Section **2**

SETTING STATEWIDE GOALS:

The Concept of *NO NET LOSS (NNL)* and Assessing Kentucky's Current Efforts at Stream and Wetland Conservation and Restoration

- ***In preparation for:* KENTUCKY'S STREAMS AND WETLANDS CONSERVATION PLANNING (SWCP) PROCESS**
- ***This section is based on advisory sessions with members of the SWCP Steering Committee only and is based on their response to the following question: What is your view of Kentucky's success in ensuring "no net loss" of streams and wetlands.***

AN OVERVIEW:

The following section continues the discussion on current efforts in Kentucky to conserve and mitigate streams and wetlands, by focusing on Steering Committee responses to the following question on "no net loss:" *What is your view of Kentucky's success in ensuring a "no net loss" of streams and wetlands?"* Generally, there was some consensus among steering committee members that the *In Lieu Fee program*, administered through the Kentucky Department of Fish and Wildlife Resources (KDFWR) and overseen by a multi-agency Mitigation Review Team, is a solid programmatic effort to compensate and mitigate for the loss of streams and wetlands. Yet, in the same breath, many advisory members (even those directly involved in the mitigation program) expressed concern over whether lost functions and values from permitted stream and wetland impacts were adequately being restored, replaced or compensated for through mitigation and restoration efforts occurring onsite or elsewhere. Overall, responses were relatively consistent on the concept of "no net loss" with many advisory members suggesting that Kentucky could do better at preventing the continuing loss of our stream and wetland resources.

Setting Strategic Goals:

The US EPA recommends that states involved in wetland (and stream) conservation planning consider adopting the goal of "no net loss" (NNL) as a possible statewide strategic objective (EPA 2009). This strategic goal goes back to the 1990s when many states were in the process of developing state wetland conservation plans. The *Statewide Wetland Strategies* guidebook on wetland conservation planning, for example, even suggests that states consider going beyond NNL and consider adopting an even more ambitious strategic objective of "***net gain***" as a means to compensate for the historic loss of wetlands due to urban and agricultural development. (See above text inset).

> "Despite important differences in the kinds of wetlands protection problems facing states and options available to address those problems, states confront the same fundamental issues. The continuing loss and degradation of wetlands is unacceptable for both environmental and economic reasons. The goal of any wetland strategy, then, must reflect the urgency and severity of this problem and present a realistic but ambitious target for wetland protection and management efforts. The goal of no net loss and long-term net gain serves such a purpose."
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> – Taken from: *Statewide Wetlands Strategies: A Guide to Protecting and Managing the Resource*, p.12.

Given the significance of the concept of NNL to state wetlands conservation planning, members of our steering committee (as well as other stakeholders in their over the telephone interviews) were asked to comment on the concept of NNL as it applies to Kentucky and our own state's stream and wetlands conservation efforts. The following pages summarize the thoughts of Steering Committee members on Kentucky's current efforts at no net loss.

No Net Loss: A Regulatory and Policy Mechanism

Several members of the SWCP Steering Committee pointed out that outside of being a strategic objective for wetlands conservation planning, NNL also provides regulatory guidance for the US Army Corps of Engineers (US ACE). As one steering committee member explained, the concept of NNL was adopted by US ACE to help the Corps evaluate the extent to which it was meeting its Section 404 obligations under the Clean Water Act. Another steering committee member, with experience at both the federal and state regulatory level, mentioned that NNL was really a "programmatic goal" for the Corps and not a "project specific goal." However, they added that Kentucky might do well to consider adopting its own "no net loss policy," as such a state level initiative would likely be more effective than a programmatic federal policy. Likewise, another steering committee member, also well-versed in Section 404 (and 401) regulatory law, mentioned as well that NNL is "really a federal policy" –but that some states have themselves adopted that policy but that Kentucky has not.

Kentucky's Efforts So Far at No Net Loss

While Kentucky has no explicit state policy on net loss of stream and wetland resources, Steering Committee members were asked to comment on the extent to which the state was meeting the federal mandate. When responding to the question on Kentucky's success in ensuring "no net loss" of streams and wetlands, Steering Committee responses were relatively consistent. Most advisory members stated that Kentucky could do far better in its efforts at stream and wetland protection and conservation. A summary of some of those advisory responses are reported below:

- We are losing miles of stream every day, particularly in eastern Kentucky. We are losing miles of natural streams throughout the state in terms of channelization, which continues like mad.

