

**Book Review: *Invasive Pythons in the United States* by Michael E. Dorcas and John D. Willson
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David G. Barker and Tracy M. Barker
vpi@beecreek.net

First, let's be clear—there is only one species of python that has a viable, self-sustaining population outside of captivity in the United States. This book is primarily about that single species, Burmese pythons, *Python bivittatus*. Second, and again for the sake of clarity, while this python species has been maintained by thousands of keepers in 49 states for more than 40 years, it exists outside of captivity only in extreme south Florida—not all over the United States. Not one word of the manuscript would have to be changed if the book were titled “Burmese pythons in South Florida.” However, there is no doubt that the title, as published, lends much more excitement and urgency to the topic.

That appears to be the theme throughout this book—how to make the topic seem exotic and dangerous using loaded words and unfounded statements. The Foreword, written by Whit Gibbons, well illustrates the bias that pervades the book. In his first three paragraphs, Gibbons invokes the images of pythons created in *Tarzan in Africa* and *The Jungle Book* [both well known scientific accounts], refers to the media hysteria over pythons [largely driven by comments and interviews from the invasive python researchers, including Gibbons, himself], and compares pythons to rabbits in Australia, mongooses in Jamaica, and fire ants and carp in the USA. [It's later in the book that pythons get compared to kudzu in the southeastern USA and, of course, to the brown treesnake in Guam.]

Gibbons finishes his third paragraph with the following speculation: “The python invasion *may* rival all others in terms of its potential to completely alter the structure of the native ecosystems and to capture the public's attention” [italics ours]. We guess we can't exactly disagree with that loaded statement, but we point out that it's also possible that pythons *may not* turn out to be a problem. The Everglades is already the ecosystem with the most established alien and invasive species in the USA [and maybe in the world]; it's certainly possible that these “native ecosystems,” such as they are, *may not* even falter with the introduction of pythons. In fact, pythons *may* fill an important ecological niche and benefit the Everglades by, for example, reducing the feral cat population and its predation. Juvenile pythons *may* serve as valuable prey for endangered indigo snakes and birds of prey. Or pythons may yet prove to be unsuited to even South Florida winters. Finally, while we are speculating, it's possible that the “public's attention” *may* fade if invasive python researchers quit telling them that pythons *may* eat their pets and children, as does Gibbons on the next page, and the authors in the Introduction, Chapter 2, Chapter 4,

Chapter 6 and Chapter 7.

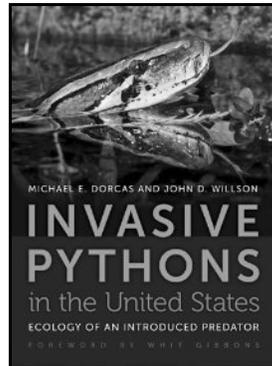
Gibbons's warning on the danger of pythons to humans is: “Records exist of *pythons* eating people in the wild . . .” [italics ours]. This is an example of how both Gibbons and the authors use the term “python” to refer both specifically to “Burmese pythons” and generally to “unspecified large python species” without identifying to which they refer. In thousands of years of written history in Southeast Asia, there exists only one story of a Burmese python eating a human; that report is an anecdotal, second-hand tale reported to Wall (1921) by a “European” who told him that many decades before, as a young man, he and his brothers had watched a Chinese infant being consumed by a “large snake” on Stonecutter Island near Hong Kong in the late 19th century. It certainly doesn't speak well of young European men, no matter what the snake. The largest snake native to that area would be the Burmese python. There is no known official record of the event and there is little reason to consider this as anything more than an imaginative child's tale or an old man's embellishment of a memory. Other than this single strange report, there are no records of a Burmese pythons ever eating a human.

On the second page of the Foreword, Gibbons manages to touch upon nearly every topic in the book, including: the controversy created by the inability of invasive python researchers to accept that Burmese pythons are now classified as a full species; the hypothetical [and discredited] possibility of extensive invasion of this country by Burmese pythons and other great constrictors; predation of pets and domestic animals; and public perceptions.

