



2013 RESOURCE ANALYSIS AND SCIENTIFIC SERVICES DIVISION ANNUAL REPORT

As the Resource Analysis and Scientific Services (RASS) Division of the Adirondack Park Agency, we are tasked to provide sound, independent scientific and engineering advice to all other Agency divisions. Often times we will act as the interface between other Agency Divisions offering technical determinations and providing insight on environmental issues.

RASS Staff is always engaged with addressing the linkages between science and policy in how we interpret sometimes highly technical and complex material. We endeavor to reduce highly technical subjects to understandable language. With that in mind, we strive to explain in our personal contacts, written memos, and letters, why we require certain actions and what the effects of those actions are from an environmental and fiscal point of view.

For example, it is important that landowners know why we require Deep Hole Test Pits to be dug and interpreted; the suitability of soils for wastewater treatment is of primary concern for environmental and human health. Furthermore, the better suited the soils are to receive wastewater, the less expensive it is for the landowner to have a system designed and installed. It is this type of information that is beneficial to all parties involved in the undertaking of a project.

It is also our commitment to provide wetland determinations and field delineations to landowners in the Adirondack Park. This is an integral step in the planning and design phases of projects and helps to avoid and/or minimize wetland impacts. It is this reason that RASS staff is often the first face of the Agency that a project sponsor sees and reveals their development plans to. It is common for RASS to spend long hours in the field advising design that will avoid adverse environmental impacts.

It is RASS's charge to educate the project sponsor regarding the resources of concern and the reasons for their protection with a high level of professionalism, civility and respect. We do this in light of the RASS Division's guiding principle; "Protect natural resources by applying relevant laws, regulations, standards and policies using good science and sound engineering judgment, while at the same time, being respectful and consistent with all those we come in contact with."

Through any given year RASS staff work on projects, enforcement cases, variances, and policies, and provide technical advice regarding a wide variety of topics including making height, navigability and mean high

water mark determinations, identifying, delineating and evaluating wetlands, assessing wildlife impacts, assisting lake associations in management of aquatic invasive species, and assessing forest management activities. All Agency transactions that involve wetlands, soils, wastewater treatment, surface waters or forests pass through RASS for resource analysis and recommendations. RASS professionals are called upon to provide expert testimony under oath regarding their areas of specialization.

Engineering

Evaluating existing and proposed development within the Park requires professional engineering services and technical analysis that is based upon sound science and engineering judgment and is consistent with applicable laws, regulations, standards, policies and guidance documents. RASS engineering staff routinely conducts site visits, review professionally prepared plans and provide recommendations and alternative designs where appropriate. Subject areas, include, but are not limited to, on-site wastewater treatment, site design and access, stormwater management, erosion and sediment control, dams, bridges, roads, traffic, noise and adequacy of municipal services. The technical analysis provided by RASS Engineering staff includes professional opinions that are protective of life, health, and the natural resources of the Park.

In April of 2013, RASS staff began tracking the number of engineering reviews by category as well as reviews by Agency Division. The purpose is to provide an overview of time spent on some of the more common review areas for staff. Although it only represents 9 months, it provides an overview of how engineering services are utilized at the Agency.

In 2013 RASS Engineering staff provided written technical recommendations (by Division) as follows (see Figure 1):

- Regulatory Programs (Permit Applications) - 164
- Legal (Jurisdictional Office, legal reviews) - 95
- Legal (Enforcement) - 37
- Planning (Local Government) - 2
- Planning (State Land) - 3

In addition, RASS Engineering staff conducted 126 site visits in 2013.

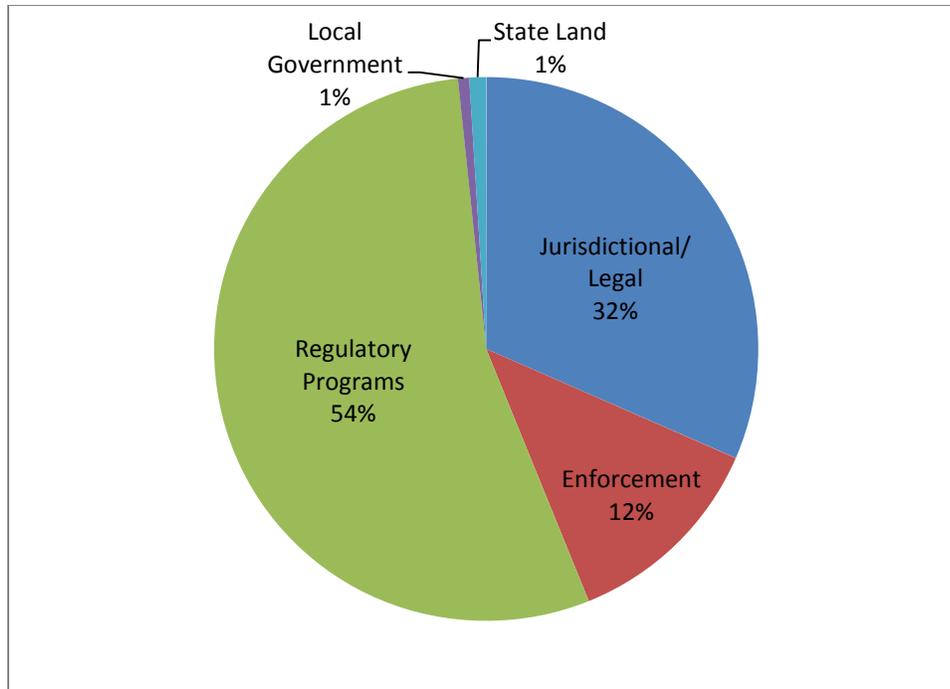


Figure 1. Engineering reviews by Agency Division.

