

The Maine Vernal Pool Special Area Management Plan (VP SAMP)



This presentation will introduce New England Army Corps' newest tool for mitigation impacts to vernal pools in town growth areas using a local, in-lieu fee program that transfers an impact fee from developers to willing private landowners in the town's rural zone for conserving pools *plus* adjacent forest permanently.

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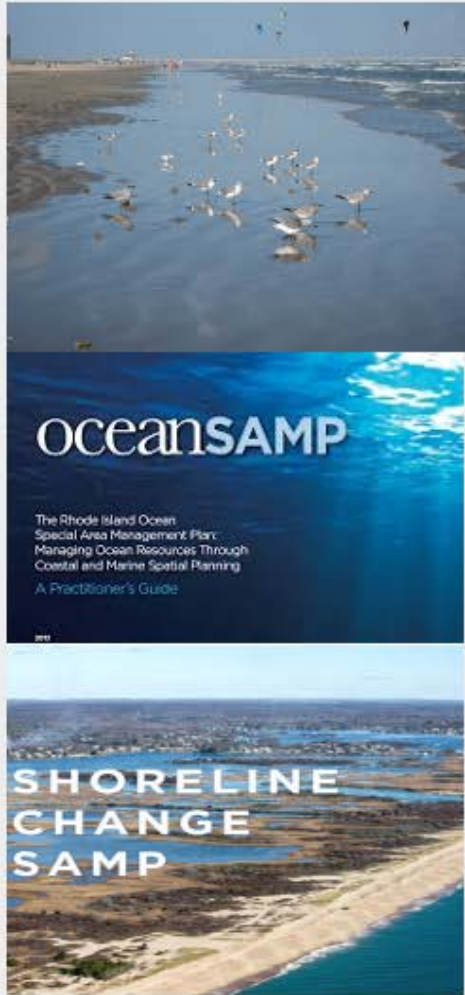
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For more materials and information on vernal pools AND the Maine VP SAMP please visit our "Of pools and people" website.

What is a Special Area Management Plan?



- A comprehensive plan regulating management of special or sensitive natural resources
- *Considers economics and other societal considerations* in addition to the natural value of the resource
- Provides statement on policies, standards and mechanisms for implementation



Texas: Coastal Resilience SAMP

RI: Ocean SAMP

RI: Shoreline Change SAMP

Here are just a few examples of Special Area Management Plans in New England. Many of them are related to development of ocean resources or sensitive coastal areas. Some are completely focused on urban landscapes. Our Maine SAMP provides a rare example of a freshwater wetland SAMP.

THE MAINE VERNAL POOL SPECIAL AREA MANAGEMENT PLAN



vernal pool SAMP

- Maine's SAMP for Vernal Pools
- First SAMP for vernal pools
- Available for adoption by states in Army Corps New England Region

New England states must first coordinate with the Corps to develop a state-federal memorandum of agreement to adopt this tool. In our webpage folder on the SAMP, you can find guidance on this process.



Who Developed the Vernal Pool SAMP

- 3 federal agencies
- 5 state agencies
- Towns of Orono and Topsham
- Economists
- Developers
- Land Trusts
- Ecologists
- Planning consultants
- Interested citizens

This seven-year stakeholder process is described in Levesque et al. 2016 –in our SAMP literature folder if you are interested in learning more.



- 100 Meetings
- 7 YEARS
- 25 Dedicated partners

The process of developing the Maine Vernal Pool Special Area Management Plan showed that it is possible to take pieces from many different places and perspectives and fit them together in a new way. The remainder of this slide presentation illustrates how the Maine Vernal Pool Special Area Management Plan works. For more background on the process of developing the Maine VP SAMP and details on the ecology of vernal pools, see the other slide presentations connected to this case study.

Result: 2016 VP SAMP

A Special Area Management Plan (SAMP) For Vernal Pools in Maine



August 2016

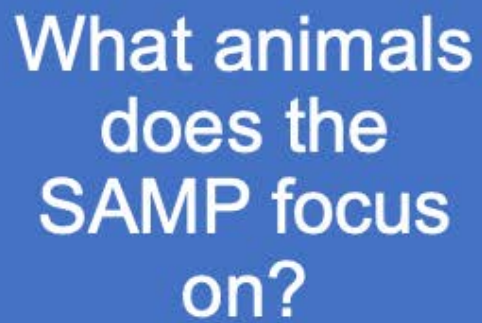
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The official document which was vetted and approved in the Federal Register in 2017 can be found under the SAMP tab on the web page.



What animals
does the
SAMP focus
on?

- Fairy shrimp
- Wood frogs
- Blue spotted salamanders
- Spotted Salamanders

The SAMP was designed to conserve classic vernal pool breeding amphibians and fairy shrimp. By conserving pools PLUS adjacent forest, we also conserve a wide range of vernal pool functions including nutrient export to the forest, water storage, support of mammals, birds, reptiles, and other amphibians that use pools for resting or feeding.



Fairy shrimp overwinter as eggs which have been deposited on the pool bottom. They must dry (desiccate) and freeze before they are viable. As soon as the pool fills in the spring, fairy shrimp, the analog of salt water sea monkeys or brine shrimp, hatch---often before the ice is off the pond. Some animals hatch later in the summer. They can be as long as 1 inch and tend to congregate in sunny patches of the pool where they swim upside down while filter feeding. Their color varies with the color of the zooplankton they eat. They have a short life cycle, as short as 6 weeks. The female dies, deposits eggs, and the cycle is completed for the season. The Maine Department of Inland Fisheries and Wildlife is asking for data on fairy shrimp occurrence. If you have a pool with fairy shrimp, a data form with instructions is available on our website (www.umaine.edu/vernalpools)



For detailed ecological and identification information on wood frogs, spotted salamanders, and blue spotted salamanders, visit the Ecology and Identification tabs on our website.