In the ultimate paragraph of the Foreword, Gibbons states “. . . invasions of giant predators from other lands were once limited to Hollywood horror movies and science fiction pulp magazines. Today they are the new reality.” This from the scientist worried about media hysteria and public perceptions? That the comparison of reality to horror movies survived the pen of all critical readers and editors is indicative of the text that follows.

The Controversy

This book appears in the midst of a controversy centered on the presence of Burmese pythons in South Florida. The simplest summary of the controversy we can provide is as follows: In order to coordinate and facilitate study and management of the Burmese pythons in Florida, a working group of researchers, mostly Department of Interior employees, was formed about five or six years ago; they are identified as the Giant Constrictor Risk Assessment Partnership [aka “GCRAP”]. Over the past few years, GCRAP researchers have published a number of papers that all predict dire consequences to the environment and to humans due to the spread of Burmese pythons and warning of the possible establishment of nine other species that were identified by GCRAP as potential invasive species. In knee-jerk



response to the problems and scenarios predicted by GCRAP, the Department of the Interior proposed that Burmese pythons and nine other species be placed on the Injurious Wildlife List of the federal criminal statute called the Lacey Act; this is commonly referred to as the “proposed action.” This would dramatically restrict international and interstate movement of the listed species. The ten species would have a federal label of “Injurious Wildlife,” which would significantly increase the potential of research funding for GCRAP and colleagues. However, listing those species as Injurious Wildlife would negatively affect commerce in these species, amounting to a government taking of private property, and would inflict serious damage to thousands of American small business and families. Moving any listed species across state lines is a felony. Thus, up to a million Americans now legally keeping the proposed pythons and boas could be threatened with felony convictions should they purposely or inadvertently move their animals across state lines.

The controversy then revolves around the question of whether the enactment of the proposed action is appropriate. Our own position is that Burmese pythons should not be in the Everglades. Pythons in South Florida should be eradicated, if that is possible. However, it is hard to imagine that Burmese pythons have increased any potential danger to the public in the more than 30 years that they have been present in the Everglades. All visitors to the Everglades region of South Florida must exercise caution, but such hazards as might be posed by 800-pound alligators, huge cottonmouths, the biggest rattlesnake species in the world, feral hogs, bears, panthers, skunks and Burmese pythons haven’t stopped park’s approximately one million annual visitors.

To us it seems obvious that this is a local state problem, not some sort of national emergency. There is no doubt that the proposed action is ineffective; it is the wrong law for the problem. The Lacey Act has never before been used to regulate any species already present in large numbers throughout the United States. It is our observation that the invasive python researchers have behaved badly in this matter; they have published biased and weak science, manipulated risk assessments, and then used the media to create and circulate unfounded fears of snakes throughout the public. Dorcas et al. (2011) contracted with National Geographic television to film Burmese pythons that were left outside in the snow and ice of a South Carolina winter, expecting to demonstrate how Burmese pythons could survive northern winters; instead they watched the pythons freeze to death. GCRAP has an obvious vested interest to see the proposed action imposed, and they have effectively misused the media to circulate a variety of stories about the dangers of pythons, ranging from exaggerations to falsehoods. GCRAP has worked together with NGOs that actively lobby to remove animals from private ownership. This book is another publication in this controversy.

The Book

The authors are both PhDs, and both have impressive bodies of publications. Dorcas is older and has more publications, but Willson seems to be on schedule to have a successful academic career. In fact, Mike Dorcas, John Willson and Robert N. Reed all were post-doc students of Gibbons, the author of the Foreword.

The four of them have co-authored numerous papers. [For those to whom the significance of our including Reed is unclear, he is a co-author of the paper making the original claim that the entire southern third of the continental USA is suitable for Burmese pythons (Rodda et al., 2008/2009) and of the report upon which is based the proposed action to list ten great constrictor species on the Lacey Act (Reed and Rodda, 2009).]

