all, 78 members of Congress, all Democrats, cosponsored this bill. The purpose of the bill was to take the lead from European counterparts and restrict the usage of neonicotinyl (or neonic) insecticides (neonicotinoids), "the world's most widely used insecticides, whose usage in the US has risen dramatically since 2003" (Suryanarayanan 2015, 149). The

introduction of this pesticide in 2003 also correlates with the increased decline in the pollinator population (Holy 2008). However, efforts to pass H.R. 2692 out of the committee were unsuccessful. Nonetheless, this shift in perceptions of CCD's causal factors now created new values and belief structures, both "for and against" pesticides, in the Policy Subsystem. Again, as changing belief and norming values increased, coalition organizational actors began to shift.

Soon after the passage of the 2014 Farm Bill, a second hearing of the House Agriculture Committee's Subcommittee on Horticulture, Research, Biotechnology, and Foreign Agriculture took place to review progress in pollinator health and review CCD findings. It is important to note that participants in the hearing consisted of only four witnesses: two from the pollinator management community, one from the USDA, and the other a new coalition actor from Bayer North American Bee Care Center. The reason for including the new witness was pending research findings stating that a leading cause of CCD was the systemic use of the neonic pesticide, of which Bayer is one of several worldwide producers. Any change in the use of this pesticide would have two significant economic impacts. First, in revenue alone, neonic pesticide sales were valued as a multibillion-dollar worldwide market. Second, neonic pesticides were estimated to have increased the overall gross value of the crop agriculture sector by five times (Foran 2014). The new coalition actors, pesticide manufacturers and agribusinesses, had an immediate influence on the Policy Subsystem structure. The result was the "birthing" of new or energizing of existing coalitions that would oppose new influences on the policy brokers.

The growing policy problem was becoming apparent. As noted before, research findings of the root cause of CCD were still very unclear, yet actor coalition value structures were solidifying and forming new relationships around suspect CCD factors. Even before the 2012 Farm Bill's passage, public and private research facilities had been attempting to identify and address the causal factors of CCD, yet by 2015 nothing was certain (Suryanarayanan 2015). What made the root causal factor research so tricky was the very nature of CCD. Pathologically, it is not a single disease strain but in fact a mix of environmental factors, parasitic infestations, pesticides, and domestication. While suspected in 2015, as of 2017 the following five factors were thought to be the leading causes of CCD; however, collective research findings would not declare these factors as the definitive list:

1. Pests (e.g., varroa mite), pathogens (e.g., the bacterial disease American foulbrood), and viruses.
2. Poor nutrition (e.g., due to loss of foraging habitat and increased reliance on supplemental diets).
3. Pesticide exposure.

4. Bee management practices (e.g., long migratory routes to support pollination services).
5. Lack of genetic diversity.  
(Environmental Protection Agency 2017; Suryanarayanan 2015)

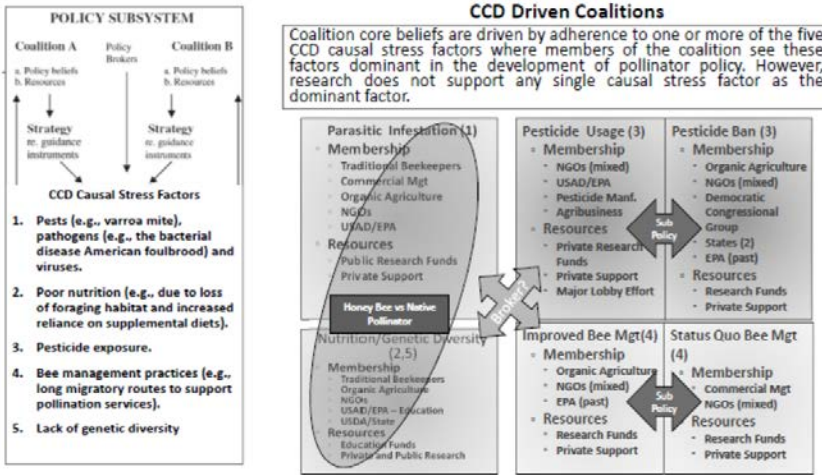
Given this lack of clarity in the pathology of CCD, this study did find that the use of pesticides still had created a highly dynamic political environment causing instability in pollinator policy decision-making.