Why Does Maine Need a VP SAMP?

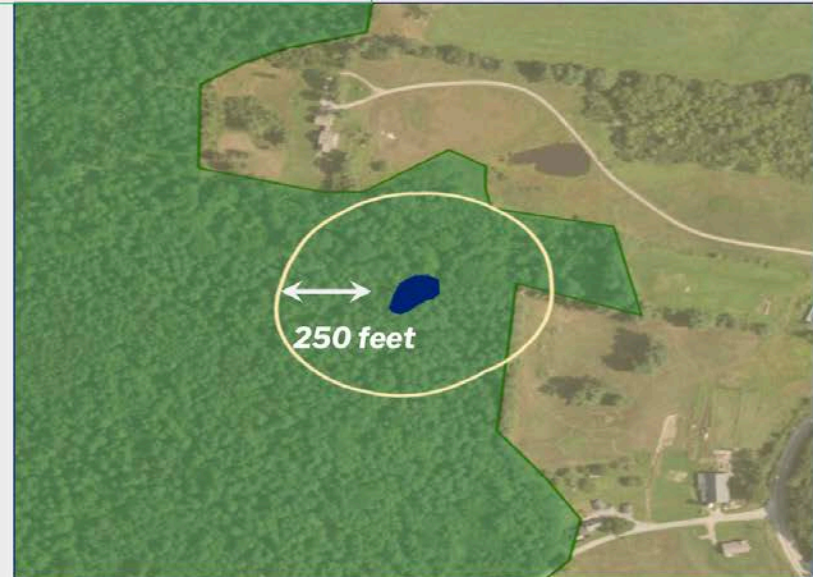
- Current Federal and State regulations focus on limiting impacts to the pool footprint and adjacent borders for water quality rather than the terrestrial critical post-breeding habitat of amphibians.
- Vernal pools surrounded by development cease to function as vernal pools as these amphibians live greater than 95% of their life in the surrounding forests. They become valuable urban wetlands, but no longer serve as specialized vernal pools.
- One-size-fits-all regulations do not address the economic needs of municipalities or private landowners, The SAMP replaces contention with a win-win alternative.

The vernal pool SAMP conserves pools PLUS forest in rural areas and allows development to be encouraged in town growth areas by providing an alternate regulatory option for pools in these designated growth zones. If a developer chooses to use the SAMP, he/she pays a fee that can be used by a local land trust to purchase a vernal pool easement from a willing local landowner. This keeps mitigation fees IN YOUR TOWN and benefits both your developers and your rural landowners.

Current Vernal Pool Regulations

Pre-construction Notification is need for any dredge or fill activity that directly impacts the vernal pool depression!

Federal Jurisdiction



State regulation on Significant Vernal Pools

The SAMP is a VOLUNTARY vernal pool mitigation tool. If you choose not to use the SAMP, the usual regulations, permits, and mitigation options through Army Corps and Maine DEP are still in place.

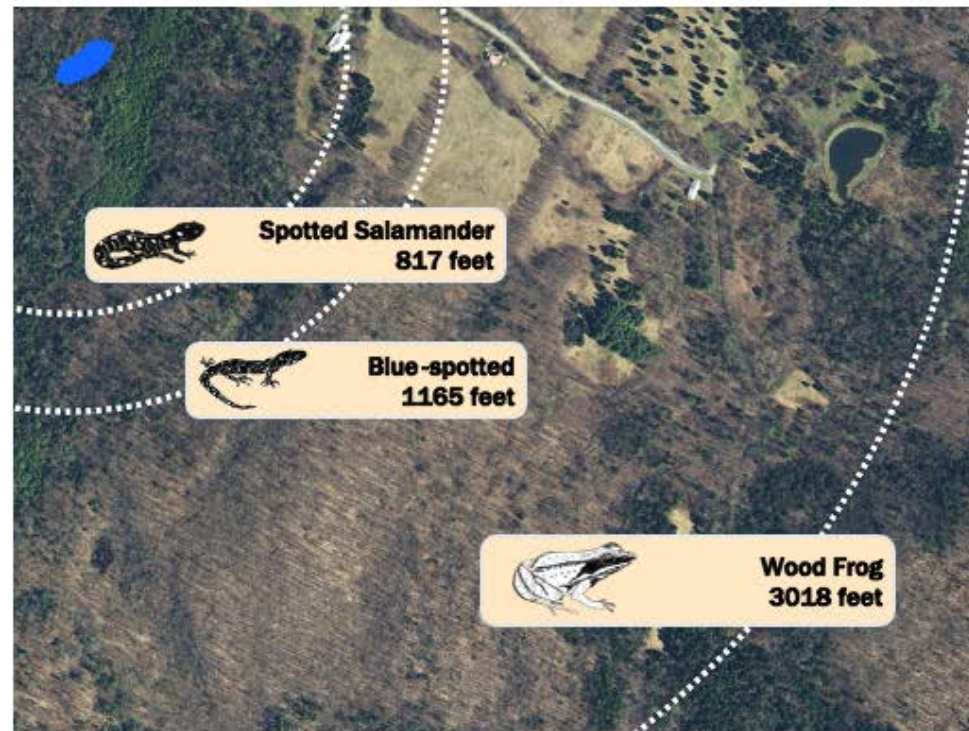
Both the Army Corps of Engineers (under the Clean Water Act) and the State of Maine (under the Natural Resource Protection Act) exert regulatory oversight of impacts to vernal pools. The two sets of regulations cover different areas and are triggered by different metrics. This can create confusion and uncertainty for the regulated community. Currently neither the federal nor state regulations provide *landscape-level* protections that are essential to ensure protection of the habitat value of vernal pools. (See the presentation on vernal pool ecology for more detail.)



