

Attachment A: Delaware Mosquito Control Section Comments

Prime Hook NWR Draft Comprehensive Conservation Plan (CCP)

August 14, 2012

Executive Summary

The Delaware Mosquito Control Section (DMCS) on behalf of the State of Delaware will submit to the U.S. Fish and Wildlife Service (USFWS) under a separate cover a 100-pp. set of comments relative to mosquito control aspects for the Draft Comprehensive Conservation Plan (CCP) for Prime Hook National Wildlife Refuge (PHNWR). This is an Executive Summary for our larger document. We appreciate the opportunity to provide this feedback to the USFWS, and we look forward to further collaborating with our Service colleagues to remedy some problematic aspects of the Draft CCP.

Mosquitoes produced on PHNWR, especially long-distance flying saltmarsh mosquitoes, if not controlled *on-refuge* can create substantial, myriad problems for people living or visiting areas to the west or south of the refuge, including in Milford, Milton and Lewes, along with small communities or subdivisions lining both sides of Rt. 1; and of course on the east side of the refuge too, for the 3 bayfront communities of Slaughter Beach, Primehook Beach, and Broadkill Beach. In accordance with taking an Integrated Pest Management (IPM) approach to mosquito control, which the DMCS always does, and in accordance with Best Management Practices (BMPs) for mosquito control, to the extent possible and practicable it's best to deal with refuge-produced mosquitoes at their source, namely on refuge lands at PHNWR, despite the USFWS seeming to prefer our somehow contending with refuge-produced mosquitoes only in off-refuge locations. And nobody should lose sight of the fact that it's the State (DMCS) that actually performs and pays for all mosquito control work on-refuge, and of course elsewhere too.

The need to control refuge-produced mosquitoes is driven by the quality-of-life, public health protection, and socio-economic interests of people in off-refuge areas, which are all important considerations needing attention and effective actions, and are often intertwined (e.g. *good nuisance control = good disease prevention*). Human health risks and problems caused by mosquitoes are not just limited to mosquito-borne disease transmissions such as eastern equine encephalitis (EEE) or West Nile virus (WNV), but there are also medical complications from simply being exposed to excessive numbers of mosquito bites per se, sans any pathogen transmissions, related to dermal irritations, allergenic reactions (local or systemic), secondary bite infections, and psychogenic effects.

PHNWR's marshes are part of a rich mosaic of coastal lands along Delaware Bay that also includes state, county, municipal and private lands, all capable of producing intolerable

numbers of saltmarsh mosquitoes, and all which require various landowners or managers *to do their fair share* in helping to contend with a regional situation. Please note that the ecological values and functions of coastal wetlands on other lands nearby PHNWR, and really all along Delaware's coasts, whether they are State Wildlife Areas, State Parks, private holdings or other types of coastal properties, are essentially the equal to what is found on PHNWR, with the refuge of course being outstanding in its own right. The DMCS safely uses control methods that are essentially the same for all similar habitats regardless of ownership, since these are the best approaches to take and mosquitoes don't recognize political boundaries. In successfully dealing with this mosaic of coastal lands, we understandably can't let any holding become some type of mosquito production sanctuary, whereby if such might happen it would be detrimental in its own right, and it would then also negate the control efforts on other nearby lands.

Most respectfully, the Service should recognize in the Final CCP that the way that *the DMCS currently undertakes mosquito control work on-refuge, for all our methods and approaches, is the best way to continue in the future, and kindly drop all of the Service's proposed changes for how we presently operate on-refuge.* Simply let the *status quo* prevail, and don't turn what has been a non-problem into some type of problem.

What we currently do on-refuge is *the most practicable, efficacious, cost effective, environmentally compatible way* to get things done. The DMCS has been conducting mosquito control work on-refuge ever since PHNWR was established in 1963, and also on these same lands for many years before then. For about the past 20 years, our sound, progressive mosquito control practices on-refuge have essentially been the same, and in part have been developed with the Service's collaboration, or at least have had the Service's concurrence for their implementation.

Unfortunately, many of the Service's proposed changes appearing in the Draft CCP will cause more costs for the State, more labors for the DMCS, and result in less efficacious mosquito control. The latter result will adversely affect the quality-of-life, public health protection, and socio-economic interests of people in off-refuge areas, whether nearby or even distant. Most respectfully, we don't find the Service's reasoning behind its proposed changes to have enough or even any substantively compelling environmental reasons, including concerns about any substantively adverse impacts to non-target organism populations even at the local level, to warrant such changes, but which if adopted will surely as a corollary create many new problems. We elaborate upon all of this in some detail in our full set of comments. And please realize that the DMCS only uses EPA-registered mosquitocide products, which the EPA has scientifically determined that when all product label language and instructions are followed (as federal law requires), then the use of these products *“poses no unreasonable risks to human health, wildlife or the environment.”*

Somewhat surprisingly, no mention is made in the Draft CCP for how much mosquito control spraying has historically occurred on-refuge, or that is presently allowed on-refuge, or that is now actually done on-refuge. The lack of such information creates poor context for what the Draft CCP says about mosquito control spraying on-refuge, but which to help remedy we've now provided extensive information in our full set of comments. For example, the amount of aerial adulticiding that we're presently allowed to do on-refuge, and that we actually infrequently need to do, amounts to treating only a relatively minuscule 2.3% of the entire refuge, occurring immediately landward of the 3 bayfront communities, yet this is a critical area for us to be able to continue to effectively treat.

