

summary judgment on all their claims. FWS, and intervenors the Vermont Agency of Natural Resources ("VANR") and the State of New York ("New York"), (together the "Defendants"), also moved for summary judgment and FWS and New York moved to strike certain extra-record evidence and Plaintiffs' statement of undisputed material facts. Finally, FWS moved to dismiss Plaintiffs' claims based on lack of standing. The Court heard oral argument on all motions on July 23, 2002. For the reasons stated below: FWS and New York's motions to strike (Papers 18 and 22) are **GRANTED** in part and **DENIED** in part; Plaintiffs' motion to supplement standing affidavits (Paper 35) is **GRANTED**; Plaintiffs' motion for summary judgment (Paper 13) is **GRANTED** in part, as to the standing of VPIRG and Knight, and **DENIED** in part, as to the standing of NAS and as to their NEPA and APA claims; Defendants' motions for summary judgment (Papers 24, 26, and 27) are **GRANTED**; and FWS's motion to dismiss (Paper 26) is **GRANTED** in part, as to the standing of NAS, and **DENIED** in part, as to the standing of VPIRG and Knight.

I. Background

The much maligned sea lamprey, Petromyzon marinus, is at the heart of this dispute. The lamprey is an eel-like ancient jawless fish that, as an adult, feeds parasitically on other fish. Unfortunately for the Lake Champlain sea lamprey, humans are also predators of some of its prey, in particular various

salmonid species. Plaintiffs challenge FWS's decision to control sea lamprey predation in Lake Champlain through the application of pesticides, called lampricides, to Lake Champlain tributaries.

A. Sea Lampreys and Sea Lamprey Control in Lake Champlain

There is debate over whether sea lampreys are endemic to Lake Champlain or invasive species that entered from the St. Lawrence Seaway or Hudson-Champlain Canal. R. at 38. However, irrespective of their historical place in the Lake Champlain ecosystem, by the mid-1980s it was clear to federal and state fish and wildlife agencies that sea lamprey predation was having a negative impact on salmonid and other sportfisheries in the Lake. R. at 58-59. Concerned about the low harvest levels of salmonids, the Lake Champlain Fish and Wildlife Management Cooperative ("Cooperative")², embarked on an eight-year experimental sea lamprey control program (the "Experimental Program") in September 1990. R. at 59. The Experimental Program involved two applications of lampricide in four year cycles to 16 tributaries and deltas known to contain larval sea lamprey. R. at 59-60, 71.

While the parasitic adult sea lampreys create the predation

² The Cooperative is comprised of FWS, the New York State Department of Environmental Conservation, and the Vermont Department of Fish and Wildlife. A major goal of the Cooperative, founded in 1973, is to develop and maintain a diverse salmonid fishery. R. at 58.

impacts, larval lamprey, or ammocoetes, are targeted by lampricides. The non-parasitic ammocoetes live in the soft bottoms of slow-moving streams for three to six years prior to migrating to open waters as adults. R. at 37. After transformation to adults, the sea lamprey migrate to the open waters of Lake Champlain and begin a parasitic life style. R. at 37. Eventually, sexually-mature adults return to the tributaries to spawn. Id.

Prior to implementing the Experimental Program, FWS completed an environmental impact statement ("EIS"), which was unsuccessfully challenged in this Court. See Elliott v. U.S. Fish & Wildlife Serv., 769 F. Supp. 588 (D. Vt. 1991). At the conclusion of the treatments, the Cooperative determined that the Experimental Program had produced substantial reductions in the number of spawning lamprey, as well as increased numbers and reduced lamprey wounding of landlocked Atlantic salmon and lake trout. R. at 60-62. Excluding other native lamprey species, the Cooperative found impacts on non-target fish, amphibian, and macroinvertebrate populations to be minimal. R. at 61.

B. The Long-Term Program of Sea Lamprey Control in Lake Champlain

In order to maintain the success of the Experimental Program, the Cooperative proposed a Long-Term Program of Sea Lamprey Control in Lake Champlain (the "Program"). In

conjunction with the development of the Program, FWS produced a supplemental EIS ("SEIS). Public review of and comment on the draft SEIS ("DSEIS") occurred between March 16, 2001 and April 30, 2001. Each of the Plaintiffs commented on the DSEIS. R. at 471-46, 544-47, 552. The final SEIS, ("FSEIS") was published on September 7, 2001, 66 Fed. Reg. 46,792 (Sept. 7, 2001) and FWS issued its record of decision ("ROD") on October 9, 2001, R. at 13. This program, in particular the assessment of the environmental effects included in the FSEIS, is the subject of the present NEPA challenge.

The goal of the Program is "to achieve or surpass the fish population, recreational fishery and economic benefits realized during the [Experimental Program]." R. at 34. This goal is to be met by reducing lamprey wounding rates of Atlantic salmon, lake trout, and walleye to target levels within five years of full implementation. R. at 35.

The FSEIS evaluated three alternatives. R. at 70-78. The chosen alternative makes use of an "integrated pest management," tributary-specific approach.³ R. at 70. In addition to the use of lampricides, it employs physical barriers and trapping to reduce adult lamprey migration. Id. The chosen alternative

³ The two other alternatives considered were: Alternative 2, maintaining the sea lamprey wounding rates attained during the Experimental Program by applying chemical lampricides, and Alternative 3, the "no action" alternative. R. at 76.

targets twenty-seven streams or tributaries for lamprey control, including twelve in Vermont, thirteen in New York, and two in Canada. R. at 71. To determine the appropriate control techniques for each stream, the streams were screened for various site-specific information, including sea lamprey infestation levels, technical considerations, non-target species concerns, human impacts, habitat impacts, and costs. R. at 74-76. While the use of barriers to upstream movement and traps has been selected for a number of streams, all but two have been proposed for lampricide treatment. R. at 241.

Two different lampricides will be used under the chosen alternative. R. at 64-66. The Plaintiffs challenge the use of one of the lampricides, TFM (3-trifluoromethyl-4-nitrophenol). TFM was used during the Experimental Program and has been used extensively in other lamprey control programs: in the Great Lakes for nearly forty years and in the Finger Lakes (during the mid-1980s) and Oneida Lake (since 1984) of New York State. R. at 42-43. TFM will be applied to the stream sections once every four years. See, e.g., R. at 247.

While its mode of action is largely undefined, TFM is known to be selectively toxic to lampreys. R. at 416. However, some species of fish and amphibians, as well as many mollusks and other invertebrates, have low tolerances for TFM. R. at 148-49, 161-62, 181. Of particular concern to Plaintiffs, some of the

stream sections to be treated with TFM contain a number of rare species sensitive to TFM: seven of eight mussel species listed as threatened or endangered in Vermont and the mudpuppy, a large aquatic salamander which is a species of special concern in Vermont. R. at 93-96, 554. Among other measures that will be discussed in more detail below, the Program proposes mitigating the impacts on these species by applying TFM in concentrations shown not to harm the listed mussel species inhabiting a particular stream. R. at 9, 218.

The FSEIS also includes a number of measures designed to mitigate the adverse public health impacts of the TFM applications. Although the FSEIS concludes that no adverse effects from the TFM treatments are likely to result to mammals, prior notification of treatments and advisories against water use for cooking and drinking, swimming, fishing, livestock watering, and irrigation will be issued. R. at 208-213.

The FSEIS does not clearly state the intended duration of the Program. The Court, therefore, assumes that it is intended to continue indefinitely. The FSEIS does specify, however, that public briefing and opportunity for input will be conducted on a five year cycle. R. at 70.

II. Legal Standards

Summary judgment is appropriate only when "the pleadings, depositions, answers to interrogatories, and admissions on file,

together with the affidavits, if any, show that there is no genuine issue as to any material fact and that the moving party is entitled to a judgment as a matter of law." Fed. R. Civ. P. 56(c). When considering two opposing motions for summary judgment, the Court follows the same standard. Schwabenbauer v. Bd. of Educ., 667 F.2d 305, 313-314 (2d Cir. 1981).

Plaintiffs seek review of FWS's decision pursuant to the APA, 5 U.S.C. §§ 701-706. Under the APA, the Court must set aside an agency action, finding, or conclusion if it is "arbitrary, capricious, an abuse of discretion, or otherwise not in accordance with law." 5 U.S.C.A. § 706(2)(A)(West 1996). An agency decision is arbitrary and capricious if

the agency has relied on factors which Congress has not intended it to consider, entirely failed to consider an important aspect of the problem, offered an explanation for its decision that runs counter to the evidence before the agency, or is so implausible that it could not be ascribed to a difference in view or the product of agency expertise.

Motor Vehicle Mfrs. Ass'n v. State Farm Mut. Auto. Ins. Co., 463 U.S. 29, 43 (1983). Moreover, an agency decision is entitled to a presumption of regularity, and the burden of proof is on the party challenging the agency's decision. Friends of Pioneer Street Bridge Corp. v. Fed. Highway Adm., 150 F. Supp. 2d 637, 648 (D. Vt. 2001).

III. Standing

A. The Supplemental Affidavits

After the July 23rd hearing on the summary judgment motions, Plaintiffs moved for leave to supplement their standing affidavits pursuant to FRCP 56(e). FWS opposes supplementation of the affidavits as untimely, noting that Plaintiffs have been aware since February 2002 of the deadlines for filing written materials and have not shown cause for the delay. FWS argues that permitting supplementation at this stage will allow a litigant to sue first and establish jurisdiction later.⁴

The Court, in its discretion, grants the motion to supplement. The affidavits were submitted in an attempt to clarify Plaintiffs' standing arguments in light of questioning by the Court during the hearing. FWS will suffer no prejudice from the delayed submission since it has had the opportunity to respond to the motion and makes the same arguments it did with regard to the original standing affidavits. Moreover, as discussed below, the Court finds that even without the supplemental affidavits, VPIRG and Knight would have standing to pursue both their ecological and dioxin contamination claims.

³ FWS also argues that doing so would impermissibly convert its Rule 12(b)(1) motion to dismiss for lack of jurisdiction to a Rule 56 summary judgment motion. However, "[w]hile a 12(b)(1) motion cannot be converted into a Rule 56 motion, Rule 56 is relevant to the jurisdictional challenge in that the body of decisions under Rule 56 offers guidelines in considering evidence submitted outside the pleadings." Kamen v. Am. Tel. & Tel. Co., 791 F.2d 1006, 1011 (2d Cir. 1986); accord Holt v. U.S., 46 F.3d 1000, 1002-03 (10th Cir. 1995).

C. Plaintiffs' Standing

The standing inquiry is in part a constitutional requirement of the Article III case-or-controversy limitation. See Warth v. Seldin, 422 U.S. 490, 498 (1975). It is intended to ensure that a plaintiff has a sufficient personal stake in the dispute to make judicial resolution appropriate. Allen v. Wright, 468 U.S. 737, 770 (1984). Standing also ensures that "legal questions presented to the court will be resolved . . . in a concrete factual context conducive to a realistic appreciation of the consequences of judicial action." Valley Forge Christian College v. Ams. United for Separation of Church and State, Inc., 454 U.S. 464, 472 (1982).

