

1 **Beetlemania: Insects Take Leisure World by Swarm**

2 Conference sub-theme: “warp and the weft”

3 4 Introduction

5 Over 20,000 people attended le Festival international du Film de l’Insecte (FiFi) hosted by
6 l’organisme de l’Environnement du Languedoc-Roussillon (l’OPIE-LR) de France in 2003
7 (Pinault, 2003). In 2007, the giant spider web of Lake Tawakoni in East Texas State Park
8 received worldwide attention and attracted 3,300 curious visitors (Science Daily, 2007). Two
9 years later, the Festival held in London, England drew crowds of 200,000 (Personal
10 communication with Nicolls, July 9, 2010). According to Lovelock, the interest in the ‘negative
11 sublime’ is not surprising considering that over a million people visit the approximately 350
12 insect pavilions (insectariums, butterfly conservatories, butterfly ranches, pollinator parks,
13 dragonfly ponds) every year (Corley, 2002; Lemelin, in-press). Indeed, the charismatic micro-
14 fauna of the insect world, that is butterflies, dragonflies, tiger beetles, and bees, are also
15 celebrated in weddings and funerals (e.g., butterfly releases), special exhibitions and fairs (e.g.,
16 the Annual Bug Fair sponsored by the Natural History Museum of Los Angeles County);
17 landscape modification (e.g., butterfly gardens, dragonfly ponds), apiculture, and conservation
18 strategies (i.e., the establishment of specialized sanctuaries such as pollinator parks) (Lemelin,
19 2009). Yet, despite the popularity of these events, and the presence of insects and spiders in
20 movies (*Bee Movie*), documentaries (*Life in the Undergrowth*), and bestsellers (*There’s a Hair in*
21 *My Dirt! A Worm’s Story*, Larson, 1999), the role of insects and spiders in leisure and
22 recreational activities has been until very recently, largely ignored. The omission of the largest
23 contingent of the animal kingdom is somewhat surprising considering that insects and spiders
24 have a long history of being involved in leisure activities, with some species like rhinoceros
25 beetles, dragonflies and tarantulas being raised as pets (Kawahara, 2007; Laurent 2000), while
26 others like crickets are trained to fight in competitive bouts (Raffles, 2010; Suga 2006). In order
27 to acquire a better understanding of the human dimensions of insect conservation, a survey
28 detailing was conducted with professionals and insect/spider enthusiasts. Consisting of an
29 overview of the state of insect management, this analysis involved a critical overview of
30 achievements, failures, and impacts of management and educational strategies pertaining to
31 insects and spiders. The method along with the findings from the study, are discussed next.

32 33 Method

34 In order to reach the widest possible number of insect enthusiasts an internet-based survey
35 (translated in French and English), telephone and personal interviews were conducted in 2009
36 and 2010. A website (<http://humandimensionsofinsectconservation.wordpress.com/>) provided
37 information on past and current research projects being conducted by the research team, it also
38 provided a link to web-based survey, which consisted of cover letter, consent form, and five-
39 open ended questions ranging from earlier childhood and recreational experiences with
40 insects/spiders; to discussions regarding challenges associated to insect and spider conservation;
41 to identifying activities that have been used to increase the awareness of, and/or interactions with
42 these animals. Over 90 participants visited the survey and 47 completed the on-line survey in
43 2009-10. Two telephone interviews and 4 personal interviews were also conducted (during the
44 winter and spring of 2010).

45 Inspired from a Dionysian approach to inquiry which takes a more imaginative, expressive,
46 spiralling, diffuse, impromptu and tacit approach to understanding the interplay between making

47 sense and action (Heron and Reason, 2006; Saldana, 2009), concepts and themes derived from
48 the on-line interviews, much like the aerial manoeuvres of dragonflies and butterflies, appeared
49 to have at first little to no patterns; however, upon closer examination and extensive review (a
50 process known as saturation), patterns and salient themes emerged from the thematic analysis,
51 including the role of education and recreation in exposing individuals to nature, describing the
52 current status of insects in conservation strategies, and providing an overview of challenges and
53 opportunities in insect/spider management are discussed next.

54

55 Results

56 Participants included professionals (entomologists, arachnologists, researchers, curators,
57 directors) and amateurs (collectors, pet owners), from Canada (14), the USA (12), India and
58 England (4), and individual representatives from Egypt, Portugal, Belize and Costa Rica. The
59 role of education both formal (undergraduate and graduate at the post-secondary levels) and
60 informal (daughters teaching mothers not to kill spiders) in the appreciation of insects/spiders
61 was mentioned by nearly half of the respondents (approximately 21 candidates). Respondents
62 were mostly researchers (32 identified as such), 13 proclaimed they were professional amateurs
63 (collectors, photographers). Many of these respondents (amateurs and professionals) participated
64 in insect/arachnid conservation through various recreational activities: 5 individuals declared
65 their passion for photography; 3 individuals specifically identified themselves as specimen
66 collectors; and 3 participants indicated that they were into insect/arachnid identification. A
67 number of individuals also discussed the role of fly-fishing, pet ownership, and serious leisure
68 (the pursuit of spiders during one's holidays) in insect/spider leisure. 16 participants described
69 the role and the importance of early childhood field experiences in the creation of awareness and
70 familiarity with insects and spiders. A few participants also described their recreational activities
71 which included specimen collecting, pet ownership, and photo identification.