The significant majority of these authors’ publications are on the general topic of United States herpetofauna, particularly of the Southeast. Both have published a significant percentage of their papers in ecological and conservation journals. However, prior to their involvement researching pythons in Florida, neither could be labeled an “invasion science biologist” in the same sense as the numerous researchers involved with Florida pythons who trained with and were benefactors of the government largess from the brown treesnake project in Guam. We had hoped that this book might raise the standard of quality for Burmese python publications written by the invasive python camp, a book similar in quality to, say, the excellent book *North American Watersnakes, A Natural History*, by Gibbons and Dorcas (2004). Unfortunately, this is not the case.

The authors state in the Introduction: “We hope this work provides an informative resource for both scientists and the public that will help to clarify issues related to these invasive snakes and quell the hysteria associated with this problem.” This book falls short of those goals in several aspects. Scientists will find little of value in this book. The book is written for a popular audience and there are no citations or references to original literature anywhere in the book. There are statements made in this book that we strongly feel should have been credited to the original author(s) and other statements are made that we suspect have no footing in scientific literature. As we have pointed out, even the Foreword contains statements that contribute to the “hysteria” rather than do anything to quell it.

The book itself is attractive, softbound with a stiff glossy paper cover. It’s crown-quarto in size (10" × 7½"), a convenient size to hold and read. There are 12 introductory pages, including the title page, contents and foreword; six of those pages are full-page images and the title page is a two-page image. There are 143 pages of text illustrated with 181 color images; the images are credited to 59 photographers and are well-printed. There are 13 figures and maps. Only seven pages of text are without an image or a figure. Each of the seven chapters of the text begins with a full-page single image. A total of 31 pages are only images, 18 of which are full-page single images; one full page is illustrated with two maps; and images cover half or better of 29 more pages. The last 13 pages of the book are not illustrated, beginning with the section titled “Further Reading,” followed by acknowledgements, photo credits, and index.

The authors offer no new information for anyone familiar with the stream of publications that have come from the invasive python researchers and their colleagues and employees who are graduates of the “brown treesnake school of invasion biology.” The information presented in the book is essentially a summation of those various reports and papers. Unfortunately, there are a number of topics wherein the authors have relied heavily on the incorrect, flawed and biased statements that have been

propagated in that literature. There is little evidence that the authors independently researched the older literature on Burmese pythons, nor the literature published in recent years that was derived from sources other than the invasive snake camp.

Contributing Authors

Scattered through the book are six sidebars, each written by a different contributor. These include a National Park Service biologist, a University of Florida professor, a USGS invasive python researcher, a citizen scientist, a member of the Miami-Dade Fire Rescue Venom Response team, and an alligator wrestler. The gist of four of these accounts is that on a particular day, these fellows encountered what seemed to them to be an amazing number of pythons in the Everglades. One is the anecdotal story of how a Burmese python seemed to be smart enough to wait to cross a road until traffic was clear. [Apparently the hundreds that have been found crushed on roads are the dumb ones. We know of no evidence to suggest that a century of traffic in the United States has selected for smarter native snakes when it comes to crossing roads.] Skip Snow, the NPS biologist, tells the story of how a radio-tagged Burmese ate a privately owned goose and how the owner insisted the NPS replace the goose. [We wonder if the park service replaces geese eaten by panthers, bobcats and raccoons.] The illustration for the sidebar on page 109 seems at first glance to illustrate the use of a donkey in caging a Burmese python.

We enjoyed the sidebars, but make this observation. The sidebars are not randomly chosen stories. Rather they are chosen specifically to enforce the idea that the Everglades region is overrun with pythons. We point out that according to Reed and Rodda (2009), one Burmese python is encountered in the ENP for every 1,317½ man-days of searching. That means that the average person would search for about 3.6 years to find a Burmese python in the Everglades. So if the sidebars were written by the average visitor to the park, nearly every story would read: “Went to ENP. Didn’t see any pythons.”

Quotes with Annotated Comments

To keep this book review from reaching book length itself, we will list a sampling of quotes taken from the text, each annotated with our comments in brackets. This seemed to us the best way to illustrate some of the good things we appreciate about the book, and some of the presumptions and speculations that also riddle this manuscript. We do recognize the potential of unfairness from isolating citations out of context; therefore we list the exact location in the manuscript of each of our excerpts so that a reader can go to the page to better understand the context.