"[T]o satisfy Article III's standing requirements, a plaintiff must show (1) it has suffered an 'injury in fact' that is (a) concrete and particularized and (b) actual or imminent, not conjectural or hypothetical; (2) the injury is fairly traceable to the challenged action of the defendant; and (3) it is likely, as opposed to merely speculative, that the injury will be redressed by a favorable decision."⁵ Friends of the Earth, Inc. v. Laidlaw Envtl. Servs. (TOC), Inc., 528 U.S. 167,

⁵ Courts have also created a prudential standing requirement that the interest affected fall within the "zone of interests" protected by the statute at issue. See Bennett v. Spear, 520 U.S. 154, 162 (1997). FWS does not argue that Plaintiffs' claims of ecological, aesthetic, and recreational injury are outside NEPA's zone of interests. The Court finds that they are.

180-181 (2000) (citing Lujan v. Defenders of Wildlife, 504 U.S. 555, 560-61 (1992) [hereinafter "Lujan II"]). An organization has standing to sue on behalf of its members when its members have standing to sue as individuals, the interests at stake are germane to the organization's purpose, and the participation of the members is not necessary to either the claim asserted or the relief requested. Hunt v. Washington State Apple Adver. Comm'n, 432 U.S. 333, 343 (1977). Whether the individual members of VPIRG and NAS have standing, based on their affidavits, is the only issue of organizational standing in dispute in this case.⁶

Plaintiffs have the burden of proof on each standing element because they invoke federal jurisdiction. Lujan II, 504 U.S. at 561. "Since they are not mere pleading requirements but rather an indispensable part of the plaintiff's case, each element must be supported in the same way as any other matter on which the plaintiff bears the burden of proof" Id. FWS has moved to dismiss Plaintiffs' case pursuant to Rule 12(b)(1) on the basis that Plaintiffs do not have standing. At the same time, Plaintiffs have moved for summary judgment on their claims. They have thus implicitly moved for summary judgment on

⁶ There is no allegation, and the Court can discern no reason, that any of the affiants is necessary either to the asserted claim or the relief requested. Moreover, the ecosystem injuries and loss of use of the creek for study, recreation, and observation of wildlife are clearly germane to the purposes of VPIRG and NAS.

the issue of standing as well. At summary judgment, unlike the motion to dismiss stage, Plaintiffs cannot rely on mere allegations, but are required by Rule 56(e) to set forth the specific facts underlying their claims. Id. Because the evidentiary burden is higher at summary judgment, and in order to avoid duplication of analysis, the Court will analyze standing under the summary judgment standard only.

Plaintiffs seek both individual and organizational standing. They provide affidavits from three individuals, two of whom are members of VPIRG, Knight (who also sues in her own name) and Jeffrey Hollender ("Hollender"), and one of whom is a member of NAS, Elizabeth Webb ("Webb"). In their standing affidavits each of these individuals alleges injury to their use and enjoyment of Lewis Creek resulting from FWS's decision to go forward with the Program without complying with NEPA.

1. Plaintiffs' Standing Affidavits

In their original affidavits, Knight and Webb state that they live near Lewis Creek and regularly use it for a variety of purposes, including studying and walking along its banks, as well as, in the case of Webb, collecting natural items of interest from, playing in, and canoeing on it. Knight Aff. ¶ 2; Webb Aff. ¶ 3.⁷ Both aver that they also visit the creek to

⁶ The original standing affidavits are attached to Plaintiffs' Statement of Undisputed Material Facts (Paper 15) as Exhibits 7 (Knight) and 14 (Webb). Knight's supplemental

"observe the beauty and biological diversity of the watershed" and note that they are aware that the watershed "is a haven for wildlife, including some that are threatened with extinction." Id. More specifically, each notes that she is aware of the listed mussel species and mudpuppies that live in the creek. Webb notes that she "derive[s] particular enjoyment from studying, observing, and working to ensure the continued health of endangered and threatened species and their populations" in Lake Champlain, Lewis Creek, and other Lake Champlain tributaries. Webb Aff. ¶ 4.

In her supplemental affidavit, Knight elaborates on her uses of Lewis Creek, noting that during her visits to Lewis Creek she "view[s] and appreciate[s] ducks and other wildlife" and "how vibrant the Lewis Creek ecosystem appears" to be. Knight Suppl. Aff. ¶ 3. She also states that while she has yet to see a mudpuppy in Lewis Creek, "I would like to think that someday I or my grandchildren may see one, and like to know that they are present in the creek." Id.

Hollender also lives near Lewis Creek and regularly uses and enjoys it for boating, canoeing, and swimming with his family. Hollender Aff. ¶¶ 1,4. Like Knight and Webb, Hollender and his family enjoy the creek's beauty and biological diversity

affidavit and Hollender's affidavit are attached to Plaintiffs' Motion for Leave to Supplement Affidavits (Paper 36) as Exhibits 1 (Knight) and 2 (Hollender).

while they are using it. Hollender also states that he has never observed a mudpuppy in Lewis Creek, but that he hopes to during one of his future visits and that he "like[s] to know [the mudpuppies] exist." Hollender Aff. ¶ 7. Hollender has observed mussel shells in Lewis Creek, and he states that while he does not know what species the shells belong to, he likes to think that they are Vermont listed species. Id. He further states that he understands "that each species has a special role to play in a functioning ecosystem." Id. He provides the example that mussels serve as a major food source for wild ducks that overwinter on Lake Champlain. Id.

Knight and Webb each state that they are aware that past applications of TFM have killed many non-target organisms, including mussels and salamanders. Knight Aff. ¶ 8; Webb Aff. ¶ 2. In this regard, each discusses the concept of "ecological integrity." Knight states that she understands the importance of protecting Lewis Creek's "ecological integrity," which she defines as existing when "a stream's complete biotic community is intact and sustainable." Knight Aff. ¶ 6. She states that she is concerned that the application of TFM will irreparably damage Lewis Creek's ecological integrity, by eliminating threatened and endangered species. Id. ¶ 10. Such damage would "directly and permanently" harm the various uses and values of Lewis Creek that she enjoys. Id. Webb similarly avers that

such a loss of biodiversity would adversely impact her uses of Lewis Creek. Webb Aff. ¶¶ 3,6.

Finally, Knight, Webb, and Hollender describe their concerns about the public health impacts of TFM treatments. Webb and Knight each assert that they are concerned about the human health threats caused by TFM and that based on this concern they will limit their activities, and those of their children and grandchildren, in and around waters treated with TFM. Knight Aff. ¶ 2; Webb Aff. ¶3. Knight further states that she has researched the impacts of pesticides on natural resources since 1995 and that she understands that TFM toxicity varies during treatments depending on water conditions and other variables. Knight Aff. ¶ 8. She avers in her supplemental affidavit that she may continue to limit her use of Lewis Creek beyond the time period recommended by FWS. Knight Suppl. Aff. ¶ 6. Hollender states that he is knowledgeable about toxic hazards, including dioxins, and that he is concerned about the limited information available on the dioxin contaminant in TFM. Hollender Aff. ¶¶ 5, 6. He states that he will not only stop using Lewis Creek during the treatments, pursuant to the advisories, but that he will likely stop his use of Lewis Creek for "considerably longer" than the FWS warnings advise. Id. ¶ 6.

2. Injury In Fact

The main dispute between the parties involves the existence of "injury in fact." "The injury in fact requirement precludes those with merely generalized grievances from bringing suit to vindicate an interest common to the entire public." Friends of the Earth, Inc. v. Gaston Copper Recycling Corp., 204 F.3d 149, 156 (4th Cir. 2000) (citing Lujan II, 504 U.S. at 575). A NEPA plaintiff must demonstrate two kinds of injury to meet the injury in fact requirement. NEPA places procedural obligations on agencies that are designed to promote informed consideration of the environmental consequences of agency action prior to commitment of resources. Robertson v. Methow Valley Citizens Council, 490 U.S. 332, 349 (1989). See discussion infra Part III.C. Thus, Plaintiffs must first demonstrate an injury of increased risk of environmental harm resulting from an agency's uninformed decisionmaking. Sierra Club v. U.S. Dep't of Energy, 287 F.3d 1256, 1265 (10th Cir. 2002); Douglas County v. Babbitt, 48 F.3d 1495, 1500 (9th Cir. 1995). Plaintiffs must also demonstrate that they are "among the injured" for purposes of Article III. Sierra Club v. Morton, 405 U.S. 727, 735 (1972). Accordingly, Plaintiffs must secondly demonstrate that this increased risk of environmental harm injures their concrete interests. Sierra Club v. U.S. Dep't of Energy, 287 F3d at 1265; Douglas County, 48 F.3d at 1500.

In this case, Plaintiffs allege that the FSEIS includes

incomplete consideration of TFM's impacts on mussels, mudpuppies, and human health. The individual affidavits, as well as the pleadings, detail the information gaps Plaintiffs allege exist. The affiants allege that in spite of this inadequate information, FWS has chosen to go forward with repeated TFM treatments of Lewis Creek. Each affiant alleges that these applications are likely to cause the diminishment or loss of mudpuppy and mussel populations in Lewis Creek. The standing affidavits and the extra-record exhibits⁸ provided by the Plaintiffs, in particular the expert affidavits and the Endangered Species Committee Status Report for the mudpuppy, are sufficient to establish an increased risk of environmental harm due to FWS's alleged failure to follow NEPA procedures. Similarly, each affiant alleges that the decision to apply TFM will create environmental human health risks. The extra-record evidence from the Vermont Department of Health provides further foundation for these allegations that is sufficient to establish a threatened risk of increased harm.

FWS focuses most on the second injury in fact requirement: whether the affiants have demonstrated that their concrete interests will be harmed by the increased risk of environmental

⁸ Defendants do not object to the consideration of these extra-record exhibits to the extent they relate to standing. Def. [FWS's] Opp'n to Pls.' Mot. for Summ. J. (Paper 26) at 11 n.9.

harm. There can be no doubt that such concrete interests include the kind of aesthetic and recreational uses of Lewis Creek that the affiants claim to enjoy. “[E]nvironmental plaintiffs adequately allege injury in fact when they aver that they use the affected area and are persons ‘for whom the aesthetic and recreational values of the area will be lessened’ by the challenged activity.” Laidlaw, 528 U.S. at 182 (quoting Sierra Club v. Morton, 405 U.S. at 735). FWS challenges both whether the affiants sufficiently aver: (1) that they use the affected area and (2) that their use and enjoyment of it will be lessened.