Associated with the DMCS's request to maintain the *status quo* for our mosquito control practices on-refuge, the following steps kindly need to be taken by the Service in revising the contents of the Draft CCP, specific here to mosquitocide use on-refuge. While we go into considerable detail in our full set of comments as to why the Service needs to do this for each of the 5 items listed below, quite frankly these proposed changes by the Service seem driven at least in part by a desire to simply lower mosquitocide use on-refuge, without much consideration here for corollary adverse consequences. Most respectfully, the following steps are now requested by the State, to be kindly taken on the Service's part in revising the Draft CCP:

- Do **not** propose the elimination of adulticide use on-refuge (even with an exception for a "declared public health emergency") – the elimination of adulticiding on-refuge will detrimentally affect the quality-of-life, public health protection, and socio-economic interests of people in off-refuge areas; will be poor public health management in both theory and practice; will possibly *increase* overall mosquitocide use on-refuge in manner not foreseen by the Service; and will cause more costs and labors for the State.
- Do **not** consider increasing the DMCS's current spray threshold criteria before mosquitocide use can occur on-refuge, either for larviciding or adulticiding – any increase in our spray threshold criteria before spraying is allowed will detrimentally affect the quality-of-life, public health protection, and socio-economic interests of people in off-refuge areas; will result in more adulticide use in nearby or even distant off-refuge areas, and hence more direct exposure of people to adulticide spraying; and will cause more costs and labors for the State.
- Do **not** try to somehow incorporate measures of arbovirus presence or abundance into the DMCS's spray threshold criteria and decision-making *beyond what already exists* – attempting such additional incorporation will be very impracticable to do (technically or otherwise); will have very little if any meaningful value or utility in the real world; will create undue and unnecessary complications (and logistical nightmares) for how

mosquito control is performed on-refuge; and will cause more costs and labors for the State.

- Do **not** try to somehow incorporate considerations of natural mosquito predator population abundance into the DMCS's spray threshold criteria and decision-making – attempting such incorporation will be very impracticable to do (technically or otherwise); will have very little if any meaningful value or utility in the real world; will create undue and unnecessary complications (and logistical nightmares) for how mosquito control is performed on-refuge; and will cause more costs and labors for the State.
- Do **not** call for the involvement of federal and/or state public health officials in making the DMCS's operational spray/no spray decisions – attempting to do this will create undue and unnecessary complications (and logistical nightmares) for how mosquito control is performed on-refuge; will result in less timely, less efficacious control; will unnecessarily involve understandably reluctant third parties who wouldn't contribute much in manner of any expertise not already available; and will cause more costs and labors for the State.

In a region or area such as Delaware where it's now historically well documented that mosquito-borne diseases such as EEE or WNV are enzootic/endemic, and could possibly become epizootic/epidemic if vector mosquito species-of-concern become too abundant, ***all we really need to do is to have real time measures of mosquito population abundance for vector species-of-concern, and to then compare these population measures to our spray threshold criteria,*** relative to our need to then possibly take control actions for quality-of-life purposes, public health protection, and socio-economic considerations. This is the most meaningful, practicable and efficient way to operate, but whereby our possibly also having to unduly consider other factors such simultaneous or recent arbovirus presence/occurrence indicators, or current levels of natural mosquito predator populations, or any need to first consult with federal or state public health officials, will only then detract from the meaningfulness, practicability and efficiency for using our spray threshold criteria. Our operational spray threshold criteria have been developed over many years, based upon a combination of both good science and practical experience, including considerable trial-and-error learning for the latter. These statewide criteria (for both larviciding and adulticiding) are provided in an 8-pp. document that's publicly accessible on the DMCS's website, which each year is also part of our annual larvicide and adulticide Special Use Permit (SUP) spray requests, and which at least to date the Service has fully accepted and made part of our annual SUPs.

The DMCS feels that the Service per the contents of its Draft CCP has put too much faith or emphases on the ability of natural mosquito predators to satisfactorily control mosquito populations, whereby any real help here is but marginal in addressing modern-day needs. We

also believe that the Service's seeming implications that our mosquitocide use practices have significantly affected mosquito predator populations (on-refuge or off) to be unfounded, and any adverse effects if they exist are but *deminimis*. We have no reason to believe, and there's really little evidence on anybody's part including the Service, that our operational use of mosquitocides has any substantively adverse impacts on non-target organisms, even at the local population level. EPA certainly doesn't feel that this would be so, in their having registered (approved) the control products that we safely use for their intended applications, done in accordance with EPA's protective protocols for non-targets. We also think that the Service's concerns are a bit overwrought for how diminished mosquito populations (especially for saltmarsh mosquitoes) resulting from our control efforts might adversely affect natural mosquito predator populations, whereby once again any such effects if they exist are but *deminimis*. We elaborate upon all of this in our full set of comments. And we find it disturbing that such thinking on the Service's part might cast undeserved negative light on our judicious use of mosquitocides, with mosquitocides being management tools that we safely use for some quite worthy purposes.