72 When asked to describe what the biggest challenges to insect and spider conservation
73 were participants mentioned biophysical challenges (e.g., habitat destruction, and urban sprawl),
74 and social challenges (e.g., entomophobia, indifference, taxonomic bias, bureaucratic apathy, and
75 absence of insects/spiders in primary and secondary education). Some participants also noted
76 that apathy isn't relegated to the general public, for environmental groups, researchers,
77 gardeners, naturalist clubs and other recreationists (birder, hunters and fishers – excluding fly
78 fishermen), individuals you would think would be agreeable to expanding their knowledge, are
79 in many cases, part of the problem. In fact, “too many field naturalist clubs only cater to the bird-
80 listing and slide show crowd” (Interview # 54, summer 2010). By catering to the specialists,
81 these groups have made little if any effort to incorporate new members and diversify their
82 current offerings. Yet, by far the largest challenge to insects/arachnid conservation strategies was
83 the pesticides industry, which largely promoted the “indiscriminate killing of all things through
84 fear and profit” (#37). If one considers that the role of this multi-billion dollar industry in
85 research, education, and in the media, “then it's no wonder that we have no national agenda, and
86 no recovery plan for insects (#24).”

87 When asked to describe what outreach strategies had been used to increase the
88 knowledge of insects and spiders, respondents described the role of education, applied field
89 activities (bug counts, bioblitz), special events (festivals), museum displays, and live
90 exhibitions such as the Dragonfly Centre at Wicken Fen and the Cincinnati Zoo's Insect
91 House, and the role of media and the web (i.e., twi-hive, the bee-cap in London) in increasing the
92 awareness of these animals. Two participants noted that we should build and learn from the

93 recent successful pollinator and butterfly conservation strategies and that we should encourage
94 new types of partnerships like those seen in the Festival (artist and scientists) and insect
95 conservationists and land developers working together to protect critical butterfly habitat in
96 Southern Ontario. A self-confessed recovering entomophobe suggested that people can change,
97 for since being educated by her daughter, she doesn't use pesticides anymore, and she tries,
98 whenever possible to physically relocate instead of destroying "home invaders" like spiders. This
99 participant also noted that "maybe one day, people will see a neighbour's shrub with insect holes
100 and think, wow that's great, they don't spray for bugs and harm the planet" (Interview #39). It is
101 these changes in mindset and behaviour that will transform indifference, ignorance and apathy
102 into concern, knowledge and interest. Once this is started, we will be well on our way to
103 fostering the "knowledge society" and promoting awareness and reverence through positive and
104 enjoyable experiences (Interviews, #27, #49, #52).

105 Discussion

106 Despite discussing early childhood experiences and describing their participation in recreational
107 activities involving insects/spiders, most participants did not specifically refer to the benefits of
108 recreation and leisure activities in increasing insect/arachnid awareness. This disconnect between
109 the participant's personal experiences and the potential benefits of leisure and recreation is
110 intriguing, since it appears to suggest a lack of familiarity with recreational and leisure
111 activities. While this disconnect may seem at first surprising, it should be noted that many of the
112 participants in this study were scientists and managers, mostly trained in the natural sciences.
113 From this perspective, the devaluation or ignorance of the benefits of recreation and leisure
114 should come as no surprise. Most disturbing however, was despite a recognition of the
115 importance of early childhood experiences in the field, very few participants suggested how such
116 activities (like terrariums) should be integrated into the classroom at the primary and second
117 level. These findings highlight the need for interdisciplinary approaches to insect/spider
118 conservation and outreach, and the potential role that leisure researchers can play in
119 insect/arachnid conservation.
120

121 However, if we take a more positive outlook of these findings, we can notice how many
122 of the participants involved in this study, truly embody the proverbial "thinking outside the box"
123 analogy. While "thinking outside the box" is important, this concept is very much a human
124 analogy, and in many ways too simplistic for such complex issues as insect/spider conservation.
125 Because when you really think about it, there are very few boxes in nature. So if we really are to
126 make changes for these animals, we need to think of cones, spirals, hives, and swarms, and
127 actually engage people in various leisure and recreational activities that promote understanding
128 and reverence, and reinforce these experiences through a desire to learn more with the help of
129 modern technology and nature.
130

131 Implications of the work related to the theme of the conference

- 132 • Engage participants to reflect on their own perceptions of insects and spiders.
- 133 • This presentation provides participants with an opportunity to acquire a greater
134 understanding of the largest, yet most neglected component of the animal kingdom, insects
135 and spiders in recreational and leisure settings.
- 136 • Discuss the various roles of insects and spiders in recreation, leisure, and tourism settings.