All three affiants live in the Lewis Creek watershed and state that they regularly use Lewis Creek and will continue to do so in the future. In their supplemental affidavits Knight and Hollender provide detailed information on the locations of their uses, each of which is downstream from the TFM application point. Webb does not provide such detail. Unlike Knight and Hollender, who live in Charlotte, downstream of at least one of the application points, Webb notes only that she lives in Monkton. FWS points out that Monkton is upstream from the TFM application point and that there is no evidence that the TFM will move upstream.

Because Webb does not state that she uses the downstream portions of Lewis Creek affected by TFM, FWS argues she cannot

meet the concrete interest test. In Lujan v. National Wildlife Federation, 497 U.S. 871 (1990) [hereinafter "Lujan I"], when confronted with affidavits that alleged the affiants only used lands "in the vicinity" of allegedly damaging mining activities, the Supreme Court was unwilling to presume that the affiants were using those portions of the land that had been affected by the mining. 497 U.S. at 886-87, 889. While there may be some room for debate over how specific a plaintiff's averments must be under Rule 56(e), under the Supreme Court's holding in Lujan I the Court cannot presume that Webb actually uses the impacted areas where she has not provided some more specific indication that she does so. Webb has not established sufficient injury in fact to establish standing. Because NAS's organizational standing depends on Webb's individual standing, NAS cannot establish standing in this case.

Turning to the second aspect of injury in fact, Knight and Hollender also provide sufficient facts to demonstrate that their use and enjoyment of Lewis Creek will be lessened by the TFM applications. First, their ability to observe and study the wildlife and biodiversity of Lewis Creek will be lessened if mudpuppies and mussel populations are lost or diminished. This is because these populations will either be harder to find or non-existent in the creek. See Humane Soc'y of the U.S. v. Babbitt, 46 F.3d 93, 96 (D.C. Cir. 1995) (injury in fact exists

where the agency "conduct threaten[s] to diminish or deplete the overall supply of endangered animals available for observation and study.") (emphasis omitted).

FWS argues that the affiants are required specifically to allege that they have observed and intend to observe in the future the particular species they allege are at risk. The Court does not believe that this level of specificity is required at the summary judgment stage in this case.

It is not surprising that Knight and Hollender have not observed the listed mussel species or the mudpuppy in the past, given that they are rare. Such a failure does not indicate that the affiants have little actual interest in Lewis Creek or are the kind of "concerned bystanders" the injury in fact requirement is designed to eliminate. See Valley Forge, 454 U.S. at 473. On the contrary, the affiants' long-term and regular use and enjoyment of, and interest in protecting, Lewis Creek's biodiversity, and in particular its rare species, sets them apart from the general public.⁹ At least one other court

⁹ For this reason, the Court does not find that Hollender has not sufficiently alleged injury in fact by failing to state that he knew about the Program on the date the complaint was filed. It is true that Hollender is a late addition to the lawsuit and that he did not comment on the DSEIS. However, these technical concerns do not mean that he has failed to demonstrate a sufficient direct stake in the litigation. He has averred that he regularly uses the affected sections of Lewis Creek and provides specific testimony about how the TFM application will harm him. This is more than sufficient to demonstrate a direct stake in the litigation.

has similarly found that the value a plaintiff placed on knowing that a particular species existed in streams in which the plaintiff spent considerable time studying and recreating created a concrete interest. See S.W. Center for Biological Diversity v. Clark, 90 F. Supp. 2d 1300, 1308 (D.N.M. 1999) (plaintiff had not observed the rare fish species and could not distinguish it from other similar species).

Moreover, the supplemental affidavits specifically state that Knight and Hollender hope to observe these species in the future and that Hollender has observed mussel shells in the past. While it is true that most other cases have involved past observations of the species at issue, not all have. Ongoing and future attempts to observe a particular species can be sufficient. See Sierra Club v. Babbitt, 15 F. Supp. 2d 1274, 1277 (S.D. Ala. 1998) (finding injury in fact in part where plaintiffs had made efforts to observe an endangered mouse but did not aver that they had succeeded in doing so). See also Idaho Farm Bureau Fed'n v. Babbitt, 58 F.3d 1392, 1399 (9th Cir. 1995) (finding injury in fact where plaintiffs' members lived in the state and visited the areas inhabited by a rare snail, and maintained a factual and scientific understanding of the snail, its habitat, and threats to the species). The Supreme Court's decision in Lujan II is not to the contrary. In that case each of the affiants stated that she had not observed the species of

interest during previous trips to the impacted habitats. Lujan II, 504 U.S. at 563. The Supreme Court did not fault the affiants' failure to view the species in the past, but focused on the fact that they had no future travel plans to visit the habitat again. Id. at 564.

The second injury the Plaintiffs argue they will suffer also results from the loss or diminishment of these species. Plaintiffs argue that this loss or diminishment will be damaging to the "ecological integrity" of the creek, that is, the creek as a complete, functioning, and diverse biotic community. FWS faults this injury as too abstract.¹⁰ FWS notes that Knight fails to provide any example of the sensory impact such a loss will create, but relies instead on her knowledge that the creek's biotic community will be less intact.

The Court does not agree that the Plaintiffs' ecosystem-based argument is necessarily incompatible with Article III standing requirements. As the Court in Southwest Center stated, "a legal standard intended to distinguish real from conjecture [should not be used] to deny what we know from common experience, that more than readily visible changes in our immediate environment can threaten us directly and concretely

¹⁰ In this day and age, the benefits of intact, functioning ecosystems or biological communities can hardly come as a shock to an agency such as FWS. Indeed, the Program itself is designed to correct a similar kind of imbalance to the Lake Champlain ecosystem caused by a non-native invader.

with imminent and personal harm." 90 F. Supp. 2d at 1307. See also Gaston Copper, 204 F.3d at 160 (noting that plaintiff "need not wait until his lake becomes barren and sterile or assumes an unpleasant color and smell before he can invoke the protections of the Clean Water Act.").

The Supreme Court recently approved injury in fact manifested by plaintiffs' knowledge of or subjective concern about environmental degradation stemming from uncontroverted illegal upstream pollution discharges. In Laidlaw the Court found sufficient injury to the plaintiffs' use and enjoyment of a river based on the plaintiffs' concerns that the river was polluted, even though the district court had found after trial that no environmental degradation or health risk had resulted from the discharges. 528 U.S. at 182-83. In its pleadings, FWS distinguished this case by arguing that the plaintiffs had in fact observed that the water looked and smelled polluted. However, the Court did not premise injury solely on the affidavit of the one plaintiff who had observed that the water looked and smelled polluted. See id. Instead, it stated that where subjective concerns about the level and impacts of the pollution were reasonable, it saw "nothing improbable" in the plaintiffs' curtailment of their recreational use of the river and their beliefs that the aesthetic and economic value of the surrounding area had declined. Id. at 184-85; Gaston Copper,

204 F.3d at 159 (same).

In this case, the Court similarly finds it credible that an individual, such as Knight, who has devoted considerable time to observing, studying, and simply experiencing an area in its natural, functioning state, who has described the area as vibrant, beautiful, and richly biodiverse, and who values the biotic community in its present state, would find her use and enjoyment of the area less valuable and fulfilling upon knowing that one or more rare members of the community has been lost. See Ecological Rights Found. v. Pac. Lumber Co., 230 F.3d 1141, 1149 (9th Cir. 2000) (injury in fact established where evidence "show[s] a connection to the area of concern sufficient to make credible the contention that the [plaintiff] . . . really has or will suffer in his or her degree of aesthetic or recreational satisfaction"); Sierra Club v. Cedar Point Oil Co. Inc., 73 F.3d 546, 557 (5th Cir. 1996) ("Whether the affiants were 'concerned' or 'believed' or 'knew to a moral certainty' that produced water would adversely affect their activities on the bay is a semantic distinction that makes little difference in the standing analysis. The requirement that a party demonstrate an injury in fact is designed to limit access to the courts to those 'who have a direct stake in the outcome,' . . .").

Nor is Plaintiffs' theory of ecosystem injury the same as the ecosystem-nexus theory rejected by the Court in Lujan II.

504 U.S. at 565-66. That theory would have provided standing to any user of any part of a contiguous ecosystem adversely affected by an agency action regardless of the user's proximity to the damage. Id. In this case Knight regularly uses the portion of the ecosystem affected. Other courts have recognized that cascading community and ecosystem effects can create concrete injury to such regular users. See Sierra Club v. Babbitt, (premising injury from loss of unobserved endangered mouse in part on its role in dispersing sea grass seeds).

Finally, Knight and Hollender cite the limitations on their physical use of Lewis Creek that TFM applications will cause. Similar to the plaintiffs in Laidlaw, the affiants state that, based on their concerns about the risks of TFM, they will limit their activities in and around the waters of Lewis Creek after the applications. FWS will in fact advise restrictions on use of the water for drinking, swimming, or fishing during and after the treatments. R. at 280. These recommended restrictions lasted for 2-6 days in most streams during the Experimental Program. Id. Plaintiffs' curtailment of their use of the creek, both in and alongside its waters, cannot be said to be unreasonable in light of such advisories. Nor can such restrictions be faulted as too limited in duration to be cognizable under Article III. Even "an identifiable trifle" constitutes sufficient injury for standing purposes. Pub.

Interest Research Grp. of N.J., Inc. v. Powell Duffryn Terminals Inc., 913 F.2d 64, 71 (3d Cir. 1990); Gaston Copper, 204 F.3d at 156; Cedar Point Oil, 73 F.3d at 557. Moreover, Knight and Hollender indicate that based on their concerns about the data gaps and the toxicity of TFM and its dioxin contaminants, they will likely restrict their use for longer than recommended by FWS. These restrictions in use are sufficient to create injury in fact.

3. Causation

FWS also challenges the traceability element of standing. To demonstrate this element in the NEPA context, a plaintiff must show that the increased risk of environmental harm to her concrete interests is "fairly traceable" to the agency's failure to comply with NEPA. Sierra Club, 287 F.3d at 1265. See also Lujan II, 504 U.S. at 560-61. This requirement is clearly met here. Plaintiffs allege that FWS's decision to pursue TFM treatments under the Program is based on inadequate consideration of the impacts of the TFM treatments on non-target species and the environmental and human health. The increased risk that mussels and mudpuppies will be lost and that dioxins will be released to the environment stems directly from the impending TFM applications. There is no allegation that the independent actions of a third party will somehow cause the

increased environmental harm, Lujan II, 504 U.S. at 560-61,¹¹ or that “an attenuated chain of conjecture” is needed to show causation, Hall v. Norton, 266 F.3d 969, 977 (9th Cir. 2001) (internal quotation marks omitted).

Nor does the fact that Knight and Hollender did not address past lampricide treatments of Lewis Creek prevent a finding of traceability. In fact, these past treatments provide a basis for their concerns that mudpuppies and mussels will be negatively affected by the present treatments. The listing of the mussel species post-dates the initiation of the Experimental Program, R. at 90-92, thus affiants also had less reason to be concerned about non-target impacts at that time. Similarly, the long-term nature of the Program has raised new concerns about population impacts. Moreover, the EIS for the Experimental Program did not address potential dioxin contamination problems because these problems were not known until 1995. Thus, the affiants did not have the same reasons to be concerned about use of Lewis Creek after previous treatments.