The DMCS is heartened to see that the Service will still allow us to continue to use on-refuge (pretty much at our discretion depending upon field circumstances) either Bti or methoprene for larviciding, which will then help with both control efficacy and pesticide resistance management. We are also heartened to see that as needed we'll still be able to aerially larvicide (as our current larvicide SUP allows) up to about 4200 acres of refuge marsh up to 8 times per year for any given area or site, although at present for several practicable reasons (that we go to some length to explain in our full set of comments), we don't treat anywhere near that amount of refuge acreage. However, depending upon changing natural conditions, and whatever future Service management preferences or actions might occur, we might then have need to start (or really to restart) aerially larviciding much more acreage than we currently do. Additionally, we also go to some length to explain in our full set of comments why our continued judicious use of some limited adulticiding on-refuge can help avoid our having to greatly expand larviciding on-refuge.

Most respectfully, no changes (if any) should be made for our current mosquitocide use practices until *after* the USFWS completes its long awaited final "National Mosquito Management Policy for NWRs," following which another look could then possibly be taken at all of this. Several of the problems now appearing in the Draft CCP seem to stem from the Service's use of its 2005 "Interim Guidelines" for mosquito control on NWRs that had some serious flaws, and then from a first draft in 2007 of the Service's proposed "National Policy" for mosquito control on NWRs that also had some serious flaws. The American Mosquito Control Association (AMCA) provided constructive feedback and critique for both documents, as did about 40 mosquito control programs around the country, including many recommendations and requests for changes. Hopefully, this input will someday result in a final "National Policy" for NWRs that'll be acceptable to all pertinent parties. However, the DMCS (as well as the AMCA

too) understandably has strong reservations in seeing the Service now apparently trying to bring some things to life, via the contents of refuge-specific CCPs, that are based in part upon some seriously flawed aspects of interim guidelines or a draft national policy. Hence, the need to await completion of a final “National Policy” before going too far with the mosquito control contents of any CCP.

Developing a final “National Mosquito Management Policy for NWRs” of course has to be done in concert with myriad other existing USFWS management policies, but the contents of any final national mosquito control policy for refuge use cannot be unduly subservient to the contents of other existing Service policies. Simply having some type of policy conflict with older existing policies shouldn’t automatically be enough to unduly stifle or preclude what now needs to be recognized or included in an upcoming national policy for mosquito control on-refuge. Measures might be needed on the Service’s part for the recognition of some policy deference to help better bring to life a new national policy for mosquito control on-refuge, and to even amend some older policies if need be. A final “National Policy” for mosquito control on-refuge can’t always play “second fiddle” to other existing Service policies if there’s any hope whatsoever for achieving a final policy that’ll be acceptable to all pertinent parties and work in the real world. Adequately accommodating mosquito control on-refuge in manner of a “National Policy” can’t be an afterthought unduly constrained by other existing Service policies. As with trying to prematurely implement within the Draft CCP some aspects of a yet only draft “National Policy,” problems have also seemingly arisen in the Draft CCP from the Service’s use of other existing policies that were crafted with very little if any consideration for realistically accommodating mosquito control needs and practices on-refuge (e.g. the Service’s “Biological Integrity, Diversity, and Environmental Health Policy”).

In regard to future Open Marsh Water Management (OMWM) source reduction work on PHNWR, we urge the USFWS to complete whatever additional OMWM studies that the Service is either currently performing or contemplating undertaking throughout the USFWS’s Northeast Region, and then come to some policy decisions as soon as possible regarding the DMCS’s being able to maintain or repair some of our aging, now somewhat dysfunctional OMWM systems on-refuge, or for us to possibly install new OMWM systems on-refuge. In the interim, the DMCS will continue to make judicious use of larviciding in order to contend with larval production problems on-refuge. In event after the OMWM studies are completed, the USFWS then decides against any future OMWM work on-refuge of any kind, the Service by default will then also be fully committing to perpetual larvicide use on-refuge.

Finally, while the Service provides information in the Draft CCP for its administrative costs associated with allowing mosquito control to occur on-refuge, quite surprisingly the State’s considerable costs for all aspects of actual mosquito control operations on-refuge are lacking, despite our having provided such information to the Service. This needs to be rectified, and we’ve once again provided such cost information in our full set of comments, but this time in

more concise form. We also point to how the DMCS's future mosquito control costs on-refuge could significantly increase, due to changing conditions brought by natural factors or forces, and/or due to Service management preferences or actions affecting mosquito production on-refuge. We respectfully also don't concur with a seeming Service conclusion that its management preferences and proposed actions relative to mosquito control on-refuge won't have significantly adverse economic impacts to nearby communities and local economies.