While both federal and state agencies regulate impacts to vernal pools, these regulations cover only a subset of vernal pools found across the landscape and focus on the pool footprint and either a 750' (federal) zone of interest or 250' (state) zone of consultation surrounding the pool itself. Current science clearly shows that both of these distances are inadequate for the long-term vitality of pool-breeding amphibians.

In time, pools surrounded by development become cut off from the larger landscape, i.e., other pools and wetlands and summer and hibernation habitats for these animals in the forest. Travel corridors that pool-breeding amphibians rely on to get back and forth between their breeding habitat (the vernal pool) and their post-breeding habitat (unfragmented forested landscapes) are cut off. This leads to what are called 'ghost pools' – pools that perhaps maintain the seasonal hydrology but lack habitat value for pool-breeding amphibians.

How far do the amphibians travel to and from breeding pools?



Adults may travel as far as a mile from breeding pools; juveniles are known to disperse 10s of miles from their birth pools. As you can see, these distances (which represent roughly the median distances (half go less, half more)....exceed the 250 and 750ft zones of permitted development.

These are only recorded distances limited by radio-telemetry tracking and are probably conservative estimates. To see published work on these distances, see our Publications tab.



Parcel lot lines are in green. Two parcels outlined in yellow are spanned by a single vernal pool.

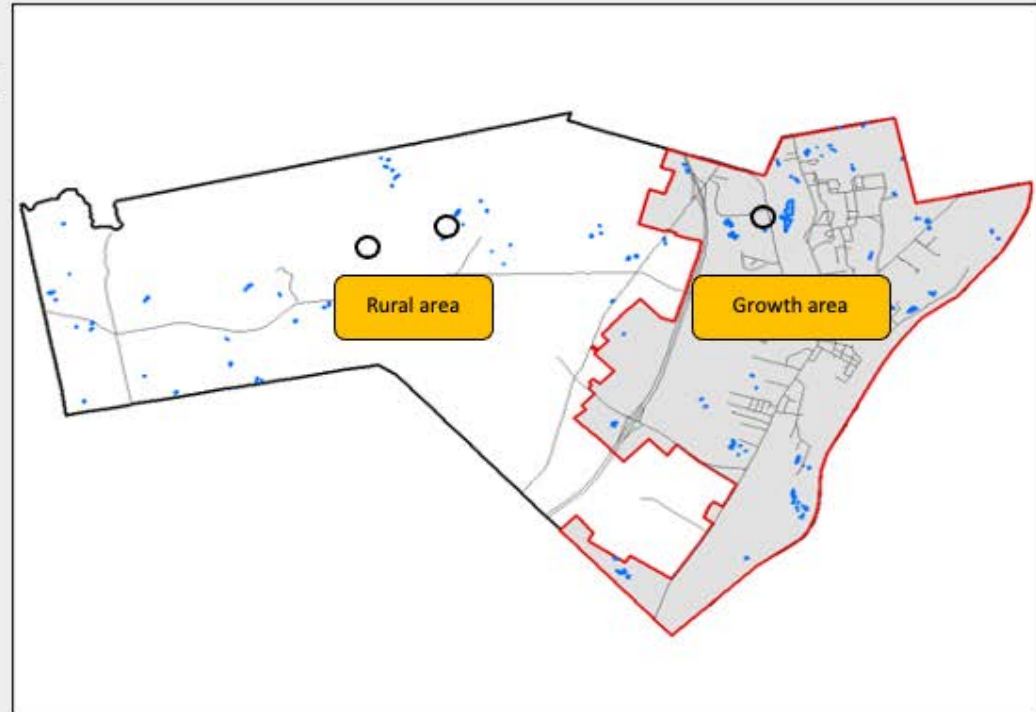
Even Significant Vernal Pools regulated by Maine may be surrounded by development. Pools in multiple ownerships are not considered to be ONE pool. This leads to very fragmented vernal pool systems that can not support amphibian populations in the long-term. Developers and home-owners have been frustrated by regulations that often feel unpredictable to them.

The Maine Natural Resources Protection Act regulates a subset of vernal pools, Significant Vernal Pools, determined to be “Significant Wildlife Habitat” according to a specific set of metrics related to egg mass counts. If a pool is determined to be ‘Significant’, the pool, along with a 250’ envelope is regulated by the State. The ‘applicant’ is required to determine if vernal pools found on the site meet the State’s metrics for significance. This determination must be made when egg masses are present in the spring. This creates a level of unpredictability and uncertainty that can create the perception that certain parcels are “undevelopable” due to the time and cost required for surveying for significance, permitting and mitigation, if required. This slide shows how valuable land in the growth area can be left undeveloped because of the presence of a vernal pool. In this scenario the vernal pool remains intact but it is likely degraded due to proximity to roads and lawns; it lacks suitable adjacent terrestrial habitat, and there is

no opportunity for genetic transfer to or from other vernal pools. The long-term viability of pools such as this is grim.

To summarize: the Maine VP SAMP is...

- An alternative Mitigation Tool for vernal pools
- A local in lieu fee program
- Approved by US Army Corps and ME DEP (Sept 2016)
- Trades impacts to vernal pools in specified *growth areas* for conservation of vernal pool landscapes in *rural areas*



The Maine Vernal Pool SAMP is a voluntary alternate mitigation tool for vernal pools that allows an applicant to pay a fee for vernal pool impacts in pre-identified highly developed areas. All other wetland permits from federal and state agencies are still required. The funds collected for developers using the SAMP are used to conserve vernal pools and surrounding unfragmented forested uplands in undeveloped areas. Please note that all existing regulations at both the Federal and State levels continue to be in place.