¹¹ FWS suggests, however, that causation is not present because the Program will in fact improve ecological integrity by reducing non-native lamprey populations and increasing native fish populations. While this may be true, Plaintiffs are concerned about the impacts of the loss of other native species on ecosystem integrity. The Court cannot determine whether one of these ecosystem effects outweighs the other. For example, is the loss of a rare and native filter-feeding mussel less important than the gain in stocked salmonid predators? As FWS provides no basis for making such a determination, the Court can do no more.

4. Redressibility

Finally, FWS argues that Plaintiffs have not shown that their injury is redressible by the Court. Redressibility requires that "it is likely, as opposed to merely speculative, that the injury [to Plaintiffs] will be redressed by a favorable decision." Laidlaw, 528 U.S. at 181. The requirement of redressibility is relaxed in the NEPA context. Plaintiffs need not demonstrate that the ultimate agency decision would change upon compliance with NEPA's procedures. See Lujan II, 504 U.S. at 572 n.7 (noting that because the normal standard of redressibility is lessened, the Court would not require plaintiffs to demonstrate with any certainty that informed decisionmaking would create an outcome favorable them); Hall, 266 F.3d at 977; Comm. to Save the Rio Hondo v. Lucero, 102 F.3d 445, 452 (10th Cir. 1996).

Plaintiffs clearly meet this standard. In fact, the FSEIS concludes that non-target impacts will be minimal or non-existent based on the toxicity information on which it relies. It similarly concludes that the dioxin contaminants create no risk to human or environmental health. The chosen alternative and ROD are based on these findings of limited impact. Plaintiffs argue that FWS has failed to consider certain impacts on non-target species and data on the TFM contaminants. If Plaintiffs are correct in their assessment of the merits, it

seems likely that their concerns would be redressed by either additional mitigation or a change in the chosen alternative.

Moreover, FWS's assertion that redress is unlikely because New York and Vermont could decide to move ahead with the TFM treatments on their own is not convincing. FWS provides no evidence that either state would be willing and able to do so.

5. The Breadth of Plaintiffs' Standing

Finally, FWS argues that because Plaintiffs have established that their use of Lewis Creek is injured by the Program, they are limited to seeking declaratory and injunctive relief related to implementation of the Program in Lewis Creek alone. Plaintiffs, however, also seek declaratory and injunctive relief related to the implementation of the Program as a whole.

It is true that "a plaintiff must demonstrate standing separately for each form of relief sought." Laidlaw, 528 U.S. at 185. See id. at 185-87 (plaintiffs could seek injunctive relief and civil penalties that would accrue to the government because the penalties would serve to deter future injury to plaintiffs). In this case, FWS alleges that enjoining implementation of the Program as a whole, including in other tributaries, is not necessary to remedy the injury to Plaintiffs' use of Lewis Creek.

The Court does not agree. Plaintiffs have standing to

challenge the NEPA analysis and implementation of the Program as a whole. It is true that Plaintiffs focus on Lewis Creek to demonstrate that implementation of the Program will injure them. However, the site-specific treatment plan for Lewis Creek is based in large part on analysis of environmental and public health impacts of the Program as a whole. By undertaking a programmatic EIS, FWS has limited the need to undertake redundant consideration of the environmental impacts the Program may cause when implemented at individual tributaries. Thus, Plaintiffs' challenge necessarily encompasses the Program as a whole. Cf. Ohio Forestry Ass'n v. Sierra Club, 523 U.S. 726, 734 (1998) (noting that initiation of site-specific logging under a National Forest Management Act plan would permit plaintiffs to challenge the entire program, as well as the logging, if the plan played a causal role in the harm produced by the site-specific application).

If the Court were to find that FWS's consideration of certain environmental impacts of the Program are violative of NEPA, any site-specific implementation that relies on that analysis would be similarly flawed. This is an unavoidable result of the manner in which FWS chose to undertake its NEPA analysis.¹²

¹² It is difficult to imagine how the Court could find portions of the Program to be violative of NEPA and not find all site-specific implementations of the Program relying on such

IV. Motion to Strike

A. Extra-Record Evidence

Along with their summary judgment pleadings, Plaintiffs have submitted a number of supporting exhibits. FWS objects to any consideration of these exhibits as they were not part of the administrative record considered by FWS in making its decision.

Court review of an agency decision is generally confined to the administrative record compiled by that agency when it made the decision. Florida Power & Light Co. v. Lorion, 470 U.S. 729, 743-44 (1985); Nat'l Audubon Soc'y v. Hoffman, 132 F.3d 7, 14 (2d Cir. 1997). However, exceptions to this "record rule" exist. See Citizens to Preserve Overton Park, Inc. v. Volpe, 401 U.S. 402, 420 (1971), overruled on other grounds by Califano v. Sanders, 430 U.S. 99, 105 (1977). Exceptions are particularly necessary in the context of review of agency NEPA decisions "because NEPA imposes a duty on [the agency] to compile a comprehensive analysis of the potential environmental impacts of its proposed action, and review of whether the agency's analysis has satisfied this duty often requires a court to look at evidence outside the administrative record." Hoffman, 132 F.3d at 14-15.

Accordingly, the Court may review extra-record evidence in the NEPA context in order "to determine that the information

analysis to also be violative of NEPA.

available to the decisionmaker included a complete discussion of environmental effects and alternatives." Hoffman, 132 F.3d at 15 (citing County of Suffolk v. Secretary of the Interior, 562 F.2d 1368, 1384 (2d Cir. 1977)); accord Nat'l Audubon Soc'y v. U.S. Forest Serv., 46 F.3d 1437, 1447 (9th Cir. 1993). Extra-record review can be used as a means of ensuring that the agency has not "swept stubborn problems or serious criticism . . . under the rug." County of Suffolk, 562 F.2d at 1384-85.

The Plaintiffs assert that all of the extra-record exhibits should be considered by the Court because they address informational or analytical gaps in the record. See Hoffman, 132 F.3d at 15. Specifically, they argue that the exhibits are necessary to fill gaps related to the direct, indirect, and cumulative effects of multiple TFM applications on endangered and threatened mussel species and mudpuppies, and to evaluate the direct, indirect, and cumulative effects of multiple applications of TFM contaminated with dioxin.

The FSEIS and remainder of the record clearly consider the direct, indirect, and cumulative effects of the TFM applications on the sensitive species at issue. The Court has reviewed the specific portions of these exhibits identified by the Plaintiffs and does not agree that they are necessary to address any informational gaps.

The issue is not as clear cut with regard to the dioxin

contamination. Plaintiffs strongly suggest that FWS has attempted to sweep concerns about dioxin contamination in TFM "under the rug." FWS issued its ROD just prior to receiving EPA's comments on the FSEIS. These comments arguably raise issues not explicitly addressed in the limited dioxin discussion included in the FSEIS. In particular, they suggest inclusion of consideration of the total load of dioxin added to Lake Champlain from TFM treatments, the ecology and human health impacts of dioxin contamination, and dioxin levels in current TFM formulations. EPA Letter, Pls. Statement of Undisputed Material Facts (Paper 15), Ex. 1 at 4. The Court will consider this letter in order to supplement the record on these particular issues and to evaluate Plaintiffs' claims that FWS may have attempted to avoid full consideration of the dioxin issue. For the same reasons, the Court will also consider the 2001 aquatic nuisance control permit for Lewis Creek ("ANC permit") granted by the State of Vermont after publication of the FSEIS, but only to the extent that it addresses public health risks caused by TFM impurities. ANC permit, Pls. Statement of Undisputed Material Facts, Ex. 3 at 13-14.¹³

¹³ The Court ruled orally on these motions during the July 23, 2002 hearing. In doing so it granted the motion to strike, in part, but denied it with regard to the EPA letter and two state permits for treatment of Lewis Creek. Upon further evaluation of the permits, the Court will grant the motion with regard to the Endangered and Threatened Species Takings Permit, as it does not provide any relevant information not included in

FWS argues that regardless of the extra-record exceptions, the Court should not consider the additional dioxin contamination information because the Plaintiffs failed to raise their concerns about dioxin contamination during the NEPA process. See Vermont Yankee Nuclear Power Corp. v. NRDC, 435 U.S. 519, 553 (1978); Havasupai Tribe v. Robertson, 943 F.2d 32, 34 (9th Cir. 1991) (per curiam) (citing Vermont Yankee). This issue exhaustion argument is not convincing.

First, there is no allegation that this case involves the obstructionism and game-playing by Plaintiffs that concerned the Supreme Court in Vermont Yankee. See 435 U.S. at 553-54. Second, a question exists as to whether issue exhaustion is required in the NEPA context. “[R]equirements of administrative issue exhaustion are largely creatures of statute.” Sims v. Apfel, 530 U.S. 103, 107-08 (2000). Accordingly, where no such statutory or regulatory requirement exists, a judicially imposed requirement of issue exhaustion is based on the extent to which the particular administrative proceeding is “analog[ous] to normal adversarial litigation.” Id. at 109.

While Sims focused on adjudicative administrative proceedings in the social security context, its reasoning seems equally applicable to administrative issue exhaustion in the NEPA context. Two circuits, in decisions pre-dating Sims, are

the record.

split on the issue of whether issue exhaustion is appropriate in the context of notice and comment rulemaking review under the APA. Compare Am. Forest & Paper Ass'n v. EPA, 137 F.3d 291, 295-96 (5th Cir. 1998) (not requiring exhaustion) with Nat'l Ass'n of Manufacturers v. U.S. Dep't of the Interior, 134 F.3d 1095, 1111 (D.C. Cir. 1998) (requiring exhaustion). In NEPA cases, courts have required issue exhaustion during the public comment period, unless some equitable exception applies. See, e.g., Holy Cross Wilderness Fund v. Madigan, 960 F.2d 1515, 1528 n.18 (10th Cir. 1992); Morris v. Myers, 845 F. Supp. 750, 755 (D. Or. 1993) (and cases cited therein). However, no court appears to have focused on the question of whether issue exhaustion is statutorily required, as Sims would seem to require.

Based on this Court's review, neither NEPA, nor the APA, nor any underlying regulations, specifically requires issue exhaustion. Thus, given that the NEPA public comment process is hardly analogous to a normal adversarial proceeding, under the reasoning of Sims issue exhaustion is not necessary. However, even if such exhaustion could be judicially-imposed, the Court perceives no equitable reason for so requiring in this case. The record indicates that the Great Lakes lamprey control program, upon whose experience FWS repeatedly relies in justifying the Program, had dealt with the dioxin contamination

issue extensively in the years preceding the DSEIS. The DSEIS did not mention the issue of dioxin contamination, making it difficult to argue that Plaintiffs had similarly been put on notice of the issue prior to its opportunity to comment. Moreover, FWS was aware of the dioxin issue by the time of publication of the FSEIS and thus did have an opportunity to address the issue as a whole, if not Plaintiffs' specific concerns. See Am. Forest, 137 F.3d at 295-96.