- Well, overall, I'm not sure how successful it has been… In general, just thinking about the conditions of streams in eastern Kentucky, especially with regards to mountaintop removal, I have to think that it's not in a very good situation. More could be done here.

- …there has not been a "no net loss" policy in the past. We have not recognized ephemeral or extremely small head water streams. Currently, we are getting better at understanding these stream but [they] are not legislated and regulated like a wetland…

- I do not know if we have been successful in regards to no net loss…

- At this time there is no way to quantify "no net loss" that I know of. There are a plethora of projects that are so minute that they do not have to have permits and there is no quantifiable data.

- I am totally ignorant about no net loss of streams and wetlands in Kentucky. I've never seen any data at all that says we've lost or are losing this many river miles a year or this many square miles of wetlands…

- We can attempt to track no net loss by paying attention to what exactly we are losing and missing out on. Many times it is hard to assess the impacts that have occurred.

- From what I hear from contractors who run heavy equipment, I hear that wetlands are continuing to be affected and continuing to be filled. I know much of this is going on because it is permitted, but I also know that quite a bit of it is going on that is not permitted. States that have done surveys, where they will fly over, they will find that, in many areas, wetlands are disappearing…

- I don't know if I am familiar as I should be with Kentucky's no net loss... I don't know if they've got their own policy on no net loss or not.

- I don't know, unfortunately with this job we see a lot of bad stuff. We see a lot of degradation, so it would be hard to say… I don't know. I definitely know there is no net gain, and I would probably tend to fault on the side of that there is a net loss. I mean, the reason I say that is I see further decline in species, so I can only assume that is because of habitat modification, destruction, so… maybe it's a gradual decline for some things, but that's what we see, especially for mussels.

- "I'm afraid I'd have to say…I don't think we have been very successful. One only needs to point to the loss of our headwater streams in the coal field regions of the state. As a result of hollow fills and valley fills…those streams are being covered and being lost and those…headwater streams are the very genesis of physical, chemical and biological processes that are important to a healthy downstream environment, so, while we may not be losing large, significant, miles of large streams, we're losing a significant number of miles of headwater streams; both intermittent ephemeral, as well as perennial headwater streams. Of course, I think we already realize through a historic management and conversion of land to agricultural land what we have lost, over one half of our wetlands already, that has occurred well back in history, well before the clean water act."

- My idea of “no net loss” is controlling development because it is costing us a lot of streams. We do not want to lose these streams that we have. Wetlands have to have a ground water component for them to be successful. Streams have to have the function of an ecosystem. We have very few unregulated streams in Kentucky; there are very few natural flowing pristine streams with no man-made influences on them at all.

- We have lost a lot of stream miles over the last few decades. Many wetlands have been lost as well. Wetlands are critical for maintaining stream integrity and reducing flooding. Also, they are important for a plethora of species to survive.

- We are losing everyday for the reasons we have already talked about. Everything seems to come back to the issue of economical value versus the environment. Until the positive impacts of the environment are calculated, I do not think that we will ever see “no net loss” in Kentucky.

- I have an opinion….you can drive down any road or street in Kentucky and you can see a loss of streams and wetlands –you can see a loss because we are building too close…

- I think that we lose wetlands all the time. We are continuing to lose wetlands and the regulatory programs cannot get around to all of them at a quick enough rate to prevent these losses. Many swamps and wet areas just in the Lexington area have been lost in the last five years.

- We are going backwards as a state. We are losing a great number of streams in just the Appalachian region. “No net loss” is on the books but it does not seem to be working. Laws are important but must be enforced in order to be beneficial. Also, there has to be political will backing up these laws and making sure that they are put into use. There are some people working very hard but we are still losing ground.

- I think it’s a lot of lip service. I don’t think it’s been really successful at all.