Trading one pool surrounded by development for two with forested adjacent habitat..



This slide illustrates the landscape position of vernal pools that may be lost under the Maine VP SAMP and the landscape in which the mitigation for that loss will taking place. Under the Maine Vernal Pool SAMP, the pool on the left could be impacted in its entirety in exchange for payment of a fee. The fee is used to conserve, in perpetuity, 2 pools embedded in unfragmented forested habitat.

Follow the money

Developer pays fee to town for impacting a vernal pool in growth zone

Town transfers money to local land trust or NGO

Land-trust pays rural landowner for conserving 2 vernal pools plus adjacent forest permanently

LEGAL AUTHORITY SUPPORTING IMPLEMENTATION OF THE MAINE VP SAMP

ACOE



MAINE GP RECOGNIZES
USE OF MAINE VP SAMP

MAINE DEP

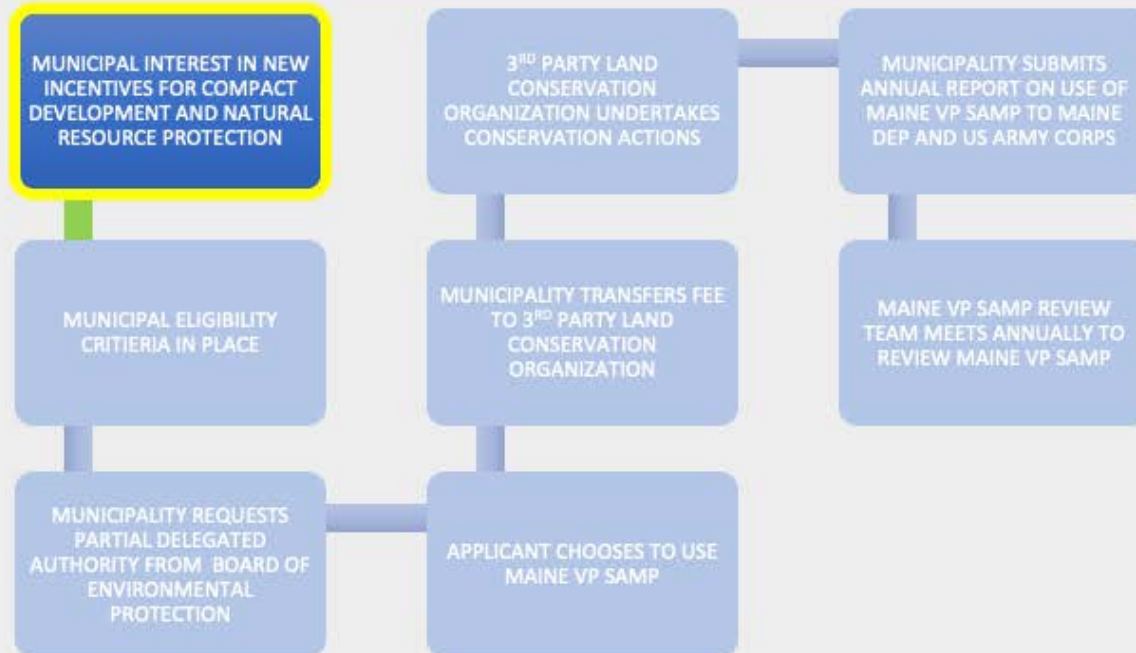


NATURAL RESOURCES
PROTECTION ACT ALLOWS
DELEGATED AUTHORITY

MUNICIPALITY

Implementation of the Maine VP SAMP relies on a hierarchy of regulatory authority that allows permit-granting authority to be passed from the federal level to the state and then to the municipality. The US Army Corps of Engineers regulates certain vernal pools under the Clean Water Act. The State of Maine holds a General Permit with the ACOE that allows the state to issue vernal pool permits in certain situations. The state's authority for vernal pool regulation is found in the Maine Natural Resources Protection Act (NRPA). NRPA has a provision allowing permitting authority to be delegated to the municipal level. The Maine VP SAMP makes use of the regulatory hierarchy to move the permitting authority from the federal and state levels to the local level.

Steps for adopting the SAMP in your town



Use of the Maine Vernal Pool SAMP starts with municipal interest in incentivizing more compact growth in identified growth areas while preserving natural resource values and rural character in the rural area.

MUNICIPAL BENCHMARK CRITERIA

- Adopted Comprehensive Plan

- State finds plan consistent with Maine's Land Use Planning and Regulation Act.
- The plan includes designation of rural and growth areas

There are specific benchmarks that a municipality must achieve in order to use the Maine Vernal Pool SAMP. The first is an adopted comprehensive plan that the State has found consistent with the Maine Land Use Planning and Regulation Act. The comprehensive plan must also include identification of both rural and growth areas. In order to develop a comprehensive plan that is ultimately adopted by a community, the community must go through a public process that includes a broad cross-section of interests and stakeholders. The community must agree upon a long-term vision and a set of implementation strategies to get there.

The comprehensive plan must be found consistent with the Maine Land Use Planning and Regulation Act (aka Growth Management Act). This shows that the community's vision is supportive of larger state goals and that the process of developing the plan has met certain guidelines.

And the Maine Vernal Pool SAMP requires that the comprehensive plan include the designation of rural and growth areas. The state allows for an exemption to the identification of growth areas under certain conditions. However, to use the Maine VP SAMP, a municipality must identify a

growth area.

MUNICIPAL BENCHMARK CRITERIA

- Adopted Comprehensive Plan
- Adopted Ordinance Language

- Creates authority for:
 - Issuing NRPA vernal pool permits and
 - Collecting a fee for impacts to vernal pools and
 - Using a fee mechanism: appraisal-based or minimum fee

The municipality must also adopt ordinance language that provides authority to implement the Maine Vernal Pool SAMP, allows it to collect a fee for vernal pool impacts and spells out which of the two allowable fee mechanisms will be used.