B. Judicial Notice

Plaintiffs also argue, in the alternative, that the Court should take judicial notice of portions of the extra-record exhibits included in their summary judgment motion and statement of undisputed material fact. See Fed. R. Evid. 201. However, Plaintiffs fail to explain why the Court should take judicial notice of information that is already sufficiently included in the record. Any information that might be subject to judicial notice would also need to be relevant to the environmental effects of the Program and not otherwise considered by the FSEIS. Accordingly, the Court will not take judicial notice of any of the facts included in the exhibits.

C. Material Disputed Facts

FWS also seeks to strike the Statement of Undisputed Material Facts submitted by Plaintiffs. Under Local Rule 7.1(c)(1) "[a] separate, short, and concise statement of

undisputed material facts" must accompany all summary judgment motions, except when the motion involves a challenge to administrative action under the APA. FWS argues that given the exception for APA cases and because there can be no dispute as to the content of the administrative record, submission of the statement was improper.

Local Rule 7.1 does not by its terms prohibit the submission of a Statement of Undisputed Material Facts in an APA challenge. It just does not require that one be submitted. While such a statement may be of limited use in many APA cases, in complicated cases with voluminous records such as this one, the statement can serve the useful purpose of highlighting areas of agreement and disagreement. On the other hand, FWS correctly points out that much of Plaintiffs' statement is argumentative and conclusory or includes information the Court has concluded is outside the record rule. While the Court finds no justification for striking the entire statement, it will not consider the portions relying on or consisting of such materials.¹⁴

Finally, FWS and the State of New York make a separate

¹⁴ The Court will consider paragraphs 1, 2, 3, 5, 9, 12, 14, 19, 21, 28, 29, 33, 34, 37, 38, 39, 41, 42, 43, and 45 in full. It will consider paragraphs 4, 6, 7, 8, 10, 11, 13, 15, 16, 17, 18, 20, 22, 23, 24, 25, 26, 30, 31, 35, 36, 40, and 44 in part because these paragraphs contain some statements that either rely on extra-record evidence or are argumentative or conclusory.

challenge to the affidavits included with Plaintiffs' motion for summary judgment, arguing that the affidavits are violative of Fed. R. Civ. P. 56(e) and various rules of evidence because they are not based on personal knowledge and present inadmissible facts. The Court has already excluded these affidavits under the extra-record rule, thus there is no need to consider Defendants' further challenges to these affidavits.

V. The Merits

NEPA requires an agency to prepare an EIS prior to undertaking a major federal action significantly affecting the quality of the human environment. 42 U.S.C. § 4332(2)(C). An EIS is a detailed statement by which the agency describes the environmental impact of the project, including direct, indirect, and cumulative impacts. Id. (C)(i). It must also consider any unavoidable adverse environmental effects of the proposed action and alternatives to the proposed action. Id. (C)(ii),(iii).

Preparation of an EIS promotes two key NEPA goals:

It ensures that the agency, in reaching its decision, will have available, and will carefully consider, detailed information concerning significant environmental impacts; it also guarantees that the relevant information will be made available to the larger audience that may also play a role in [] the decisionmaking process

Methow Valley, 490 U.S. at 349.

However, NEPA requires only that an agency take a "hard look" at the environmental consequences of a proposed action.

Id. at 350. It is a procedural statute and does not mandate particular results. Id. See also Sierra Club v. U.S. Army Corps of Eng'rs, 772 F.2d 1043, 1050 (1983) (NEPA does not elevate environmental concerns over other priorities or prohibit actions that harm the environment, where the environmental consequences were fully considered). Thus, an EIS is not "inadequate if the agency has made an adequate compilation of relevant information, has analyzed it reasonably, has not ignored pertinent information, and has made disclosures to the public. Sierra Club v. U.S. Army Corps of Eng'rs, 701 F.2d 1011, 1029 (2d Cir. 1983).

Plaintiffs make a number of challenges to the adequacy of the FSEIS. The Court addresses each of these in turn.

A. Ecological Impacts

Plaintiffs argue that the FWS's decision to adopt the proposed action is arbitrary and capricious because the FSEIS fails to give the requisite "hard look" at certain direct, indirect, and cumulative impacts of the Program on mudpuppies and threatened and endangered mussel species that inhabit some of the tributaries proposed for treatment. "Direct effects" are those effects "which are caused by the action and occur at the same time and place." 40 C.F.R. § 1508.8(a). "Indirect effects" are those effects "which are caused by the action and are later in time or farther removed in distance, but are still

reasonably foreseeable." § 1508.8(b). In this case, the direct effect at issue is the acute or immediate toxicity of TFM to mussels and mudpuppies. Indirect effects include the latent toxicity of TFM and the sublethal effects of TFM. Cumulative impacts are discussed in a separate section below.

Before proceeding it is worth noting that, in general, the Plaintiffs take an extremely broad view of the kinds of individualized consideration they feel FWS was required to undertake in evaluating impacts on non-target species. They focus at great length on the need for species-specific and age class-specific information on a myriad of different potential near-term and long-term impacts on mussels and mudpuppies. While individuals may agree or disagree about the merits of such a thorough and precautionary approach to actions that may harm the environment, the requirements of NEPA create the relevant baseline for the Court's review. Under NEPA, an agency must take a "hard look" at environmental consequences, however, an EIS "need not be exhaustive to the point of discussing all possible details bearing on the proposed action." County of Suffolk, 562 at 1375. With this in mind, the Court will address Plaintiffs' complaints.

1. Toxicology Terminology

Some background information on toxicity measures is necessary to understand the dispute over the toxicity impacts.

Acute toxicity is the concentration of a substance producing 10 percent or less mortality in a particular organism during controlled (experimental) exposures. R. at 154. This value is also termed the "no-observed effect concentration" ("NOEC") because 10 percent mortality is assumed to be due to random effects, not treatment effects. Id. The minimum lethal concentration ("MLC") is the minimum concentration producing 99.9 percent mortality in exposed ammocoetes in a nine hour period. R. at 64. This measure is used to describe the NOEC for a non-target species, e.g., 1.5 times MLC.

Latent toxicity involves mortality occurring at a more remote time than acute toxicity, although the FSEIS does not define this term exactly. R. at 155. Sub-lethal impacts are those that do not cause mortality, but may have other negative impacts, for example, reduced reproductive capability.

"Narcosis" is a sub-lethal effect that has been observed in mussels treated with TFM. R. at 156. Narcosis causes the muscle tissue of the mussel to relax, which in turn can cause gaping of the valve (opening of the mussel shell) and extension of the mussel's foot. R. at 5772.

2. Direct and Indirect Impacts on Mussels

The FSEIS concludes that applications of TFM at concentrations of 1.3 to 1.5 times the MLC for sea lamprey will cause minimal impacts on listed mussel species. R. at 144, 155.

Plaintiffs argue that this conclusion is uninformed and unreasonable because it was made on the basis of limited toxicity data and limited consideration of sub-lethal and long-term effects of TFM applications on mussels.

With regard to acute toxicity, the FSEIS relies on the known NOECs for three of the listed mussels, as well as two non-listed mussels, ranging from 1.0 to 1.3 MLC. It does not consider NOECs for four other listed mussels, because, as the FSEIS acknowledges, such NOECs had not been determined at the time of publication. R. at 219. As a mitigation measure, the FSEIS states that additional toxicity tests will be conducted to determine the NOECs for the remaining mussels and that TFM will be applied at concentrations below these NOECs. R. at 218-19.

However, the FSEIS relied on more than experimental toxicity data in evaluating the toxicity impacts on mussels. It also relied on the fact that few if any mussel mortalities were observed in post-treatment mortality studies in Lake Champlain tributaries during the Experimental Program. R. at 156, 413-14. In addition, the FSEIS concludes that these mortalities may overestimate actual acute toxicity, in particular by including temporarily narcotized mussels. R. at 156. In light of this Lake Champlain and tributary-specific data, FSEIS could give the requisite "hard look" to the issue of acute toxicity without first developing NOECs for each individual listed mussel.

The FSEIS also clearly considered latent toxicity and narcosis effects in concluding that future treatments would minimally impact mussels. While most studies considered in the FSEIS have observed treated mussels for 48 hours or less, FWS also discusses a recent study of two species of mussels that found survival and growth rates to be similar between control and treated groups a year after treatment. R. at 155-56. In addition, FWS reviewed and discussed a number of studies on the narcotizing effects of TFM applications on mussels. R. at 156. The FSEIS also considers the longer term impacts that TFM-induced mortalities and sub-lethal impacts may have on mussel populations. The record demonstrates that FWS reviewed the few studies that have discussed longer term survival and growth impacts of lampricides on mussels. R. at 155-56, 160-61, 5749. The FSEIS also recognizes potential sub-lethal reproductive effects. R. at 150, 3260 (monitoring of gravid mussels in the Poultney River during the Experimental Program). These studies have not demonstrated measurable effects.

Moreover, FWS properly notes that the Lake Champlain Program is not being undertaken in a vacuum. Its approach and protocols are modeled after the forty years of treatment and 2,600 lampricide applications undertaken in the Great Lakes. R. at 47, 190. Review of this program has demonstrated limited impacts on macroinvertebrate communities, including freshwater

mussel populations. R. at 123, 124, 5749. Accordingly, the lack of larval toxicity and the limited species-specific latent toxicity and narcosis data does not mean that FWS could not make a reasoned decision to proceed. It is well within FWS's discretion to rely on studies from one lake system in evaluating the effects on another lake system, particularly where Plaintiffs have provided no scientific evidence to contradict this reliance.¹⁵ Assessment of ecological impacts is an area well within FWS's scientific and technical expertise. While Plaintiffs, or even the Court, might have been more prone to exercise caution in light of the limited experimental data, FWS made a reasonable decision to proceed in light of its review of existing Lake Champlain data and the considerable past experience in the Great Lakes.

Because the FSEIS's consideration of the toxicity and narcosis effects is sufficient, FWS also did not violate Council on Environmental Quality ("CEQ") regulations by failing to obtain the missing toxicity and narcosis data for each listed mussel species prior to completing the FSEIS. Under 40 C.F.R. §

¹⁵ The only argument Plaintiffs provide on this issue is the difference in water volumes relative to TFM applications between Lake Champlain and the Great Lakes, noting that Lake Champlain will receive 80,000 times more lampricide treatments relative to its water volume. Plaintiffs provide no expert testimony to elucidate the significance of this distinction. Moreover, FWS's reliance of Great Lakes data focuses in large part on treatments occurring in tributaries.