- I am not convinced that Kentucky has ever had a “no net loss’ policy. We need to think about where the fractionalized wetland systems are still in existence and how can we purchase these lands. By building land banks we make sure that the mitigation money goes into the systems of wetlands that have wetland functions.

Photo 1: View of valley fill from mountaintop removal job in Leslie County. When asked to respond to the question on “no net loss,” a number of Steering Committee members made reference to the loss of stream miles to valley fills in eastern Kentucky and to the loss of seasonal, ephemeral streams and wetland areas from mountaintop removal operations in the same region. Photo 2: A closer view of a recent spill (mine blow-out) in Leslie County. One steering committee member mentioned that in thinking about no net loss we typically think about losses in stream miles and wetland acreage but maybe we need to also take into account leaching from mining and industrial activities as contributing to such loss. (Both photos courtesy of the Kentucky Department of Fish and Wildlife Resources/ Kentucky Division of Water).

A general summary of the position of the SWCP Steering Committee indicates that many believed Kentucky was “losing wetlands all the time” and that our state regulatory programs, “cannot get around to all of them at a quick enough rate to prevent those losses.” In addition, several recognized the trade-offs between economic activities and environmental protection. As one member said, “until the positive impacts of the environment are calculated, I do not think that we ever will see *no net loss* in Kentucky.”

Kentucky's Efforts at Mitigating for Stream and Wetland Losses

While many on the SWCP steering committee believed that Kentucky was doing a relatively poor job in curbing the effects of stream and wetlands loss from both mining and development, many did concede and acknowledge the efforts of the state's stream and wetlands mitigation programs as concerted, programmatic efforts to stem the loss of our state's water resources. One advisory member, for example, was unsure how to respond to the no net loss question, but did acknowledge that he was "familiar with the work that Kentucky Fish and Wildlife's FILO –In lieu Fee Program –has undertaken." As he explained, "Basically, if you alter a wetland or you change a stream in one place, you pay money into a bank, and money is used to mitigate streams and wetlands in another location. From what I understand, it's been pretty successful so far…" In fact, many members of the Steering Committee when asked to respond to another question regarding successful partnerships at stream and wetlands conservation, many did mention Kentucky's *In lieu Fee* Program. The program, administered through the Kentucky Department of Fish and Wildlife resources, was consistently seen by Steering Committee members as a successful effort at stream and wetlands restoration. Along with the FILO program, the Steering Committee also mentioned other partnerships between USFWS, NRCS, USFS and the Partners for Fish and Wildlife Program as other successful efforts at stream and wetlands conservation and restoration within the state.

Yet, as one Steering Committee member, directly involved in regional planning, remarked, "right now it seems like it is too easy for a developer to simply cut a check and let someone else deal with the environmental issues." This was a repeated theme among others on the Steering Committee as there were some who expressed concern over the trade-offs and whether those trades (or "mitigation credits") were equal in replacing lost functions and values from an impacted site to the mitigated one:

- Even with the mitigation trust program, where let's say a permit applicant… such as a mining company –wants to take a particular watershed, for example, or other form of habitat…well, they have to pay into this – either they can do the mitigation themselves, or they pay into this trust and then KDFWR does it. Very often, the – it seems to me … they can take a high-quality habitat or an area that has some unique plant or animal community and then pay into this trust. This mitigation work that occurs somewhere else – it may be in an area that really doesn't have that kind of special characteristic that the other had. So, it's not an even trade-off.

- I've never been a true believer that you can destroy a wetland over here and rebuild it over here and get the same level of service. I think there is a lot of power in the way nature designs things and where they are put in the landscape.

- Well, we already heard my kind of sarcastic comments on that one already…. I don't know. It seems to be getting a little better, but I think sometimes they are very interested in numbers without looking at functionality. My example of the mitigation of trading the wetland that's underneath now the Super Wal-Mart for – now I remember the term – a borrow pit. That's what those are called, borrow pits. Trading it for a borrow pit. Yeah, you may be able to call that a wetland and you may still have the same number of acres of wetland, but believe me, it's not a functioning wetland. I think somebody needs to think more about just total size and numbers and bean counting and thinking about functionality, too.