MUNICIPAL BENCHMARK CRITERIA

- Adopted Comprehensive Plan
- Adopted Ordinance Language
- Mapped and adopted Designated Development Area

- Subsection of comprehensive plan identified growth area
- Infill, adjacent to existing development, served by sewer/water, commercial, industrial, mixed use, high density residential zones
- Approved by Maine DEP and US Army Corps

The Maine Vernal Pool SAMP is only available for use in specified subsections of the growth area identified in the comprehensive plan - these areas are called designated development areas and must meet specific criteria spelled out in the Maine VP SAMP.



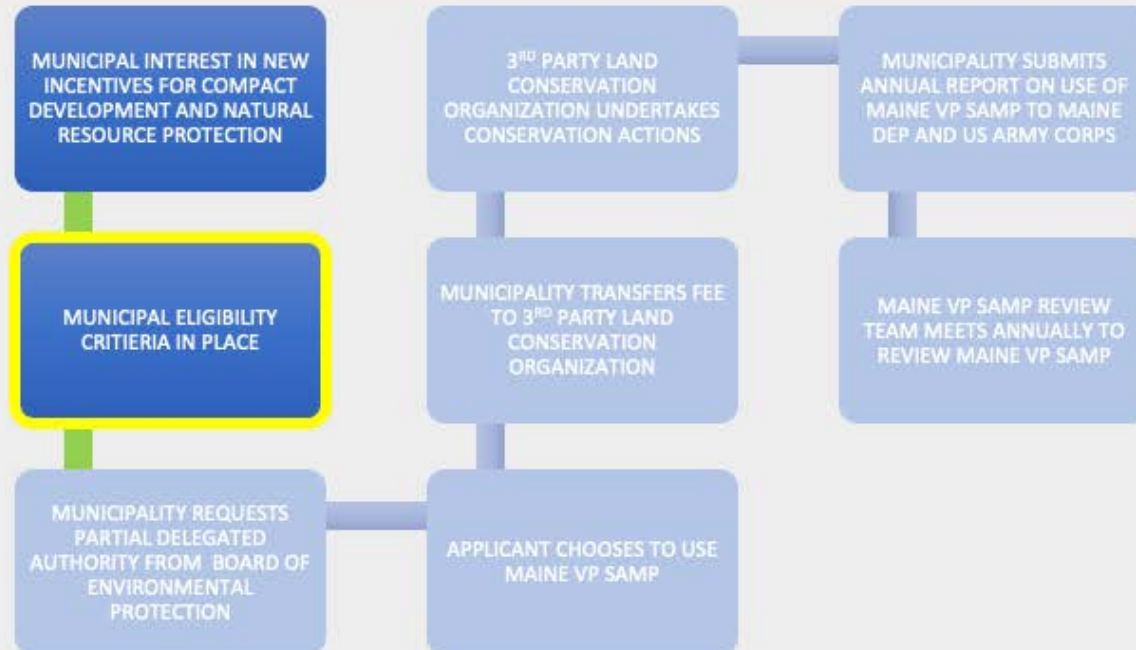
This slide shows the town of Topsham, Maine. The orange line separates the rural and growth areas identified in its comprehensive plan. The green-shaded area is the Designated Development Area adopted into ordinance in which the Maine VP SAMP can be used. (The Androscoggin River flowing from the upper left portion of the slide SE to the bottom of the slide and then easterly before turning northeasterly borders the town. The top of the slide is the northern border of the town.)

MUNICIPAL BENCHMARK CRITERIA

- Adopted Comprehensive Plan
 - Adopted Ordinance Language
 - Mapped And Adopted Designated Development Area
 - Signed agreement with 3rd party non-profit land conservation organization
- Agreement spells out roles, responsibilities and reporting requirements

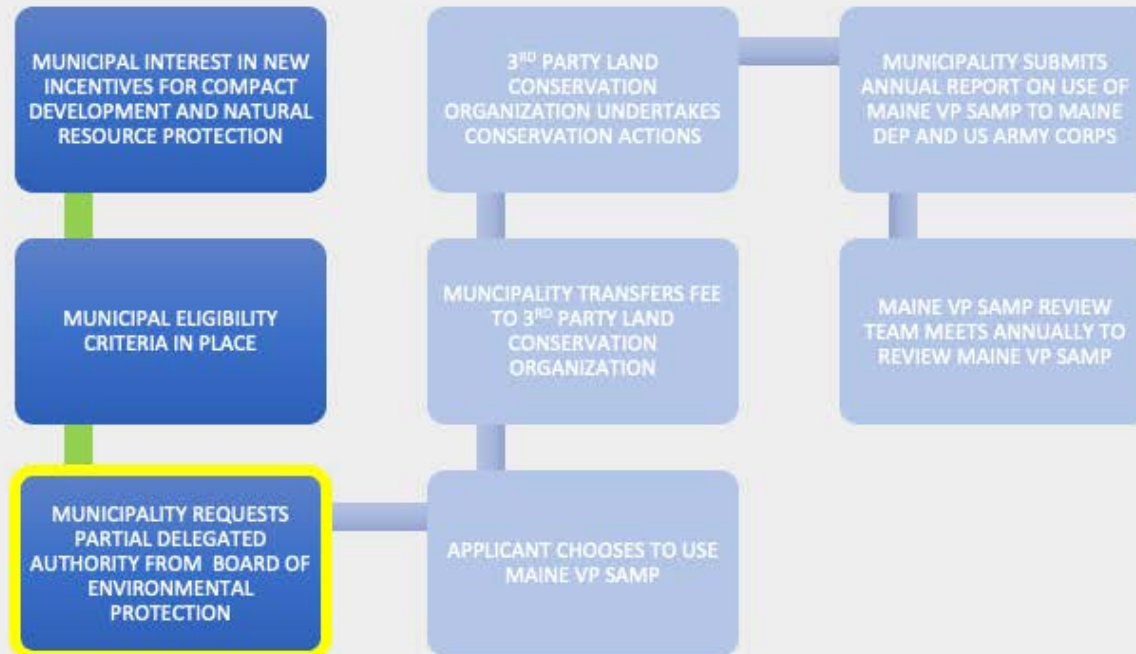
The municipality must also enter into an agreement with a non-profit land conservation organization such as a land trust to undertake the conservation actions funded by use of the Maine VP SAMP.