“... squamate males have two penises (known as hemipenes) located in the base of their tail.” (page 9, paragraph 2)
[This quote from the beginning of Chapter 1 illustrates the rather loose editing of the book that has allowed a number of grammatical and semantic errors throughout the book. First, the authors have a problem sticking to the plural point of view. Second, the word “penis” is used incorrectly; all penises may be male copulatory organs, but not all male copulatory organs are penises. There are several ways this sentence could be improved, such as “... the male squamate has two copulatory organs (each

known as a hemipenis) located in the base of its tail.”]

“The scales that cover the body of snakes and protect them from dehydration and injury are made of thickened, folded epidermis—the outer layer of skin.” (page 9, paragraph 3)

[Snakes’ scales are not just “folded epidermis” but rather “are thickened layers of epidermal and dermal tissues that form by folding of the integument during embryogenesis” (cited from Pough et al., 2004). The imbricate scales on the body of a snake are formed by a folding of the integument—not just the epidermis. Beneath the epidermis of every scale is the dermis, with the exception of the transparent scale that covers the eye. This is made evident by the color on the scales: it is a fact that most pigmented cells in snake skin are located in the dermis.]

“Their jaws are loosely connected to their skull, allowing snakes to stretch their mouth over their prey...” (page 10, first paragraph)
[This is another example of poor grammar: “skull” and “mouth” should be plural. We also take note of the description that the jaws are “loosely connected to their skull.” Certainly anyone who has attempted to disarticulate the jaws or the quadrate bones from a python skull can attest that they are strongly attached. It may be a matter of picky semantics on our part, but the adverb “loosely” is, in our opinion, a poor choice. It supports the widely held but incorrect notion that snakes unhinge their jaws to eat. Rather, the jaws have “flexible” connections to the skull, and those flexible joints allow some lateral and independent movement of the mandibles and quadrates not seen in vertebrates with mandibular symphyses. The authors completely fail to communicate this. Finally, it seems a bizarre explanation of the feeding mechanisms of snakes to state that they “stretch their mouth over their prey.” It is inexcusable for two scientists writing an important book on pythons to do no better than this.]

“Once inside the female, the hemipenis fills with blood and enlarges, and its numerous hooks and spines anchor it in place.” (page 12, paragraph 2)

[Apparently the authors are unaware that the hemipenes of pythons are without hooks and spines; the hemipenes of pythons are ornamented with smooth flounces.]

“There are at least eight genera (related groups) of python species and at least 26 species.” (page 13, paragraph 1)

[Rather than do the minimal amount of research to learn the exact number, here the authors apparently have given their own estimates of taxa in the Pythonidae. At the time of the publication of this book, the Pythonidae consisted of nine genera, 41 species and 54 total taxa (species and subspecies) (see Schleip and O’Shea, 2011; Jacobs et al., 2009; Zug et al., 2011). The authors are radically inaccurate in their estimates.]

“... in fact, some scientists believe that boas and pythons are closely related enough to be in the same family.” (page 13, paragraph 1)

[Who are “some scientists”? This is an example of one of many statements where a reference would be appropriate. Yes, boas and pythons were once classified as subfamilies in the family Boidae, but currently are considered separate families. We are curious as to the identity of the scientists who “believe” that current systematics and classification of the Pythonidae are incorrect. To identify the anonymous critics as “scientists” gives

the statement false credence, as a “scientist” could be an astro-physicist, chemist, or invasive python researcher with personal opinions that bear no actual importance to the systematics and classification of the boas and pythons. We are not aware of recent published criticisms or revisions of the status of the Pythonidae; if the authors know of such, they should have taken this opportunity to enlighten their readers.]

“... and the infamous green anaconda of South America.” (page 13, paragraph 1)

[Anacondas are infamous? Our unabridged dictionary defines “infamous” as (1) having an extremely bad reputation, (2) deserving of an evil reputation, shamefully malign, detestable. The authors think anacondas are evil and detestable? Infamous is an adjective we have never before encountered in scientific literature. Perhaps that is the point. This book is not and should not be considered to be a scientific document.]