1502.22(a), in situations where there is "incomplete or unavailable information" and such information is "essential to a reasoned choice among alternatives," an agency is required to obtain such information if it can be obtained and the cost of doing so is not exorbitant. Plaintiffs argue that since acquiring the missing NOECs, latent toxicity, and narcosis data is feasible and not exorbitantly expensive, FWS was required to obtain it before completing the FSEIS. However, for the reasons discussed above, obtaining this additional data was not "essential" to choosing among the alternatives. Based on existing studies and data collected from the Experimental Program and the Great Lakes, FWS could find that impacts on mussels would be minimal under the Program. Cf. Kettle Range Conservation Grp. v. U.S. Forest Serv., 148 F. Supp. 2d 1107, 1126-27 (E.D. Wash. 2001) (§ 1502.22 violated where Forest Service could not evaluate with "any certainty" soil impacts because it obtained no actual soil data, but relied solely on estimates of site conditions without ever visiting the sites at issue).

3. Direct and Indirect Impacts on Mudpuppies

As with the mussels, the FSEIS provides considerable discussion of the impacts of TFM on mudpuppies. R. at 184-86. The FSEIS recognizes that mudpuppy mortalities will occur, but concludes that such mortalities will be limited. R. at 224,

225. The FSEIS discusses the established NOEC for adult mudpuppies, 1.5 times MLC, and notes that application of TFM below this concentration should not affect mudpuppies. R. at 184. At the same time, the FSEIS recognizes that unexpectedly high mudpuppy mortalities occurred in the Experimental Program in some tributaries. Id. The FSEIS also notes that despite the common occurrence of high mudpuppy mortalities after the Great Lakes lampricide treatments, mudpuppy populations have persisted, as demonstrated by the mortalities observed during successive treatments.¹⁶ R. at 185. Moreover, the FSEIS notes that throughout the history of the Great Lakes program, there is no evidence that a mudpuppy population has been lost. Id.

Plaintiffs argue that this discussion is flawed because it fails to acknowledge that mudpuppies are species of special concern in Vermont. According to VANR, unlike the endangered or threatened designation, a species of special concern is not a designation established by law, but is an informational category only. VANR's Mem. of Law in Opp'n to Pls.' Mot. for Summary J. (Paper 25) at 3. Still, the status suggests that the species is considered rare by the Vermont Department of Fish and Wildlife.

¹⁶ To the extent that Plaintiffs also challenge consideration of unidentified sub-lethal and latent toxicity effects caused by repeated applications of TFM under the Program, as discussed above with regard to mussels, FWS could properly draw on this Great Lakes experience to conclude that limited effects on mudpuppies would result.

R. at 473, 554. While not addressing the species of specific concern designation directly, the FSEIS does not assume that the status of mudpuppy populations is well understood in Vermont. The FSEIS acknowledges that efforts to sample mudpuppy populations in the Lake Champlain basin have been unsuccessful and proposes continuing efforts to assess current mudpuppy populations. R. at 157, 224. Thus, FWS has considered the uncertainty in population data for the mudpuppy in deciding to move forward with TFM treatments. While a more thorough analysis might also have acknowledged the apparent rarity of mudpuppies in the basin, the Court cannot find that this analysis was unreasonable.

Similarly, the decision to move forward with treatments despite the unavailability of toxicity data for juvenile mudpuppies was not unreasonable.¹⁷ The FSEIS states that no toxicity testing data is available for juvenile mudpuppies, but that there has been "speculation," based on mortalities observed after Lake Champlain treatments, that juvenile mudpuppies are more susceptible to TFM. R. at 185. Noting that a loss of juveniles could greatly impact the population as a whole, Plaintiffs point to this admission as a clear sign that the FSEIS does not provide sufficient consideration of the impacts

¹⁷ For the same reason, the decision does not violate 40 C.F.R. § 1502.22. See discussion supra regarding § 1502.22 and the mussel toxicity data.

of the Program on mudpuppy populations. This is not the case. In fact, FWS discounts the evidence of greater juvenile sensitivity, noting that it is not possible to determine whether the numbers of juvenile mortalities were out of proportion with the actual population age distribution. R. at 185. The FSEIS also points to conflicting published studies on the issue. Id.

4. Cumulative Impacts

"Cumulative impacts" are those "impact[s] on the environment which[] result from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency . . . or person undertakes such other actions." 40 C.F.R. § 1508.7. Plaintiffs identify a number of cumulative impacts on mussels and/or mudpuppies that they feel the FSEIS inadequately addresses.

First, Plaintiffs argue that the FSEIS fails to consider non-Program stresses on these organisms. Contrary to Plaintiffs' assertions, the FSEIS explicitly discusses these kinds of cumulative impacts. It discusses the impacts of existing water pollution in Appendix F, which describes the effect of water chemistry and certain pesticides and pollutants on the toxicity of TFM. R. at 422. In Appendix F the FSEIS also describes the use of on-site toxicity tests by which the appropriate concentration of TFM is determined in-stream to

mitigate impacts on non-target organisms and achieve the intended effect on the ammocoete population. Id. The FSEIS also considers the potential cumulative impact of zebra mussels on mussel species occurring in delta or estuarine habitats. R. at 239.

Plaintiffs also argue that the FSEIS fails to consider the cumulative impacts of the Program itself. Plaintiffs' concerns about the cumulative impact that TFM may have on fish species that serve as hosts for mussel larvae is unwarranted. The impact of the Program on fish-mussel relationships is discussed only very tangentially in the FSEIS. R. at 301. However, the FSEIS also notes that impacts on most fish species were minimal during the Experimental Program. R. at 161-62. For example, post-TFM application studies conducted in Lewis Creek showed no measurable impacts on resident fish communities. R. at 162. Accordingly, it is difficult to see how the failure to discuss the fish-mussel symbiosis led to an inadequate consideration of the impacts on mussels.

Plaintiffs complain more broadly that the FSEIS fails to adequately address the cumulative impacts on individual mussels and mudpuppies subjected to repeated applications of TFM. At issue are a wide range of specific impacts which were discussed above as indirect impacts, including the long-term reproductive, survival, and population effects of repeated applications

causing lethal and sub-lethal impacts. While the cumulative impacts section of the FSEIS does not set these issues out for separate consideration, as discussed above, they are adequately addressed by FWS's reliance on the evidence of limited acute toxicity impacts, particularly in the case of mussels, as well as by reliance on past experience from the Experimental Program and the Great Lakes program.

B. Dioxin

Plaintiffs argue that the FSEIS fails to give a "hard look" at the issue of dioxin contamination in TFM and accuse FWS of attempting to "sweep the issue under the rug." See *Silva v. Lynn*, 482 F.2d 1282, 1285 (1st Cir. 1973). While the negative ecological and public health impacts associated with dioxin make understandable the fervor with which Plaintiffs pursue this claim, there is no evidence that FWS has violated NEPA in dealing with this issue.¹⁸

The record summarizes the TFM dioxin issue. During the mid-1990s researchers noticed that TFM induced certain enzyme activity that is often associated with exposure to certain

¹⁸ Plaintiffs' statement of undisputed material facts also suggested that the FSEIS failed to consider fully the toxicity of TFM's breakdown products on any of the organisms inhabiting the Lake Champlain tributaries proposed for treatment. Statement of Undisputed Material Facts (Paper 15) at ¶ 35. Plaintiffs present no further argument on this issue and have not even suggested that these compounds actually do pose toxicity concerns. Accordingly, the Court will not address this argument and considers it waived.

dioxins. R. at 4030, 4100. Subsequent laboratory studies demonstrated that a type of dioxin, tri-substituted, dibenzo-*p*-dioxin, present as an impurity in TFM, was causing the enzyme activity. R. at 4045-46, 4067. As the record makes clear, this form of dioxin is to be contrasted with the tetra-substituted form of dioxin. Research suggests that tri-substituted dioxins, in contrast to tetra-substituted dioxins, do not bioaccumulate in organisms because they are rapidly metabolized and excreted. R. at 4045, 4055, 4079, 4082, 4088. As a result, a panel of experts convened by the Great Lakes Fishery Commission to investigate the issue found that tri-substituted dioxins do not "pose a significant ecological or human health risk." R. at 4088. Moreover, extensive testing of TFM formulations, at the recommendation of the same expert panel, found no detectible levels of tetra-substituted dioxins. R. at 4009, 4018. Such testing was most recently undertaken of the current TFM formulation in 2001. R. at 3898-3901.

The DSEIS does not address the issue of dioxin contamination in TFM. However, the FSEIS concludes, based on the studies discussed above, that "[t]he environmental risk from tri-substituted dibenzo-*p*-dioxin impurities identified in TFM formulations is considered to be minimal since the noted [enzymatic] induction effect is temporary due to rapid metabolism and excretion of the compounds, and also due to the

brief and infrequent nature of TFM applications." R. at 429. Plaintiffs argue that the record, in particular communications between FWS staff, as well as the substance of EPA's belated comments on the dioxin discussion and the fact that FWS did not consider these comments before publishing its ROD, demonstrate that FWS has not objectively reviewed the dioxin threat and may have attempted avoid addressing it.

There is no evidence, however, that FWS has attempted to sweep the dioxin issue under the rug. The correspondence in the record indicates that FWS staff made a thorough and good faith, though last-minute, effort to address the dioxin issue shortly before publication of the FSEIS. R. at 4001, 4005. At most the record demonstrates FWS's concern that the dioxin issue would create a public perception problem given the likelihood of public over-reaction to the low ecological and public health risks. R. at 3986-87, 3990. For this very reason it was perhaps short-sighted for FWS not to wait to receive EPA's comments on the FSEIS prior to issuing its ROD, especially given that EPA has expertise and regulatory authority over pesticides such as TFM. See 7 U.S.C.A. § 1369 (West 1999) (giving EPA authority over registration of pesticides); R. at 4184-4300 (EPA's Re-Registration Eligibility Decision for TFM). However, EPA's comments were sent after the minimum wait period, 40 C.F.R. § 1506.10(a)(2), and FWS was not acting contrary to CEQ

regulations by failing to consider EPA's comments.¹⁹

More importantly, the discussion included in the FSEIS clearly indicates that FWS gave a "hard look" at the dioxin issue. As discussed above, the record demonstrates that FWS compiled the relevant information and made a reasonable analysis of the information. Plaintiffs argue, however, that the FSEIS failed to adequately discuss the cumulative impacts of repeated applications of TFM containing tri-substituted dioxins over the length of the Program.²⁰ They note that the Vermont Department of Health, in the ANC permit, concluded that there is insufficient information to determine that multiple TFM applications will create a negligible human health impact. ANC permit at 13. A careful reading of the FSEIS discussion shows that FWS has in fact addressed the substance of this issue as it

¹⁹ The notice of publication for the FSEIS issued by EPA indicated that the wait period would end on October 9, 2001, 66 Fed. Reg. 46,792 (Sept. 7, 2001), even though, based on CEQ regulations, the minimum 30 day wait period ended on October 7, 2001, thirty days from publication of the FSEIS in the Federal Register, 40 C.F.R. § 1506.10(a)(2). This date confusion may explain why EPA's comments were sent on October 9th. However, as discussed below, the impact of the confusion is negligible as the issues raised in EPA's comments were adequately addressed in the FSEIS.