Steps for adopting the SAMP for your town



The previous benchmarks must be in place before the the municipality can apply to the Board of Environmental Protection for partial delegated authority to issue vernal pool permits in its designated development area.

Steps for adopting the SAMP in your town



The municipality puts together an application to the Board of Environmental Protection (in Maine; will differ by state) responding to the standards listed in 38 MSA 480-D and F.

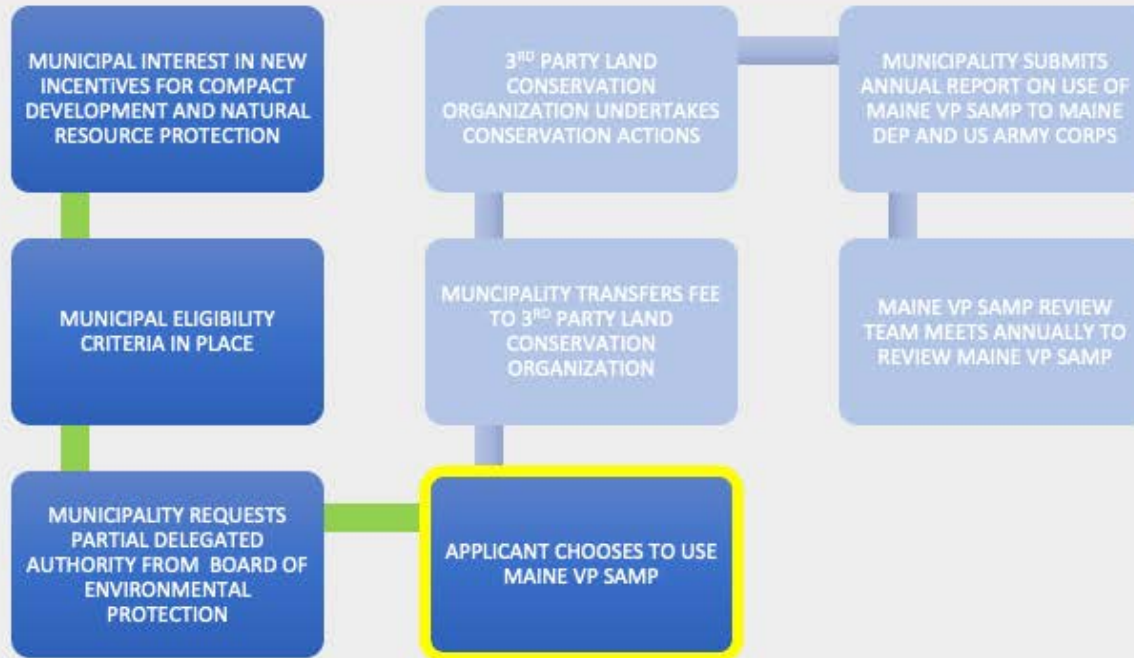
PARTIAL DELEGATED AUTHORITY

- Municipality submits request to the Board of Environmental Protection (BEP) to issue VP permits in the Designated Development Area
- Municipality demonstrates ability to meet standards and conditions of 38 MSA sections 480-D and F
- DEP Commissioner makes recommendation to BEP
- BEP issues order approving municipal request



The process for authorizing delegated authority under the Natural Resource Protection Act is found in 38 MSA section 480-F. Through delegated authority, the municipality takes on the responsibility of issuing NRPA vernal pool permits according to the Maine VP SAMP. Maine Department of Environmental Protection retains the ability to deny use of the Maine VP SAMP on a project basis and also has oversight of the final permit approval.

Steps for adopting the SAMP in your town



Once the municipality has met all the benchmark criteria, applied for and received partial delegated authority it can make the Maine VP SAMP available for use in the designated development area. Use of the Maine VP SAMP is voluntary on the part of the applicant.

APPLICANT CHOOSES TO USE THE MAINE VP SAMP

- Applicant fills out municipal vernal pool application
- Applicant submits Self-Verification Form to the Army Corps
- Applicant pays fee to municipality or undertakes permittee-responsible mitigation (PRM)

- Only available for impacts to vernal pools in designated development area
- PRM must meet same standards as the conservation actions undertaken by the municipality's 3rd party conservation partner.

IF AN APPLICANT CHOOSES TO USE THE MAINE VP SAMP, SHE FILLS OUT THE MUNICIPAL VERNAL POOL PERMIT APPLICATION, SUBMITS THE ARMY CORPS CATEGORY 1 SELF-VERIFICATION FORM AND PAYS THE APPROPRIATE FEE TO THE MUNICIPALITY.

APPLICANT CHOOSES TO USE THE MAINE VP SAMP

- Applicant can always choose to use the standard regulatory process.
- All other permits, local, state, federal, for impacts to other regulated resources are still required.



Photo courtesy of Woodlot Alternatives

Use of the Maine VP SAMP is voluntary; it only applies to impacts to vernal pools in the designated development area; all other permit requirements for impacts to other regulated resources remain in place.