Page 13 is illustrated with a map titled “The Global Distribution of Pythons.”

The map is generally drawn. We note the following errors: There is no isolated population of pythons in Sichuan (Barker and Barker, 2010b); pythons do not occur on Taiwan (the island is only partly shaded and the shading may represent a printing error); there are pythons in the area of the Pilbara of Western Australia that is not shaded (Barker and Barker, 1994); there are no records of pythons above 30°N latitude on the Tibetan Plateau (Barker and Barker, 2010c); both *Python natalensis* and *Python anchietae* are found significantly further south in Namibia than is illustrated (Branch and Griffin, 1996); and the authors fail to include South Florida on their map [isn't that the point of their book?]

“The spurs are larger in males, which use their spurs to stroke the female during courtship.” (bottom of page 13, continuing to top line of page 15)

[Here's the plural-singular problem again; “female” should be plural. This generalization is false—it is not true for all pythons that males have larger spurs. Spur size was once the gold standard for determining gender in pythons, but it has long lost favor because it is not uniformly true. In many species, including ball pythons, Burmese pythons and blood pythons, we have seen females with large spurs and males with small spurs. Male pythons often have very small spurs because they are worn down.]

“Some species, such as the green tree python (*Morelia viridis*) are almost always found in trees where they feed primarily on birds.” (page 16, paragraph 2)

[Here is more evidence that the authors failed to do sufficient preparation and research to make this an authoritative book on pythons. In fact, birds are quite a rare dietary item for green tree pythons. Shine (1991) described the diet of *M. viridis* as comprising 56% reptiles and 44% mammals. This is supported by the observations of McDowell (1975) and O'Shea (1987). Interestingly, primarily terrestrial lizards and mammals were found in the stomachs of green tree pythons, evidence that the species spends significant time on the ground. Green tree pythons are often collected at night crossing roads (Mengden, pers. com.)]

“The role that pythons have played in inspiring young scientists and prompting wildlife appreciation and conservation should

never be overlooked.” (page 17, paragraph 1)

[Yes, an honest observation of an important phenomenon, yet they go on to say . . .]

“Unfortunately, some pythons escape or are released when owners do not want them anymore.” (page 17, top of second column.)

[IF this is true, and IF pythons can exist all over the southern third of the continental USA (as predicted by Rodda et al., 2008/2009; Reed and Rodda, 2009; van Wilgen et al., 2009; and investigated by Dorcas et al., 2010), where are all the pythons? It follows that since Burmese pythons have been in captivity for more than 50 years, and since there are keepers and breeders in every state in the continental USA, and since no pythons are known to survive outside of South Florida, either (1) the pythons are not released or allowed to escape or (2) South Florida keepers are grossly irresponsible and negligent and they let pythons go all the time while the rest of the keepers in the country are very responsible and diligent, or (3) pythons cannot survive anywhere in the USA except South Florida. The authors fail to deal with this conundrum.]

“Although most of these snakes die or are killed by humans, release or escape of pet pythons likely resulted in the python and boa populations that are now established and spreading in South Florida.” (page 17, top of second column.)

[This is an interesting observation. How is it possible that the “release or escape of pythons *likely* resulted in . . . boa populations that are now established . . .”? First the authors suggest that there is some question about the validity of the separation of the Boidae and the Pythonidae. There is not. And now they are proposing that pythons metamorphose into boas? Of course this is an overlooked mistake, but we think this has to be a Freudian slip—these guys and their critical readers obviously want to tie together the idea that pythons AND boas are a problem in order to justify the proposed action of the U.S. Fish and Wildlife Service to place five python species and five boa species on the Injurious Wildlife List of the Lacey Act. They also want to place all blame for the problem at the feet of private hobbyists and keepers—the proposed action is meant as a nationwide penalty for all python keepers as atonement for the presence of pythons in South Florida, no matter how it happened. We quote from a paper published just before this book, written by the authors and Gibbons: “. . . the exact circumstances that lead (sic) to introduction and establishment of Burmese pythons in Florida will never be proven.” (Willson et al., 2011). Yet in that paper and in this book, the authors assign the responsibility for the establishment of Burmese pythons in South Florida to irresponsible and negligent keepers, saying it is *likely*, without evidence or data and based on their opinion.]