Regardless of the lack of any definitive CCD findings by 2014, adoption and adherence to specific causal factor(s) began to create coalition value/belief structures that defined relationships and led to politically driven pollinator policy efforts. In addition to the introduction of these new organizational coalition actors, existing organizational actors also begin to embrace these perceived but unproven CCD causal factors to redefine existing coalition beliefs and values. As noted above, by 2015 CCD factors began to include nonenvironmental and biological causes. For example, one leading pollinator NGO, Xerces Society for Invertebrate Conservation, found that honey production management practices by both beekeepers and pollinator service providers were potentially causing malnutrition and hive stress (Keim 2012).

Again, as Sabatier and Jenkins-Smith (1999) point out, in the ACF model a motivation driver in coalition formation is the cohesion of actor policy values and the creation of like belief structure. Figure 2 attempts to explain how the use of CCD causal factors came to articulate the coalition value propositions as well as direct the formation of like belief structure. Using Figure 2, this study has identified at least four organizational actor coalitions formed around the CCD causal factors as value statement: parasitic infestation, nutrition/genetic diversity, pesticide usage, and bee management practices.

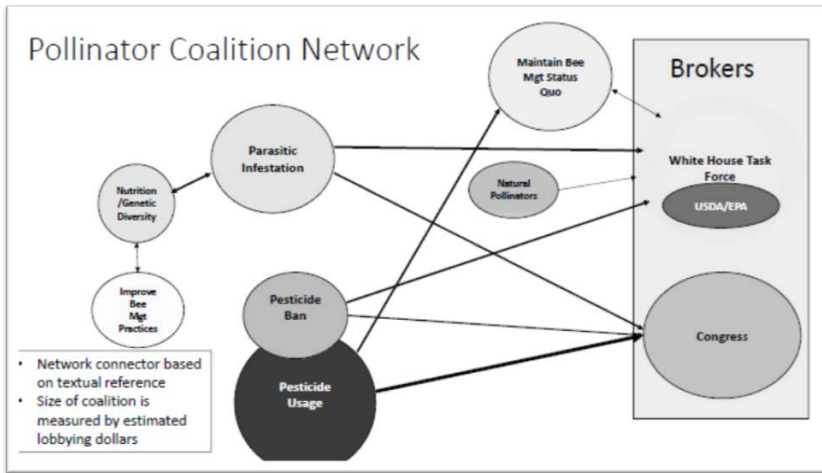
Figure 2 outlines the membership in each coalition; for example, the parasitic infestation coalition is comprised primarily of the following organizational actors: traditional beekeepers, research labs, and organic farming NGOs with assistance from the EPA and USDA. However, these same organizational actors, per their belief in another CCD causal factor, have created an additional coalition founded on nutrition/genetic diversity concerns. Further, as Figure 2 indicates, newer coalitions have formed around the use or nonuse of pesticides. Each side creates counter-coalitions to provide different pro and con value structures. By analyzing the subsystem configuration in Figure 2, an interesting ACF structural framework configuration was discovered. It appears that coalition formation around these causal factors has created a new policy subsystem secondary layer made up of coalitions existing only in opposition to contrary value positions. It could be argued that this new structure is a micro-policy subsystem. In this analysis, a similar coalition structure, one addressing bee management practices, is also formed.

Figure 2: CCD Driven Coalitions



What also makes this ACF analysis both interesting and difficult is the emergence of a new and unanticipated overlapping pollinator policy subsystem, native pollinators. The focus of this analysis has been the honey bee pollinator; however, the native pollinator brings to the discussion different policy issues and concerns. This new native pollinator coalition, formally recognized by the USDA in 2017, is made up of new NGO organizations and academic interests around the native pollinators, especially native bee populations (USDA 2017). These native bee pollinators fall outside of the more domesticated managed honeybee population and include such species as bumblebees, European honeybees, alfalfa leafcutter bees, and unmanaged bee populations. Moreover, the value proposition of the native pollinator coalition is very different. First, this native pollinator coalition sees CCD as a domesticated managed honeybee problem because colony collapse has not occurred significantly in the native bee pollinator population. The conclusion is that solutions for a domestic managed bee population are not needed for native pollinators and, in fact, the honeybee CCD solutions may be harmful to native pollinator populations. Second, the native pollinator coalition wants to push toward some form of separability between the two bee pollinator populations, which is a counter policy to the conservation guidelines of both the 2012 and 2014 Farm Bills. While small, this coalition has now created a presence within the pollinator policymaking domain (USDA 2017).