FEE DETERMINATION MECHANISMS ALLOWED BY THE MAINE VP SAMP

APPRAISAL-BASED METHOD

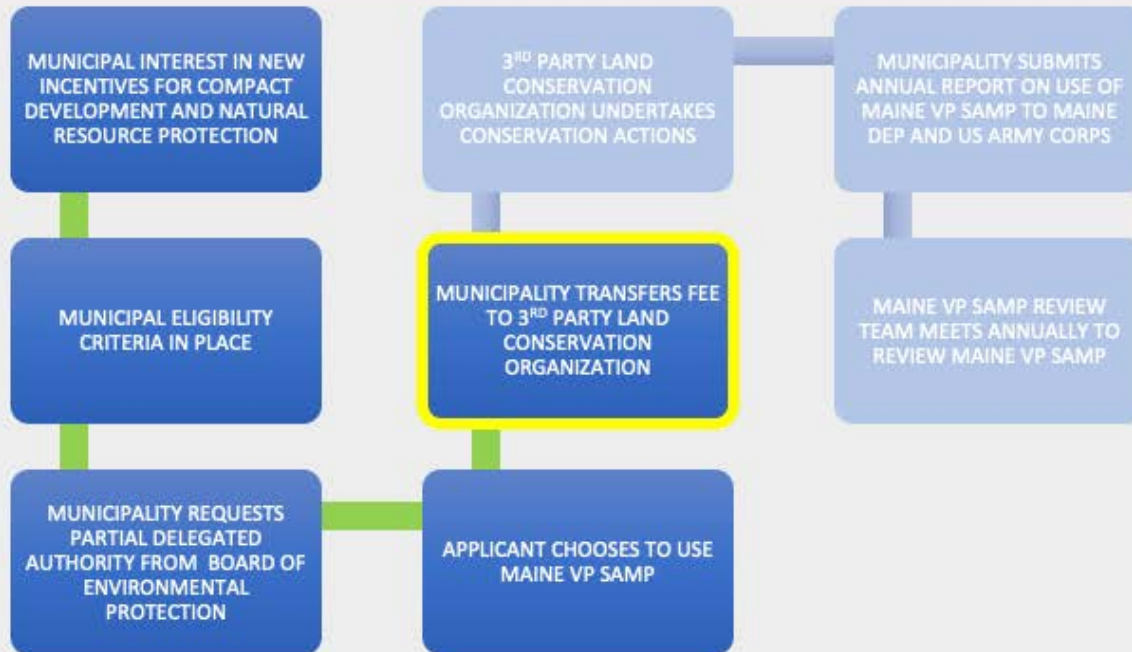
- The applicant provides appraisal of the parcel with a value for the parcel in its 'as is' condition including vernal pool(s) and with a value for the parcel as if the vernal pool did not exist.
- The applicant pays 40% of the difference between the 2 values to the municipality.

MINIMUM FEE

- A municipality may choose to adopt a minimum fee if it feels that the appraisal-based method will not provide enough capital for the required conservation.

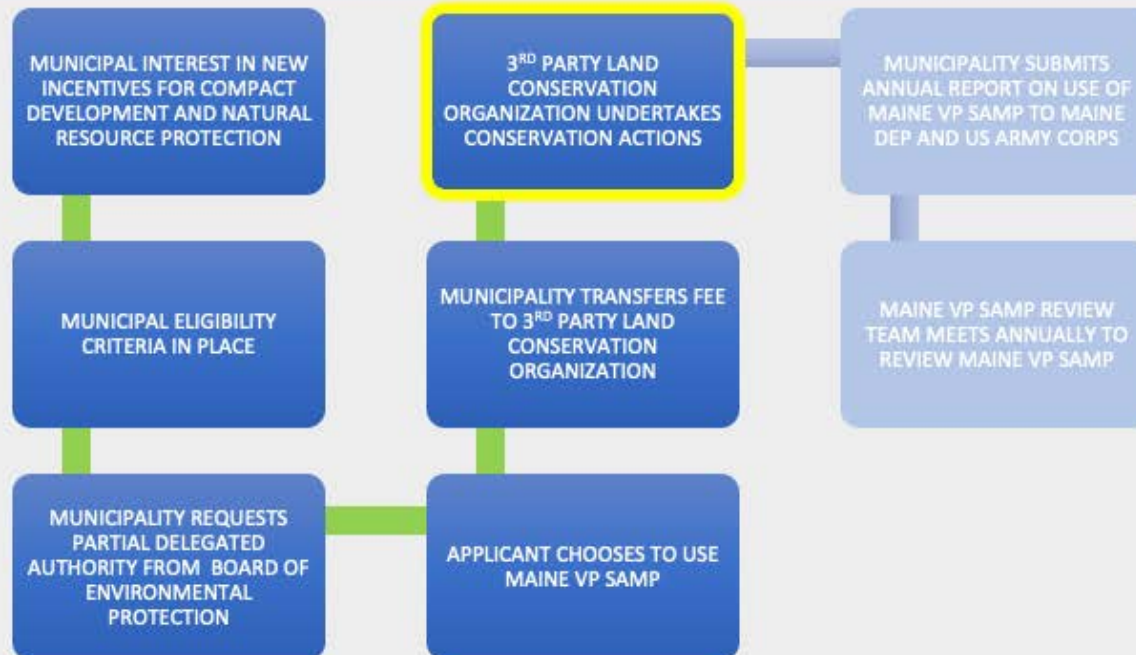
There are two accepted methods of fee determination in the Maine VP SAMP. One is based on the appraised value of the parcel and the other is a minimum fee set by the municipality. The municipality identifies in ordinance which fee determination mechanism is used.