[More on that same quote: It's also important to note that the statement that “python and boa populations that are now established and spreading” is unfounded and false. The single population of boas, located in a Miami park, has not spread in the 40 years that it has been observed. With regard to Burmese pythons, the National Park Service has published data, based on captures and observations, indicating that there was no apparent population growth in the recent three-year period of 2008–2010, and that in 2011 there has been a 60% reduction in reported captures and sightings from what was reported in each of those previous three years.]

“Invasive snakes can devastate native ecosystems.” (page 18, paragraph 2, in the subsection titled “Pythons as Potentially Invasive Snakes.”)

[There are very few invasive or established alien snake species anywhere in the world and there is only one non-native snake that has wreaked damage to an ecosystem. That species is, of course, the brown treesnake in Guam, the poster child of the invasive python researchers, the snake that launched dozens of careers in invasive snake research. Guam is a small Pacific island less than one-twentieth the size of South Florida, about the area of the city of Columbus, Ohio. Guam has no native snakes; indeed, it had no predators at all. The birds there were fearless, several were flightless, and many nested in the open and on the ground. Any predator of any sort would have done ecological damage to the fauna of Guam. Comparisons between brown treesnakes in Guam, and Burmese pythons in Florida are invalid. Vertebrate prey in Florida all have evolved with predation, including snake predation, and there are many predators that eat snakes, including all ages of Burmese pythons.]

“And although a variety of animals can and likely do eat hatchling pythons, the hatchlings are too large (18–36 inches [45–90 cm]) to be prey for many of the native predators that typically eat young snakes.” (page 18, last sentence on page)

[Hatchling pythons might be up to 36" long, (reticulated pythons, rarely) but most hatchling Burmese pythons are 16–22" and weigh about 65–100 g. Yes, predators that only eat 10" snakes can't eat baby Burmese pythons. However, that is a small subset of the snake-eating predators of South Florida. Potential predators of baby Burmese pythons include skunks, otters, dogs, cats, foxes, coyotes, bobcats, hogs, indigos, kingsnakes, cottonmouths, snapping turtles, raccoons, opossums, mink, panthers, alligators, crocodiles, great blue herons, red-tailed hawks, red-shouldered hawks, and great horned owls.]

“First, female Burmese pythons *may* be able to store viable sperm for long periods—*perhaps* even years—before they use it to fertilize their eggs.” (page 20, top of second column, italics ours)
[Years? There are too many qualifiers in this supposition for it to have any scientific basis. There is no published evidence that we have come across, based on 35 years of Burmese pythons being bred in captivity, thousands of breedings, that this is true.]

“Second, there is evidence that female Burmese pythons can produce viable offspring without mating through a process called *facultative parthenogenesis*.” (page 20, second column)
[The evidence is a report based on one Burmese python in the Artis Zoo of Amsterdam, housed with two other Burmese pythons; eggs were not hatched. Even if this report is valid, it would be a gross overstatement to say that Burmese pythons are a parthenogenetic species. Even the authors of the report describe Burmese pythons as a “normally sexually reproducing species of snake.” (Groot et al., 2003). Again, the species has been selectively bred for unusual colors and patterns, and regular instances of parthenogenesis would be made very obvious by the failures of predicted Mendelian patterns of inheritance.]