²⁰ Plaintiffs also argue that the dioxin discussion is inadequate because it fails to address specifically the effects of dioxins on mussels, mudpuppies, birds, mammals, and human. After finding little environmental risk from the application of tri-substituted dioxins based on toxicity and bioaccumulative properties, as well as the infrequent application of TFM, there was no reason for FWS to state specifically that no such risk pertained to any of these organisms.

concludes that the bioaccumulation and toxicity of tri-substituted dioxin is believed to be minimal due to rapid metabolism and excretion of the dioxins. Moreover, one of the studies upon which the discussion relies indicates that the dioxins are broken down photochemically in the environment. R. at 4046. That experts (in this case two different agencies with differing legislative mandates) may disagree over the risks associated with the dioxin impurities does not translate to a NEPA violation. Marsh v. Oregon Natural Resources Council, 490 U.S. 360, 378 (1989) ("When specialists express conflicting views, an agency must have discretion to rely on the reasonable opinions of its own qualified experts even if, as an original matter, a court might find contrary views more persuasive.").

Nor does FWS ignore any pertinent information in its discussion. In admitting EPA's comments as extra-record evidence, the Court also sought to ensure that EPA did not raise any important factors left out of FWS's consideration. After further review, the Court finds that it did not. In fact, EPA's comments focused on the need for expansion of the dioxin discussion to provide more context for the public and other regulatory agencies, not on substantive gaps in FWS's reasoning. EPA Letter at 4 (noting that the discussion "falls short of what is needed to inform regulatory agencies and the public about the risks from this contamination."). In particular EPA suggests

expanding the discussion to include information on the total dioxin loading to Lake Champlain from TFM applications, the relationship between tri-substituted dioxins and other dioxins, the human carcinogenic potential of the tri-substituted dioxins, further explanation of the ecological implications of the enzyme induction observed in exposed organisms, and testing for recent formulations of TFM.²¹ It would certainly be possible to expand the discussion in each of these ways, and doing so would no doubt have aided public digestion of the technical issues.

However, the discussion was not so insufficient as to "frustrate

²¹ FWS points out in its post-hearing submission (Paper 37) that much of this information is already contained in the record in the studies and correspondence on which FWS relied in evaluating the dioxin issue. For example, the record contains information on the relationship between and toxicity of different forms of dioxin in humans, other mammals, and fish. R. at 4044, 4069-99. Also, the discussion of dioxin contamination in the FSEIS indicates that the ecological implications are minimal because the tri-substituted dioxins are rapidly excreted and degraded and the enzyme induction is short-lived after TFM exposure is ended. R. at 4046, 4055. Thus, it cannot be argued that FWS failed to consider these issues.

EPA also suggests that certain studies be undertaken to monitor and mitigate any dioxin loading. It is in FWS's discretion to determine whether such mitigation measures should be developed. Methow Valley, 490 U.S. at 353 & n.16. Given that it reasonably concluded that there would be minimal dioxin-related impacts, discussion of such mitigation measures was not necessary. Moreover, EPA's concern that more recent batches of TFM be tested for tetra-substituted dioxins appears to be unwarranted. The Program will employ a TFM batch in Lewis Creek that has been tested. R. at 4043; 2002 Aquatic Nuisance Control Permit Application, Pls.' Opp'n to Defs.' Mot. for Summary J. (Paper 33), Ex. 2 at 18. The remainder of the treatments will stem from batches that have been or are in the process of being tested. Decl. Brian Chipman ¶ 3, attached to Def. FWS's Post-Hearing Submission (Paper 37).

NEPA's goal of ensuring that relevant information is available to the wider audience participating in agency decision-making." Laguna Greenbelt, Inc. v. U.S. Dep't of Transp., 42 F.3d 517, 527 (9th Cir. 1994) (citing Methow Valley, 490 U.S. at 349).

In sum, as the Court concluded with regard to Plaintiffs' complaints about the FSEIS's handling of impacts on non-target species, there is undoubtedly always room for additional consideration of most potential environmental impacts. NEPA does not require the kind of exhaustive review that Plaintiffs would prefer. On the issue of dioxin contaminants in TFM, FWS has undertaken a fully informed analysis of the potential environmental consequences and has disclosed this information to the public. Under NEPA it was not required to do anything more.

C. Mitigation

Plaintiffs also challenge the sufficiency of the mitigation measures contained in the FSEIS. Plaintiffs' challenge focuses on those measures designed to mitigate impacts on non-target species, not those designed to mitigate human exposure to TFM. At the heart of Plaintiffs' argument is the same alleged inadequate consideration of the toxicity and sub-lethal effects of TFM that forms the basis for their broader NEPA challenge. As with that challenge, Plaintiffs' arguments must fail because FWS has taken the requisite hard look at the possible mitigating measures.

An EIS must include consideration of the steps that can be taken to mitigate the adverse environmental impacts it identifies. See 40 C.F.R. §§ 1502.16(h), 14(f). "Implicit in NEPA's demand that an agency prepare a detailed statement on any adverse environmental effects which cannot be avoided should the proposal be implemented, is an understanding that the EIS will discuss the extent to which adverse effects can be avoided." Methow Valley, 490 U.S. at 351-52 (quotations and citations omitted). Such discussion is necessary to permit the agency and public to "properly evaluate the severity of the adverse effects." Id. at 352.

However, the mitigation requirement under NEPA is no more rigorous than that of the initial discussion of environmental impacts. NEPA requires only "a reasonably complete discussion of possible mitigation measures," such that fair evaluation of the environmental consequences of the alternatives and chosen action are possible. Id. at 352. There is no substantive requirement that a complete mitigation plan be actually formulated, finalized, adopted, or legally enforceable. Id., 490 U.S. at 352; Nat'l Parks & Conservation Ass'n v. U.S. Dep't of Transp., 222 F.3d 677, 681 n.4 (9th Cir. 2000). Moreover, there is no substantive requirement that any mitigation measure actually be undertaken either by the agency or a third party. Methow Valley, 490 U.S. at 353 & n.16; Citizens Against

Burlington, Inc. v. Busey, 938 F.2d 190, 206 (D.C. Cir. 1991).

Plaintiffs first argue that the mitigation measures discussed for listed mussel species are impermissibly general and vague. See Neighbors of Cuddy Mountain v. U.S. Forest Serv., 137 F.3d 1372, 1381 (9th Cir. 1998) (NEPA violated where the mitigation measures were "so general that it would be impossible to determine where, how, and when they would be used and how effective they would be."). Plaintiffs point to the FSEIS section on mitigation measures for threatened and endangered species, consisting of a single paragraph. This section provides that mitigation measures may include avoiding TFM applications in waters inhabited by listed species, applying TFM concentrations below the listed species' NOECs, and any additional measures proposed by the state permitting agencies.²² R. at 217.

Perhaps if this were the only relevant discussion of mitigation measures for listed species, Plaintiffs' complaint might carry some weight. However, as this section indicates, additional discussion elsewhere in the FSEIS expands upon the mitigation measures proposed. See, e.g., R. at 154-155

²² To the extent that Plaintiffs fault the reliance on future state permitting requirements for mitigation, such reliance does not invalidate otherwise reasonably complete discussion of mitigation measures. See Okanogan Highlands Alliance v. Williams, 236 F.3d 468, 477 (9th Cir. 2000). See also Methow Valley, 490 U.S. at 352 n.16.

(discussing the NOEC measure); R. at 422 (discussing the use of on-site toxicity testing to ensure that NOECs are not exceeded due to cumulative toxicity effects); R. at 219 (proposing future study of TFM toxicity to larval mussels). In addition, the site-specific screening analysis for each tributary provides specific information on where, how, and when the mitigation measures will be employed. See R. at 242-350. Cf. Cuddy Mountain, 137 F.3d at 1381 (where the EIS indicated that "the Forest Service did not even consider mitigating measures for the creeks actually affected by the" action).

Plaintiffs also target FWS's substantial reliance on the use of TFM applications below listed species' NOECs because FWS did not determine NOECs for each of the listed species prior to completing the FSEIS. See Idaho Sporting Congress v. Thomas, 137 F.3d 1146, 1151 (9th Cir. 1998) ("Without analytical data to support the proposed mitigation measures, we are not persuaded that they amount to anything more than a 'mere listing' of good management practices."). However, as discussed above, FWS has adequately analyzed the basis for relying on NOECs to avoid acute toxicity effects. This analysis, combined with its experience in the Experimental Program demonstrating that TFM applications at concentrations of 1.3 times MLC caused few mussel mortalities, provides sufficient information on the effectiveness and reliability of the measures to make the

discussion reasonably complete.

Moreover, while FWS was not obligated by NEPA to collect all the NOEC data ahead of time, Methow Valley, 490 U.S. at 352, the FSEIS states that FWS would collect such data prior to applying TFM. See, e.g., R. at 306. In this case, FWS has met this promise, to the extent possible,²³ making it difficult to see how FWS's NOEC mitigation plan amounts to anything like the perfunctory discussions that have been disapproved by other courts.

With regard to mudpuppies, the FSEIS also proposes mitigation through the use of applications below the mudpuppy NOEC. R. at 224. The FSEIS recognizes, however, that limited mudpuppy mortality will likely still result and proposes continued efforts to collect biological data on dead mudpuppies. R. at 184, 224. In order to mitigate the uncertainty surrounding mudpuppy population levels, the FSEIS proposes the development of effective methods for sampling existing mudpuppy populations. R. at 224. Finally, as discussed above, while FWS

²³ According to the 2002 aquatic nuisance control permit issued for treatment of Lewis Creek, FWS has determined the NOECs for two of the three untested mussels. 2002 Aquatic Nuisance Control Permit at 80-81 (Paper 33, Ex. 2). These NOECs are similar to those of the other tested mussels found in Lewis Creek. FWS has not determined the NOEC for the fragile papershell, however, because too few individuals of this species were available for testing. Id. Thus the TFM will be applied at 1.0 times MLC, a concentration which did not cause mortality of or narcosis in caged fragile papershells during the Experimental Program in the Poultney River. Id.

concluded that there is conflicting evidence of greater sensitivity of juvenile mudpuppies to TFM., R. at 185, it also states that it may conduct additional tests on juvenile toxicity, R. at 224. In sum, FWS's discussion of mitigation is reasonably complete. NEPA does not require that a mitigation plan be fully developed, prior to initiation of TFM treatments. See Methow Valley, 490 U.S. at 352; Citizens Against Burlington, 938 F.2d at 206.