**Figure 3: Pollinator Coalition Network**



**Macro Network Analysis of Actor-Broker Relationships in the Pollinator Policy Domain**

As an extension of the ACF model, a macro network analysis is applied to define specific coalition paths and dependencies. The previously identified coalitions are viewed as forming an internal policy value/belief cohesion structure (Figure 2). The network diagram (Figure 3) illustrates the relationships between cooperating and competing coalitions, including the policy brokers, USDA/EPA (White House Task Force) and Congress, based on similar interests and policy positions in contrast to the previously identified policy value and belief structures.

The dynamics of this network is caused by the changing representative membership and political conflict between brokers and was demonstrated in the development of the Obama White House Pollinator Health Task Force June 2014 Presidential Memorandum, “Creating a Federal Strategy to Promote the Health of Honey Bees and Other Pollinators,” and by congressional intent in the 2014 Farm Bill. As discussed before, the Task Force’s initial stated purpose was to support the 2014 Farm Bill by developing within a year a supporting strategic action plan. The USDA was to direct the task force; active membership primarily consisted of other agencies throughout the executive branch. The resultant action plan addressed the strategic objectives with one major addition. The Task Force objectives and strategic plan changed when the Obama administration specifically

chartered the EPA to assess the effect of pesticides, including neonicotinoid insecticides, on the health of bees and other pollinators and to take appropriate actions to protect pollinators (Pollinator Health Task Force, 2016). This action by the Administration was counter to congressional intent, since the 2014 Farm Bill did not specifically address any CCD causal factors, including the use of pesticides or that of commercial bee management practices. Again, as presented before, Congress not only took a passive approach to these topics but developed a conservation plan supporting state education programs and forest land use.

The passivity of Congress as a policy broker, as opposed to the more aggressive White House Task Force position, elevated the dialogue and eventually changed the coalition representation in policy decision-making. This changing condition is seen in the representation of the traditional beekeeping/small commercial bee management actors, who ultimately were given a weak representative role, partially because of their limited lobbying resources (Foran 2014). The NGO actors, however, played a very active role in this network, while the pesticide producers and agribusinesses developed the most substantial network relationship with the congressional policy brokers. As one indicator of the organizational actors' political strength in the pollinator network, in 2014 the pesticide producers' lobby investment reached \$2.4 million, while the total lobby investment by the NGOs and pollinator management community was approximately \$23,000 (Foran 2014).

What is not found on the network diagram is the changing political relationship between the policymaking brokers: A Democratically controlled White House administration and a Republican-controlled congressional agricultural committee and subcommittees. As indicated in the above narrative, prior to the 2016 presidential election, it was reasonably apparent the CCD issue had been politicized by the introduction of the pesticide issue without confirmed research findings. The Republican 2014 Farm Bill did not address pesticides as a causal factor in CCD, while the Obama Presidential Task Force action plan devoted an entire section to the continued study and regulation of the neonic pesticides (Pollinator Health Task Force 2016). The finding from this study is that the apparent political tension in the pollinator policy domain appears contrived given the state of current CCD research. The major conflict focuses on the use of pesticides as a CCD causal factor. However, the study research finds that pesticides are identified only as a potential contributor and does not single them out as the root causal factor of CCD. This ancillary issue has diverted attention from the pivotal point of creating a pollinator policy around restoring colony health with the participation from the traditional honeybee management community. Policymakers seem to have lost sight of the original issue and objectives.



However, a recent evaluation of the 2018 political environment on pollinator policy finds that the Trump administration has moved away from the Pollinator Health Task Force direction and has adopted actions supporting a continuation of the 2014 Farm Bill policies. This would include more state involvement and ownership in managing a CCD solution. At the same time, the administration has been mute on pesticide control; also, it is not clear whether the Pollinator Health Task Force is still operative. These points maybe significant given that the 2018 congressional legislative plan is to pass a farm bill; it is not clear how the bill will address the issue of pollinator health. Indeed, pollinator policy is still in limbo (USDA 2018).