These quotations have highlighted only a sampling of the grammatical errors and the questionable or incorrect statements in Chapter 1. The second chapter, titled “Natural History of Indian and Burmese Pythons” is even more biased and error-

ridden. Unfortunately, the rest of the book follows suit. For reasons of brevity we are unable to highlight many more details of the book, providing the research and citations that should have been supplied by the authors. The following are what we consider to be particularly egregious statements:

“Most authorities consider the Burmese python to be a subspecies, or race, of the Indian python, *Python molurus*, and give it the name *P. molurus bivittatus*.” (page 23, the first sentence of Chapter 2)

[Who are “most authorities”? A similar unreferenced statement is “Most authorities consider invasive python researchers to have a poor understanding of systematics and taxonomy.” This first sentence in Chapter 2 is false and reveals a lack of understanding of systematics and classification by the authors, and apparently by their critical readers, as well. It's true that from the 1935 paper of Stull, until early 2009, Burmese pythons were considered a subspecies of *Python molurus*. Are authors from that period the “authorities”? Werner (1910) identified Burmese pythons as a full species. They had been so classified for most of the 19th century—why aren't authors from that era considered authorities? Scientific classifications change as phylogenetic relationships are better understood, but apparently when the changes are inconvenient, invasive python researchers just ignore them. Jacobs et al. (2009) classified Burmese pythons as a species, *Python bivittatus*. To our knowledge, since then the **only** papers that have embraced the dated classification of Burmese pythons as a subspecies were published by invasive python researchers or others with some connection to Burmese pythons in Florida. All other authors have followed the recommendations of Jacobs et al. (for examples, see Cota, 2010; Avery et al., 2010; Schleich and O'Shea, 2010; Engeman et al., 2011).]

“Robert Reed and Gordon Rodda (2009) include a detailed description of the geographic distribution of the *species* in their report on giant constrictors, and we use their report extensively here.” (page 25, first paragraph in the subsection of Chapter 2 titled Geographic Range, italics ours)

[In this subsection and the rest of the chapter, the information presented is essentially useless because of the authors' failure to recognize Burmese pythons as a taxon distinct from Indian pythons. Even if the authors choose to identify *Python bivittatus* as a subspecies, it is this taxon only that is established in Florida. As it is, such information as is presented in this chapter is not applicable to Burmese pythons in Florida, ostensibly the subject of the book. We cannot imagine any possible reason for these authors to include data on Indian pythons, *P. molurus (sensu stricto)*, in this book other than to continue the confusion created by Reed and Rodda. In their defense, the authors here do acknowledge our criticisms regarding the geographic and elevational distribution of *P. bivittatus* published in Reed and Rodda (2009) by listing two of our articles in their Further Reading section (page 143). The date is incorrect in the first of those listings—2008 should be 2010. Both references (see Barker and Barker, 2008, 2010c, in the Literature Cited below) presented evidence that contradicted Reed and Rodda (2009) and charged that Reed and Rodda—incorrectly and without supporting data—significantly exaggerated the climatic, elevational and geographic distributions of both *P. molurus* and *P. bivittatus*. At the very least, this should have motivated Dorcas and Willson to

independently research the literature for what is known about the distributions of the two species. We do note that the map of the distribution of *P. molurus* and *P. bivittatus* at the bottom of page 25 illustrates the unfounded exaggerations of Reed and Rodda (2009) in gray, identified in the legend as “uncertain distribution.” Again, if the authors were uncertain of the accuracy of the report of Reed and Rodda (2009), why did they rely heavily on it? Why not do the research themselves?]

“The largest Burmese pythons certainly exceed 20 feet (6 m) and may approach 25 feet (7.5 m) in extremely rare circumstances.” (page 28, paragraph 3)

[Yes, those would be rare circumstances indeed! In fact, those circumstances have only occurred in the dreams of invasive python researchers. We challenge the authors to find one valid report of a Burmese python longer than 19 feet that is unequivocally assignable to *Python bivittatus*. The species is not known to reach 20 feet, yet the authors show a maximum length of 27 feet in the table on page 129.]