- We will allow wetlands to be destroyed if we can restore and mitigate. How do you assign values to these water systems? It costs an extreme amount of money to set up projects. Mitigation fees are pitiful in comparison to the costs of restoring a stream or wetland. …I do not think you can assign a value to a mile of creek.

- The wetlands in Eastern Kentucky have been filled up and if any are left then they are very small. Back in the 70's we came up with a mitigation rule that says if you destroy one acre of wetland you have to buy three acres of wetlands for each acre destroyed. Buying a little piece does nothing for the functionality of wetland systems. You cannot replace their natural functions. Wetlands are so crucial to the survival of the environment. There is still a debate going on about what exactly is a wetland (on a regulation basis). … We need to think about where the fractionalized wetland systems are still in existence and how can we purchase these lands. By building land banks we make sure that the mitigation money goes into the systems of wetlands that have wetland functions. The ability to put dollar amounts on eco-services will be important in the future. This way we can tell the appraiser that its worth more as a wetland than as a shopping center.

Photo: A Lady Slipper somewhere in Kentucky. One advisory member mentioned the loss of a natural wetland "full of Lady Slippers" to a Super Wal-Mart as an example of the challenges with the In Lieu Fee Program. How do we properly compensate and mitigate for high functioning ecosystems? This was a recurrent concern among other members of our Steering Committee as well.

In short, legitimate questions arose among Steering Committee members over whether lost functions and values from permitted impacts were being sufficiently accounted for through the various mitigation programs and stream and wetland banking systems across the state. Although the intent of the concept of no net loss is to replace functions and values, as several members of our Steering Committee pointed out, many other advisory members believed that rough ratios of stream miles and wetland acreage were being used as a proxy in determining mitigation credits. But as one regulator on the Steering Committee explained, things are more involved than that in assigning mitigation credits:

- We try to assess the quality and stream length that are impacted. Are they poor quality, like… some ditch running across the property? Or is it through a forest that's going to be impacted to develop whatever it is they want to develop? The lower-quality streams don't require as much linear feet of mitigation if they are going to put back a high-quality stream for the mitigation. I think the way we do that is better than the way some other states do that. I don't think that linearly controlling our feet is the way to look at streams. It's not getting back what you want, what we want, or what's right and best for the environment.

While one Steering Committee member expressed some major concerns on whether eco-system services of an impacted stream or wetland could be replaced through a stream or wetland mitigation project occurring elsewhere, they did heartily acknowledge Kentucky's efforts, in partnership with the U.S. Forest Service, to restore isolated wetland areas across the state, - especially on school properties.

Their comment:…just yesterday I looked at a list of new wetlands that have been created with the help of schools and other organizations that are excited and it's really cool! I am a big frog fan!! And it's really cool when you can have a breeding pond in the back of a school!!! That's GREAT! Kids can see a tadpole not one in textbook (!)

Lawmakers, wetland managers, the regulated community, and others have expressed legitimate concern over the difficulties of pursuing the goal of no net loss and long-term net gain. Scientists, in particular, have stated that their ability to evaluate wetlands functions is limited; without accepted methodologies, scientists worry that they cannot accurately measure the achievement of NNL. And developers are concerned that excessive restrictions on private property and the costs of required mitigation are unreasonable and constitute too great a burden.

Although it is important to recognize these concerns, getting stumped by them is unnecessary. States can begin to address these issues in many ways. Clearly there is a need to pursue research to improve scientific understanding of wetlands functions and how to restore and create wetlands to offset losses. To help improve compensation techniques, states can develop inventories of public and private lands to determine the best areas for wetland restoration and creation. Pilot projects can be undertaken to evaluate various methods for restoring and creating wetlands in different locales. States can sponsor large-scale wetlands restoration/ creation projects to create opportunities for wetlands "banking" or multi-purpose recreation/ open-space projects.