Steps for adopting the SAMP in your town



Once the municipality issues a conditional vernal pool permit and collects the fee, the permit is forwarded to the Maine DEP. The Maine DEP has up to 30 days to take action on that permit. If 30 days pass, the permit is considered final. At that point, the municipality forwards the fee collected to the 3rd party land conservation organization.

Steps for adopting the SAMP in your town



The land conservation organization is responsible for identifying high value conservation targets based on the Maine Vernal Pool Conservation Criteria in the Maine VP SAMP.

3RD PARTY UNDERTAKES VERNAL POOL CONSERVATION ACTIONS

- Programmatic target of 2 pools and 70 acres conserved in the rural area for each pool impacted in the designated development area.

- Conservation targets must meet Maine Vernal Pool Conservation Criteria
- Substantially similar to existing mitigation ratios
- Conservation can be via easement or fee
- Protected in perpetuity

The Maine VP Conservation Criteria will provide mitigation that is substantially similar to that required under existing regulations.

MAINE VERNAL POOL CONSERVATION CRITERIA

BIOLOGICAL CRITERIA

- Meets State definition of Significant Vernal Pool **OR**
- Egg mass counts meet or exceed mean counts in MDIFW database



AND

LANDSCAPE CRITERIA

- Surrounded by 1000' undeveloped zone (75% natural land cover)

AND ONE OF THE FOLLOWING:

- Within an MDIFW-identified undeveloped forest block
- Within an MDIFW focus area
- Adjacent to conservation land
- Within municipal shoreland resources protection zone



There are both biological criteria and landscape criteria to insure that the conservation projects protect high quality vernal pools embedded in an undeveloped landscape protecting both the pool footprint and the needed terrestrial amphibian habitat. These conservation projects will also protect additional ecosystem values and processes such as connectivity, unfragmented habitat blocks, and public access.

3RD PARTY UNDERTAKES VERNAL POOL CONSERVATION ACTIONS

- Target 2 pools and 70 acres for each pool impacted in the designated development area
- Provides municipality with annual report of conservation activities

- Reporting includes documentation of conservation actions, dispensation of funds, results of biological monitoring as required

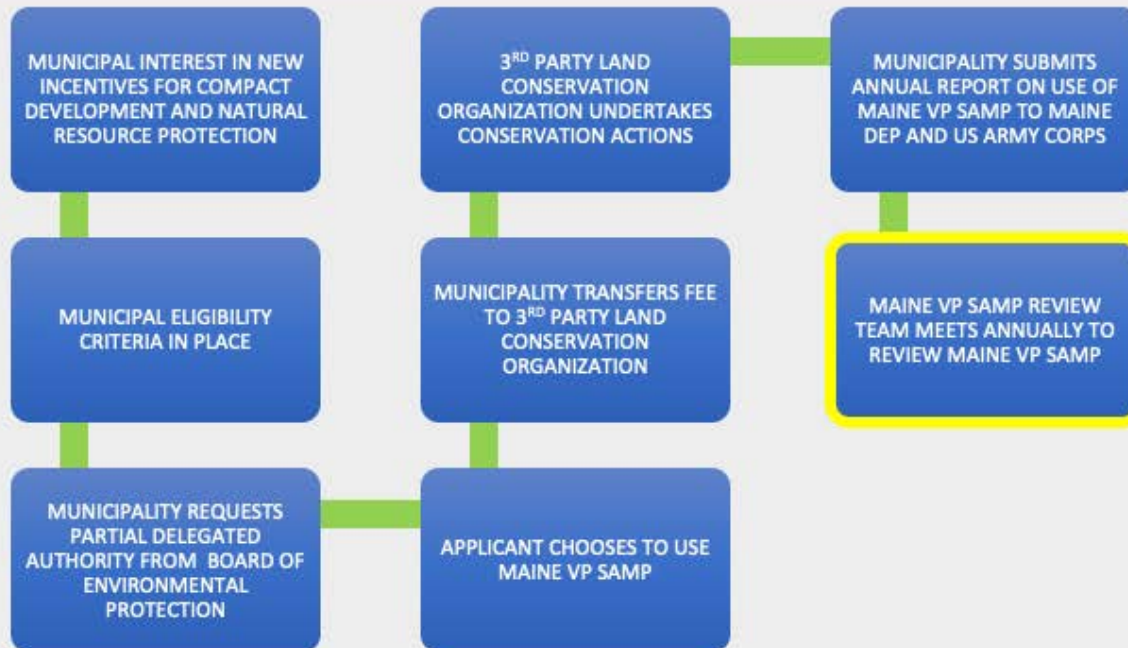
The third party conservation partner will provide an annual report to the town that details use of the Maine VP SAMP funds and projects completed. Biological monitoring is required twice after vernal pools are conserved - at 5 and 10 years.

Steps for adopting the SAMP in your town



The town will add its annual data on use of the Maine VP SAMP to the report submitted to it by the 3rd party and submit the complete report to the Maine DEP and ACOE.

Steps for adopting the SAMP in your town



There will be an annual review of the Maine VP SAMP to ensure that it is working as anticipated. The Maine VP SAMP can be terminated if the agencies believe it is not effectively serving to mitigate vernal pool impacts with appropriate conservation.

BENEFITS OF THE MAINE VERNAL POOL SAMP

- Reduces workload of state and federal regulatory agencies
- Provides certainty and predictability for developers
- Encourages compact development by providing an economic incentive for development where municipalities want development
- Supports municipal vision for rural lands
- Provides remuneration to rural landowners
- Conserves vernal pools in a landscape context
- Conserves multiple values including landscape connectivity

The Maine VP SAMP provides benefits to municipalities, applicants, and regulators while providing more certainty for the long-term protection of vernal pools.