“An additional climate-matching study published by Nicola van Wilgen and colleagues (2009) supported the idea that the climate of Florida and much of the Southeast is suitable for pythons and suggested that suitable climate also exists in the coastal Pacific Northwest.” (page 74, paragraph 1, map at the bottom of page 75)

[In our estimation, the suggestion of the authors that the research and map of van Wilgen et al. (2009) might hold ANY credence, that it is even illustrated in this book, invalidates any slight contribution that this book might offer. There can be no more obvious illustration of the bias of the authors or the actual purpose of the book. This map suggests that the climate from Seattle to north of Vancouver is as suitable as the climate of Florida and Central America. This map shows the suitable climate for pythons to extend north to the Prince Rupert Sound at the southern margin of Alaska, with an isolated suitable area in southern Alberta, and another in NORTHERN Montana. We contacted van Wilgen and were told that the data on which this climate-match was based was gleaned from Reed and Rodda (2009). This is a classic example of the flawed science on which invasive python researchers have based their assessments.]

“Sound decisions relating to management of pythons should rely on unbiased, well designed science. Unfortunately, decisions with wide-ranging effects are sometimes based on outlandish claims perpetuated by the media politicians and various agenda-driven individuals and organizations.” (page 41, first paragraph in Chapter 3)

[What? Is this some twinge of guilt coming from the invasive python camp? No, probably not, since the next section in this chapter introduces many of the members of GCRAP, who are the guys who actually made the outlandish claims that were then repeated ad nauseam by politicians and the media.]

The last chapter in the book is titled “Other Species at Risk of Becoming Established in the United States.” Seven species are briefly discussed; six are species that were featured in Reed and Rodda (2009), and are included in the proposed action of the U.S. Fish and Wildlife Service to list ten species of great constrictors on the Injurious Wildlife List. The seventh is *Python regius*, ball pythons, one of the most popular captive

snakes in the world with more than a million animals in this country. The authors warn that this species is likely to become invasive. Even if *P. regius* did establish a small population somewhere, it’s hard to imagine how it would be considered an “invasive species”; more likely it would be given the less inflammatory label of an “established alien species.”

In fact, the label of “invasive species” is legally defined in the National Invasive Species Act as “an alien species whose introduction does or is likely to cause economic or environmental harm or harm to human health.” The invasive python researchers have clearly given themselves free rein to misidentify all of the great constrictors as “invasive,” arbitrarily granting them a more damaging and dangerous status. It can be argued that even Burmese pythons should not be designated as invasive.

This last chapter is filled with innuendo, implications and inferences, but nothing different than what is already published in Reed and Rodda (2009). We must mention this last nugget:

“It is not surprising that African pythons have gained a foothold in southern Florida. This species is so similar ecologically to the Burmese python that it would be logical to assume that areas suitable for Burmese pythons would also be suitable for African pythons.” (page 131, last sentence on page)

[The northern African pythons, *Python sebae*, are a true equatorial tropical species. Their distribution is centered on the equator from about 17°N latitude to about 12°S latitude. So far as we are able to determine, all specimens imported since the 1990s have come from West Africa at 7–10°N latitude; most or all have been exported from Ghana, Togo and Benin. No climate and no ecosystem in the United States are even remotely similar to those of *P. sebae* in its natural range. The fact that Reed and Rodda (2009) were able to perform a “risk analysis” that would indicate otherwise should be taken as yet more evidence of the flexible nature of the outcome of any such analyses (Barker and Barker, 2010a). Additionally, *P. sebae* never had more than a toehold in Florida; very few specimens have been observed and all were in a small area in West Miami (Reed et al., 2010). Strict control measures implemented by the state of Florida will likely completely eradicate the species from the state.]

We cannot recommend this book. It is riddled with grammatical and factual errors. It maintains a palpable bias against pythons from the first page of the Foreword to the last page of text. There are no citations and references in the text and there is no Literature Cited. Such actual information as does exist within the manuscript is better read from the original papers.

Unfortunately this book provides little constructive information to the popular reader. The popular format allows the authors to weave together the story of an extraordinary snake species adapting to a new ecosystem with the quiet undertones of a modern monster horror story. It is a tale that inflates the importance of the invasive python researchers at the expense of the public sense of welfare. It is a colorful, well illustrated book designed to decorate the tables of the legislators and regulators who will vote to decide on the proposed action to place Burmese pythons and nine other great constrictors on the Injurious Wildlife List, and who will never read the book.

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