Context: The following is an email from Dr. Frank Pasmans, one of the authors of several of the papers cited by the USFWS in rule FWS-HQ-FAC-2015-0005. He wrote it in response to my (John Clare's) query for his opinion regarding assertions made by rule FWS-HQ-FAC-2015-0005. It is published with his permission. The citations for the papers he mentions are listed below his email.

From: Frank Pasmans <Frank.Pasmans@ugent.be>
To: John Clare <john@caudata.org>
Subject: RE: Bsal
Date: Jan 29th 2016

Hi John, a long time ago indeed; I hope you are fine. I am being consulted in many of the issues you raise. For the US, both my colleague (An Martel) and I have delivered all information to the US authorities that should have allowed them to do their homework. From a scientific point of view:

1) Is there a reliable diagnostic test? Yes, absolutely (paper attached); for some reason, this is being disputed by some people in the USA. We have tested thousands of samples in the meantime with this test and it performs very well (both under experimental and field conditions). Is this test perfect in detecting all infected animals? No (I don't think such a test exists for any infection, including in man). There may be situations where detecting Bs infection remains impossible using the current methods, this is at early stage of infection (when the fungus resides deep in the skin) and in persistently infected animals with intermittent (non continuous) excretion of Bs. Now, this is true for virtually any pathogen known and can be remedied by eg repeated sampling.

2) Is there a reliable treatment? Yes, absolutely (papers attached), both heat treatment and antifungal treatment work fine (the latter being quite laborious, much more than for Bd).

In my opinion, it makes sense:
1) To temporarily ban importation of urodeles until a proper system for entry control is in place (as for other animal species), this is basically what we also try to do in Europe.

2) To inform the public (including private keepers), raise awareness.

3) Especially for the USA: to assess Bs presence in and eliminate it from private collections (which really isn't that difficult). However, the hurdle here is that this will cost quite some money and requires collaboration of all stakeholders. To me, this is pretty vital (much more so than limiting traffic of urodeles within the US), to estimate the potential reservoir of Bs already inside the USA. We do know that in Europe, several large private collections have Bs. With regard to costs: let us be honest, funding the screening of say 500 collections for Bs with subsequent treatment of the positive ones really shouldn't be an insurmountable financial problem for a country like the USA.

The Americans are better placed to judge than me of course, but it would make sense to limit interstate (and intrastate!) traffic / trade of urodeles from private collections, the Bs status of which is not known.

Again in my opinion, this is a problem that might well be contained efficiently if all stakeholders collaborate: Bs prevalence in the hobby is currently (very) low, outbreaks are quite obvious (depending on the species), diagnostics and treatment are straightforward and compared to other branches of the terrarium hobby, the salamander hobby is relatively small.

Finally, the potential impact on US urodeles is very unclear at the moment; we do know that some genera (Notophthalmus, Taricha) may be highly susceptible but we currently have no firm evidence that US plethodonts, sirens or ambystomids would be susceptible. However, here I would recommend to err on the safe side until more information is available. Several US groups are looking into this.

Hope this helps somewhat,
Kind regards,
Frank
PS I don't like anonymous posts so feel free to use this (with my name on it)

Citations:

- M. Blooi, F. Pasmans, L. Rouffaer, F. Haesebrouck, F. Vercammen & A. Martel. "Successful treatment of Batrachochytrium salamandrivorans infections in salamanders requires synergy between voriconazole, polymyxin E and temperature", Scientific Reports 2015, 5:11788. DOI: 10.1038/srep11788

- M. Blooi, A. Martel, F. Haesebrouck, F. Vercammen, D. Bonte & F. Pasmans. "Treatment of urodelans based on temperature dependent infection dynamics of Batrachochytrium salamandrivorans", Scientific Reports 2014, 5:8037. DOI: 10.1038/srep08037

- M. Blooi, F. Pasmans, J. E. Longcore, A. Spitzen-van der Sluijs, F. Vercammen, A. Martel. "Duplex Real-Time PCR for Rapid Simultaneous Detection of Batrachochytrium dendrobatidis and Batrachochytrium salamandrivorans in Amphibian Samples", Journal of Clinical Microbiology 2013, 51:12, P. 4173-4177. DOI: 10.1128/JCM.02313-13