### **Summary Remarks and Findings:**

#### **ACF Theoretical Behavioral and Environmental Attribute Extensions**

This study stretched the ACF tool's normal application in two areas: applying it to an evolving political environment rather than a historical static state, and defining the term actors as organizations rather than individuals. These two theoretical anomalies, while missing in any extended ACF literature discussion, were not felt to limit the use of ACF model in the determination of representative diversity of the stakeholders or actors in a complex, evolving, and politically dynamic pollinator policy domain. Past agriculture policy researchers had used similar modeling to explain politically complex stakeholder-actor relationships in this policy domain (Bernstein 1955; Fristschler 1989). Likewise, any concern in changing the meaning of "actor" from individual to organization was not considered as a limitation but, to the contrary, an extension of the ACF theoretical framework. Both ACF changes resulted in an increased understanding of the multi-faceted agricultural policy domain in general and the pollinator policy domain specifically. Actors involved in agricultural policies may span a variety of disciplines, including agribusiness, health, government, science, and environmental interests. The content and level of organizational actor representation within the pollinator policy domain is but a microcosm of this larger agriculture policy area (Bernstein 1955; Fristschler 1989).

As a further clarification of ACF's nonstandard use in this study, it is important to consider two positions that were embraced. In ACF theory, individuals with shared beliefs or advocacy of an issue form coalitions but display Simon's definition of bounded rationality with constraints such as political feasibility and access to decision-making processes (Simon 1985). In this case, while it stretches this notion of bounded rationality from individual to organizational actors, Simon's constraints to organizations as policymaking actors still apply. Displaying individual bounded rationality behavioral attributes, organizations were the key political actors driving the creation of this new policy domain decision-making process. The second position was the application of

individual attribution theory to describe organizational behavior. Organization coalition formation is the ability for organizations to recognize like beliefs, values, and intentions. It is the ability to recognize or attribute to other like organizations that become the impetus to create coalitions with common objectives and goals (Fiske 2014). While this is presented as new to ACF theory, it is also an example of ACF theoretical strength and adaptability. Weible (2007) demonstrates this strength and adaptability of ACF in a study that explores how stakeholders, such as state and federal government officials as well as nongovernmental officials, including scientists, environmental groups, and industry representatives, collaborate and disagree on certain components of marine protected areas within California. As with this study, Weible uses ACF to understand how agreements are reached, how allies are made, and how the behavior of influential actors in the policymaking process impacts others. This study demonstrates the use of ACF in a highly contested political environment to address a multidisciplinary coalition membership in a specific policy area.

Lastly, to ensure compatibility of this approach in the current study requires reconciling and acknowledging the significant premises of ACF that Sabatier and Weible (2007) outlined in some of their original work. This reconciliation is especially true of both the ACF macro-level assumption “that policymaking occurs among specialists within a policy subsystem but that their behavior is affected by factors in the broader political and socioeconomic system” (Sabatier and Weible 2007, 191), and the micro-level view that individual behavior is drawn from social psychology theory. As they pertain to this study, these theories can apply as well to organizational “specialist” behaviors prompted by political and public concerns. As a last reconciliation point, Sabatier and Weible (2007) also identify a meso-level premise that the “best way to deal with the multiplicity of actors in a subsystem is to aggregate them into ‘advocacy coalitions’” (191–92), but in this case, the aggregate will be comprised of various organizational participants. Indeed, pollinator policy originated from the concerns of various actor specialists, including research entomologists and traditional beekeepers. However, collective organizational voices (commercial bee management businesses, biotech firms, agribusinesses, NGOs, and organic farmers’ associations) have emerged as the “new” specialists as the scope, economic impact, and concern over the variability in CCD research increased. Further, these new organizational actors have developed collective-value propositions around the suspected CCD causal factors, shifting the policy decision-making focal point.

### **Actor Diversification and Representation in Pollinator Policy Domain Findings**

This study was also an attempt to apply Lasswell’s representation definition of a democratically driven policy science. The last point in his definition directs

that the creation of a policy science, as well as a policy, needs to be done for a democracy (Lasswell 1951). It is hoped that this research sheds light on whether achieving this definitional objective was met within the context of a new evolving pollinator policy domain. Indeed, the analytical strength of ACF made it possible to identify diverse actor coalition representation as well as their positional relationships in the development of the Agricultural Act of 2014 as well as their positioning within the upcoming 2018 Farm Bill.