D. Statement of Purpose and Need

Plaintiffs next argue that the FSEIS violates NEPA because its statement of the purpose and need is impermissibly narrow. CEQ regulations require that each EIS "shall briefly specify the underlying purpose and need to which the agency is responding in proposing the alternatives included in the proposed action." 40 C.F.R. § 1502.13. Courts must uphold an agency's stated objective where that objective is reasonable. Citizens Against Burlington, 938 F.2d at 196. It is unreasonable for an agency "to narrow the objective of its action artificially and thereby circumvent the requirement that relevant alternatives be considered." City of New York v. Dep't of Transp., 715 F.2d 732, 743 (2d Cir. 1983). In giving a "hard look" to the factors relevant to the definition of purpose, an agency should consider the views expressed by Congress in its directives to the agency. Citizens Against Burlington, 938 F.2d at 196. Of particular

relevance are those views expressed by Congress in the legislative grant of power underlying the proposed action. Id.; City of New York, 938 F.2d at 744.

The purpose of the Program enunciated in the FSEIS is "to achieve and maintain the greatest practical reductions in Lake Champlain sea lamprey populations." R. at 34. Plaintiffs complain that the statement of purpose is unreasonably narrow because it fails to include the objective of minimizing negative impacts on non-target species. They point to the Fish and Wildlife Conservation Act (FWCA), which directs FWS to encourage states to conserve indigenous species and to provide technical and financial assistance to states to protect non-game species.²⁴ 16 U.S.C.A. § 2901(b)(1) (West 2000). Plaintiffs also argue that the statement of purpose is contrary to the mandate included in one of the funding sources for the Program, the Lake Champlain Special Designation Act of 1990, Pub. L. No. 101-596 (available as amended in the Historical and Statutory Notes to 33 U.S.C.A. § 1270 (West 2000)). This Act directs FWS to restore the fisheries of Lake Champlain in part by surveying the Lake and its tributaries for federal-listed and state-listed endangered and threatened species. Id. § 304(c)(1)(A).

FWS argues that requiring it to include every one of the

²⁴ Plaintiffs do not provide, and the Court has not located, any documentation in the Record indicating that the Program is being undertaken directly pursuant to the FWCA.

statutory policies Congress has directed it to fulfill in a purpose and need section would be impractical. While FWS's point may be valid with regard to completely unrelated policies, consideration of negative impacts on indigenous species is relevant to the Program. The FSEIS states that the Program will provide positive environmental impacts by reducing the numbers of a non-native species for the benefit of indigenous species. R. at 226. On the other hand, the particular statutes by which FWS will fund the Program are not themselves solely focused on the protection of indigenous species. In particular, in addition to the directive to survey rare species, the Lake Champlain Special Designation Act directs FWS to restore the fisheries by controlling sea lamprey in Lake Champlain. See Pub. L. No. 101-596, § 304(C)(2)(A). See also 16 U.S.C.A. § 757b (West 2000) (authorizing FWS, for the purpose of improving anadromous fisheries, to install and maintain devices and barriers to reduce sea lamprey in the Great Lakes and Lake Champlain); Elliott v. U.S. Fish & Wildlife Serv., 769 F. Supp. at 589 ("Congress gave unmistakable and broad authority to the Service to control the population of lampreys in the lake.").

Moreover, FWS considered impacts on non-target species when defining the range of the alternatives to be considered, R. at 50-51, and throughout the FSEIS. Thus, regardless of how one interprets the purpose and need statement, it cannot be said

that elimination of sea lamprey at all costs was the sole defined project goal. See City of Carmel-By-The-Sea v. U.S. Dep't of Transp., 123 F.3d 1142, 1157 (9th Cir. 1997) (where EIS expressly weighed environmental and financial factors in selecting potential alternatives, statement of purpose focused on a certain level of traffic flow was not unreasonable).

In sum, in light of the clear Congressional directive to FWS to control sea lamprey in Lake Champlain and the consideration of non-target impacts in the selection of potential alternatives, the purpose and need statement included in the FSEIS is not so narrow as to be unreasonable.

E. Site-Specific Analysis

Finally, Plaintiffs argue that even if the FSEIS is adequate under NEPA for purposes of evaluating the Program as a whole, it is insufficient to evaluate the environmental impacts on the individual tributaries to be treated with TFM.²⁵ At the heart of Plaintiffs' argument is their belief that because

²⁵ FWS argues that Plaintiffs are prohibited from making their site-specific analysis argument because they failed to raise the issue in their comments on the DSEIS. As discussed above in the motion to strike section, regarding Plaintiffs' comments on dioxin, it is not clear that an issue exhaustion requirement is appropriate in the context of NEPA review. Moreover, there is no dispute that the site-specific analysis issue was raised in comments by the Conservation Law Foundation. R. at 499-501. Thus, FWS was given the opportunity to consider the issue during the comment period, and the requirement of issue exhaustion is not applicable. See Am. Forest, 137 F.3d at 295-96.

significant new information will have to be produced prior to treatment of Lewis Creek and other tributaries, site-specific analyses are necessary. Plaintiffs argue that without such analyses, other agencies and the public cannot comment on the new information.

Major federal actions under NEPA include both specific projects, 40 C.F.R. § 1508.18(b)(4), and the “[a]doption of programs, such as a group of concerted actions to implement a specific policy or plan,” *id.* § 1508.18(b)(3). A single EIS may cover both programmatic impacts and impacts of particular projects contained within the broader program. See Scientists’ Inst. for Pub. Information, Inc. v. Atomic Energy Comm’n, 481 F.2d 1079, 1092 (D.C. Cir. 1973). See also Ass’n of Pub. Agency Customers, Inc. v. Bonneville Power Admin., 126 F.3d 1158, 1183-84 (9th Cir. 1997). In addition, CEQ regulations encourage agencies to consider connected or interdependent actions, such as the tributary treatments, within the same EIS. See 40 C.F.R. § 1508.25(1)(iii).

In this case, the FSEIS is programmatic; it provides a comprehensive analysis of the environmental effects of controlling sea lamprey in Lake Champlain’s tributaries. However, the FSEIS provides not only a detailed analysis of the environmental effects of the Program as a whole, it also provides individual analysis for each tributary through the

screening process. In particular, the site-specific analysis considers the history of sea lamprey control in the stream, the suitability of the stream habitat for lamprey, the presence of lamprey in the stream, and the habitat and sensitive species located in each tributary. After evaluating these and other factors, the FSEIS recommends a control strategy for each stream including the timing and location of TFM treatments and the need to keep concentrations below any applicable NOECs. While the analysis for each tributary is not voluminous, it need not be. The bulk of the FSEIS focuses on the environmental impacts that will be associated with any TFM treatment. NEPA does not require that such site-specific analysis duplicate analysis included in a programmatic EIS. Sierra Club v. Robertson, 784 F. Supp. 593, 603 (W.D. Ark. 1991).

Once an agency has completed a programmatic EIS, further individual, project-specific EAs or EISs are generally not necessary. Salmon River Concerned Citizens v. Robertson, 32 F.3d 1346, 1356 (9th Cir. 1994); accord Minnesota Pub. Interest Research Grp. v. Butz, 498 F.2d 1314, 1423 n.29 (8th Cir. 1974). Subsequent individual actions falling under the auspices of the program require additional assessment only where localized environmental effects have not been fully evaluated in the programmatic statement. Salmon River, 32 F.3d at 1356; Scientists' Institute, 481 F.2d at 1093. This may result when

changes are made to the proposed action, or significant new circumstances or information relevant to environmental concerns arise. 40 C.F.R. § 1502.9(c)(1) (requiring a subsequent EIS in such situations).

Plaintiffs argue that any specific tributary treatments will require further assessment because the FSEIS and ROD do not make a specific treatment decision, but only recommend future action. However, as discussed above, the screening analysis and the selection of specific sea lamprey control strategies are detailed in the site-specific analysis section of the FSEIS. It is simply inaccurate to state that after reviewing the FSEIS and ROD, the public is left knowing nothing more than that FWS plans to move forward at some time with some type of sea lamprey control technique. In fact, the public comments on this tributary-specific portion of the DSEIS include discussion of the specific plans for individual tributaries. See, e.g., R. at 474-76 (NAS comments on treatment plans at various tributaries); R. at 482 (comments from The Nature Conservancy proposing amendment of the Poultney River treatment strategy).

Plaintiffs also argue that a site-specific EA or EIS is required, at least for Lewis Creek, because the treatment of Lewis Creek depends on new information and previously

unconsidered issues.²⁶ Relying on the 2002 aquatic nuisance control permit issued by Vermont for treatment of Lewis Creek, Plaintiffs identify examples of allegedly new and significant information. None of these examples constitutes the kind of material intervening change in circumstances or departure from the Program articulated in the FSEIS that would require FWS to undertake additional site-specific analysis.

For example, the newly proposed application location is downstream from the other treatment sites and thus impacts a smaller area of Lewis Creek than the upstream treatments. Similarly, the newly developed NOECs for the untested listed mussels and the plan for determining the population levels of mudpuppies in Lewis Creek are consistent with the mitigation plan set out in the FSEIS. Moreover, the new NOECs are similar to those known at the time the FSEIS was completed. That the determination of these NOECs has permitted, and state law has

²⁶ Plaintiffs also appear to argue more broadly that the FSEIS as a whole is insufficient because "given the long-term and dynamic nature of the Program, new information and previously unconsidered issues will inherently arise in the Program's implementation." Pls.' Reply to Defs.' Opp'n to Pls.' Motion to Summary J. at 27-28 (Paper 33). However, the FSEIS indicates that FWS will undertake additional site-specific review if new control techniques are developed or additional unconsidered environmental impacts are discovered. R. at 351, 546. In addition, even where such changes do not occur, continual public input will be solicited every five years or as federal funding is reconsidered. R. at 70, 74, 449. There is no basis at present to challenge the FSEIS on such unknown future events.

required, specific information on the concentration and quantity of TFM that will be applied, also does not constitute a material change in circumstances or policy. Adjustment of the concentration and quantity of TFM used is an essential part of site-specific tailoring of the TFM treatments and is clearly contemplated in the FSEIS in order to calibrate the dosage to the biology and conditions at each tributary.

VI. Conclusion

WHEREFORE, FWS and New York's motions to strike (Papers 18 and 22) are **GRANTED** in part and **DENIED** in part; Plaintiffs' motion to supplement standing affidavits (Paper 35) is **GRANTED**; Plaintiffs' motion for summary judgment (Paper 13) is **GRANTED** in part, as to the standing of VPIRG and Knight, and **DENIED** in part, as to the standing of NAS and as to their NEPA and APA claims; Defendants' motions for summary judgment (Papers 24, 26, and 27) are **GRANTED**; and FWS's motion to dismiss (Paper 26) is **GRANTED** in part, as to the standing of NAS, and **DENIED** in part, as to the standing of VPIRG and Knight.

Dated at Burlington, Vermont this 13th day of
September, 2002.

/s/ William K. Sessions III
William K. Sessions III
Chief Judge, U. S. District Court