

FOR DISCUSSION

NAMP Technical Committee Annual Meeting 2022

Agenda Item 4.4

Last updated: 17 August 2022

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ARE RECHARGEABLE OR SOLAR POWERED LIGHT TRAPS THE FUTURE?**RECOMMENDATION**

1. That the NAMP Technical Committee DISCUSS:
 - a. **whether the development of rechargeable or solar powered light traps should be further explored**

BACKGROUND

2. Currently (at least in the Southern States) only battery operated light traps are used for catching *Culicoides* within NAMP. Recently NSW has been approached by Perry Larsson (Tobugrynbak Tech Logistics, NSW) who designed and built the NAMP LED Power Circuit Boards for Adrian Nicholas' light traps, about designing more sustainable power sources. See excerpts from his email below:

I'd like to introduce myself; I design and build electronic circuit boards on a small to medium scale. I had been previously been engaged by Adrian Nichols (aka The Bug man) to design and build the NAMP LED PCB's.

Prior to him leaving, he suggested that I look into developing a replacement Light sensor switch board to replace the one that the DPI currently used on the NAMP.

While I looked into the replacement Light sensor PCB, I hadn't gotten further than basic development and sourcing. My concept was to update the controller to utilise solar panel charging of lithium batteries in the same footprint of the existing unit. This would save on constantly replacing the D/C cell batteries and reduce the involvement to replacing the sample bag and leaving the units insitu to charge the batteries. Alternatively, one could charge the battery via a plug-in charger ala phone charger. The original circuit uses a CDS cell which these days are restricted/obsolete due to ROHS concerns.

I am capable of repairing as well as constructing the NAMP units to turnkey, if required.

DISCUSSION

3. Light traps used for the Southern states currently use Size AA or Size D batteries. A new set of 3-8 batteries (depending on the trap model) is used for each trapping event which costs \$6-\$8 per collection and up to \$48 per site for the entire year. These (sometimes half used) batteries constitute hazardous waste that can cause further problems if not properly disposed of/recycled. Batteries are usually supplied to the collectors as part of the collection kit, however this is only possible for collection kits that are mailed 'Road Transport Only' due to restrictions on sending batteries via aircraft.

Development of rechargeable or solar powered light traps could solve some of these issues but may have its own problems.

Pros:

- Environmental benefits (i.e. if solar powered): e.g. no continuous generation of hazardous waste
- No need to send out batteries every year (time saving, cost saving, no shipping constraints)

Cons:

- Initial development cost
- If collectors have to plug in (recharge)/or put in the sun their trap a few days/hours prior to the collecting event, could this in some cases prevent them from doing the trapping, particularly in years with bad weather (leaving solar traps out in situ to charge for the entire season, as suggested in the above cited email, may cause deterioration of the trap in the long run)?
- New traps need to be bought or existing traps retro-fitted

FINANCIAL IMPLICATIONS

4. Costs for development may need to come out of the general AHA budget.

CONSULTATION/COMMUNICATION

5. No consultation/communication has occurred yet, apart from the above cited email.

NEXT STEPS/ACTIONS

6. If the Technical Committee decides it is worth exploring rechargeable or solar powered options, contact with potential designers should be made.