– Taken from: Statewide Wetlands Strategies: A Guide to Protecting and Managing the Resource, p.13

The SWCP Steering Committee expressed serious concern on whether lost eco-system functions and values were being adequately replaced through stream and wetland mitigation projects. Subsequently, a number of advisory members suggested the need for better "cost-accounting" and bio-assessment methods to assess those eco-system services that are being lost. As one advisory member put it, "we're seeing a lot of our unique natural areas disappearing and the communities that occur there." Another member argued for continued advancement in the science of stream and wetland restoration in order to better understand and assess those functions and services:

- …from a functions and values standpoint, a wetland that is mitigated and restored does not readily give you functions back. Some qualities, such as water quality functions, are directly tied to the maturity of the wetland. Right now we do not have all the answers. I do think it is important to effectively monitor them and gather data so that we can find some of those answers. From a stream perspective, I think that it is even more difficult. Wetlands have been mitigated since 1985. It is only recently that streams have been mitigated or compensated for. We are beginning to understand more every day about how to mitigate streams. Streams operate a little differently than wetlands. For example, a stream's function is tied to its length. If you fill a stream in that then is length you are never going to get back; the function tied to that length you will not get back either.

Another Steering committee member also mentioned the consequences of stream fragmentation:

- So, we get those ecosystems that are disjunctive and fractured. That's why with so many of our special waters and outstanding national resource waters, we really are talking about *segments* of water bodies and not water bodies. Everything's so fragmented out there in the landscape. Without that integrity, we're fighting a losing battle to some extent.

Among the above two advisory committee members there was common recognition that stream fragmentation represents, in itself, a serious challenge to maintaining the functional integrity of a stream ecosystem. Another steering committee mentioned the challenge of stream fragmentation from a regulatory perspective:

- Say, for example, a farmer hays the field down below -a lot of times that disrupts the channel of upland streams. The court says that there's no physical, biological, or chemical connection here. So, now that's an isolated wetland. That whole stream upstream from there is now an isolated stream, and you can do what you like with that. You can sell it, you can pipe it, and you can do whatever you want. Kentucky doesn't have the ability to regulate that. So, that's where I think the net loss is coming in.

This particular advisory member went on to stress the fact that isolated wetland areas are not protected and regulated under the US Army Corps regulatory definitions to the extent to which isolated wetlands are not connected to "waters of the United States." Isolated wetlands are left unprotected under Section 404 of the Clean Water Act. Therefore, isolated wetland habitats that are recharged solely by groundwater remain as vulnerable to human impacts as ephemeral and intermittent streams that were mentioned previously by other SWCP Steering Committee members.

Possible Strategic Directions based on SWCP Steering Committee Perspectives:

Several Steering Committee members suggested that perhaps Kentucky should consider adopting its own no net loss policy. This would be in accord with federal EPA guidance to states and tribes; the US EPA continues to recommend that states, when developing comprehensive plans for stream and wetlands conservation, consider adopting a no net loss (and even net gain) goal (EPA 2009).

The establishment of such a statewide initiative, however, would require –as several advisory committee members mentioned – some major "ground truthing" to delineate and map the state's wetlands and stream resources. This is especially the case with Kentucky's remaining isolated wetlands, as several advisory members mentioned the QA/QC problems associated with using *National Wetland Inventory* data.

Beyond mapping, the position of SWCP advisory members suggests that any statewide policy on no net loss would also result in a statewide discourse on functions and values and how to fairly account for lost ecosystem services for permitted impacts. This was a serious and repeated concern expressed by Steering Committee members during their advisory sessions when they were discussing current mitigation programs and efforts in Kentucky. The subsequent classification of low functioning versus high functioning systems, as pressed by the SWCP Steering Committee, could in itself, serve as an important communication and educational tool in advancing public understanding and stewardships of our state's valuable water resources.

Photo: South-central Kentucky: A 125 acre easement on Mud River that is now dedicated as a permanent wetland preserve. This mitigation project was the result of a partnership between the Kentucky Department of Fish and Wildlife, The Nature Conservancy and the Natural Resource Conservation Service (The NRCS's Wetlands Reserve Program). In terms of successful mitigation projects, one Steering Committee thought that Kentucky was gaining ground As they stated:

- I think we're gaining momentum in that area. It looks like we're maybe perhaps getting a little more funding in those areas as well, but as far as ensuring no net loss….I think — like I said, it's kind of hard for me to assess whether there's no net loss or gain there. I think we just have to keep pushing forward and hope that we're going toward the gain more than losing.