As previously addressed, pollinator policymaking actors have evolved since the 2006 public acknowledgment of a pending food crisis because of CCD. Initially, the pollinator management communities, both traditional and commercial beekeeping, were the primary representatives and contributors to pollinator health decision-making. They were the active voice at the “street level” as long as the formal government policy solution was considered a conservation management issue. Indeed, the pollinator management community had a more significant role in policy formation since the policy would address only conservation, pollinator education, and USDA/DOI communication. However, the policy decision-making focal point shifted as the CCD problem became more complicated and as stakeholders better understood the severity of its potential agricultural and economic consequences. Government policymaking brokers replaced local voices with bureaucratic actors in the pollinator decision-making process. This shift in representation was a move away from a more diverse democratic process to a centralized power brokerage policymaking process, contrary to Lasswell’s (1951) admonition. For example, the actions of the Obama White House’s Pollinator Health Task Force action to control pesticide use moved the policy decision focal point by creating an action plan to counter the biotech and agribusiness influence in this policy domain. However, at the same time, this action excluded the participation of the pollinator community. The action also prompted the rapid formation of pollinator coalitions by these new influential organizational actors. The biotech-pesticide producers, already significant actors in the agribusiness sector, now began robust lobbying campaigns in the pollinator policy domain. This change in the dominant decision-making coalition of actors was the second negative factor impacting the level of diverse representation. Indeed, this shift hastened the move in pollinator policy decision-making away from a more democratic approach to a less democratic, centralized brokerage approach (Foran 2014; Pollinator Health Task Force 2015).

In addition, by applying the modified version of ACF analysis to the evolving representation of organizational actors, this study has found that policy advocates and coalitions are very diverse and internally competitive over the policy subsystem’s secondary layer belief structures. As noted before, it was discovered that competition within the subsystem secondary layer (Figure 2)

was a very politically dynamic environment allowing belief structures to be built on weak or nonexistent value criteria. The root cause of this behavior again was the lack of definitive findings regarding CCD's causal factors. Given the variability of CCD interpretation, the question of representation within the pollinator policy domain has shifted over the value norming period (Suryanarayanan 2015).

Additionally, as this study progressed, the introduction of a new overlapping organizational actor coalition, the native pollinator population, has also shifted relationships and broker attention, changing the question of policymaking representation again. Indeed, the native pollinator policy coalition has different objectives from those of the original members of the pollinator domain. Both have raised the pollinator health issue separately in pollinator policy. While the primary pollinator policy objective is the same—the health of pollinators—their approach is radically different and therefore requires a new “face at the table” in determining an overall pollinator policy direction. It is not clear whether those coalitions supporting continued CCD research and the native bee pollinator coalition can agree on a joint private and/or public research-funding policy. It can be further concluded, using the ACF theoretical hypothesis, that organizational coalition actors' internal norm building is in a state of flux, with little to no conforming influences coming from any external forces. As of 2018, each coalition's group norms still are internally formed around commonly shared beliefs of CCD causal factors. However, within the policy domain itself, there appears to be no single common norm to direct action. Therefore, as a study conclusion, for pollinator policy to successfully go forward, there is a demonstrated need to use a single CCD causal pathology only as a common policy value proposition. In addition, a second finding was that the use of CCD causal pathologies created strong coalition cohesion as well as conflictual relationships. This is true when strong opposing views exist on the validity of the CCD causal factor. Third, both academic and government research centers still do not agree nor advocate for any specific CCD research direction, including the newly proposed native bee pollinator policy direction (USDA 2017).

### **Conclusion and Future Research Directions**

ACF has provided a robust analytical framework to describe and identify coalition actors and their representation in pollinator policymaking. The analytical strength of the expanded ACF model was adequate for evaluating organizations as actors as opposed to individuals. However, the need to analyze the value and norming creation of actors was more difficult because of the use of organization actors. In future research, two other analytical frameworks

might be a better fit for attempting to understand this policy domain: Narrative Policy Framework (NPF), which pertains to textual analysis of policy dialogue and influence (Shanahan 2011); or Institutional Analysis and Development (IAD), which pertains to situational action analysis (Ostrom, 2011). In line with this recommendation, Weible (2007) also suggests a stakeholder analysis:

The most likely recipients of an ACF stakeholder analysis are interest group leaders, government sovereigns, agency managers and directors, and other individuals who develop broad, long-term strategies for a policy or program. Regardless of the goals and recipients, additional research is needed to understand how stakeholder analysis (or other political feasibility studies) are conducted and used among stakeholders in policy debates (113).

As a response to this call for further research, it would be necessary to conduct an in-depth investigation of individual leaders who are influential in the pollination community. The purpose is to discover commonalities and areas of disagreement within the community, to recognize perceptions of power and influence, and to gain an understanding of the degree to which policies represent those who are most impacted by any policy implementation. Lastly, the addition of a network analysis was helpful in this study but was based only on qualitative textual reference data. In future research, this network analysis could be more quantified by measuring the strength of the belief structure within and between both collaborative as well as competing organizational coalitions.



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