Engineering reviews by category is found in Table 1 and depicted in Figure 2 and include:

On-Site Wastewater Treatment Systems - typical reviews consist of evaluation of plans prepared by a New York State Licensed Professional Engineer for compliance with applicable laws, regulations, standards and policies for protection of health and water resources.

Shoreline - reviews include a broad spectrum of programs including projects, variances, jurisdictional determinations, State land and enforcement cases. Typical evaluations include both office plan reviews and site visits for structures such as new and expanded single family dwelling construction, retaining walls, boathouses, docks, boardwalks, decks and other accessory structures.

Stormwater Management - typical reviews consist of evaluation of plans prepared by a qualified professional for compliance with applicable laws, regulations, standards and policies. Utilizing the Agency's Development Considerations, the goal is to prevent surface and groundwater impacts from stormwater runoff associated with development proposals. Potential impacts from untreated stormwater runoff include a decline in surface water quality, diminished groundwater recharge and quality, stream channel erosion and habitat degradation, increased overbank flooding, floodplain expansion and impacts to aquatic organisms.

OSWTS Reviews	95
Stormwater Management	85
Shoreline Review	114

Table 1. Engineering reviews by category

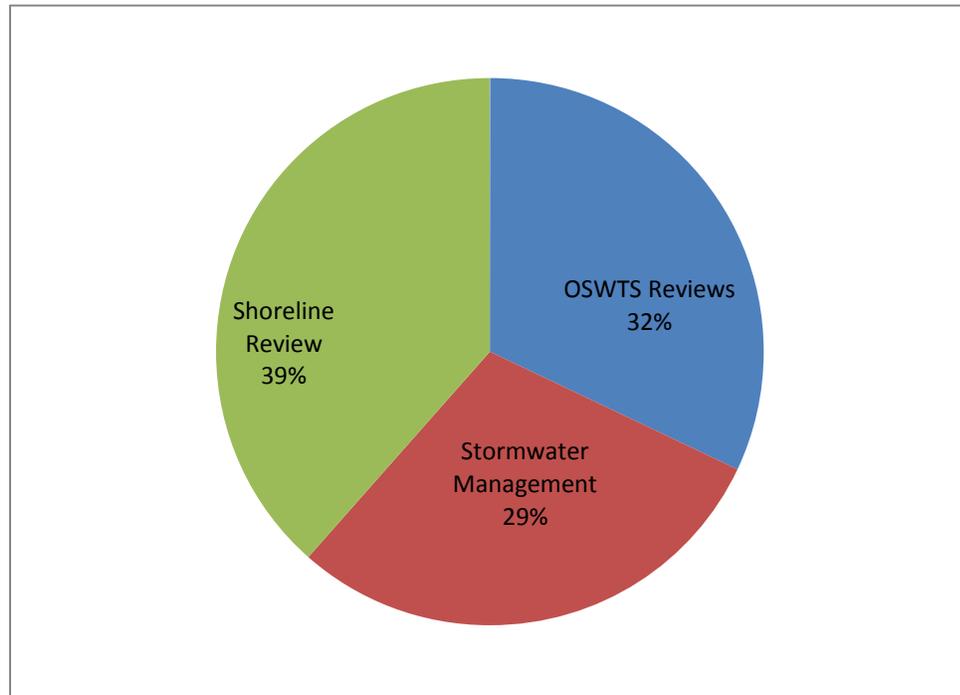


Figure 2. Engineering reviews by category.

Soils

A qualified soil scientist on the Agency staff provides an essential service to the public and minimizes the soil component of on-site wastewater treatment system (OSWTS) analysis for Agency engineers. This process is vital so Agency engineering staff can efficiently issue approvals for submitted OSWTS designs.

In 2013 a total of 76 projects involving 147 deep-hole test pits (DHTPs) were reviewed by Agency staff (Table 2). Of the 147 DHTPs 126 were described by Agency staff and 21 were described by outside consultants (Figure 3). All data submitted by consultants is checked by Agency staff to ensure profile accuracy, separation requirements, and appropriate setback distances. In 2013 forty-four percent of the test pits were approved for conventional on-site wastewater treatment systems (OSWTSs), 33 percent were approved for shallow absorption

OSWTSSs, and 23 percent did not meet Agency guidelines (Figure 4). Of the approved shallow systems 83 percent were due to shallow seasonal high groundwater and 17 percent were due to shallow bedrock (Figure 5).

Deep Hole Test Pit Statistics	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	YTD
Projects Involving DHTPs	2	0	5	6	12	7	10	5	5	10	8	6	76
DHTPs Described by APA	0	0	2	10	22	10	19	15	12	22	7	7	126
DHTPs Described by Consultants	4	0	4	0	3	0	1	1	6	1	1	0	21
Total DHTPs	4	0	6	10	25	10	20	16	18	23	8	7	147
Approved Conventional Systems	1	0	1	6	16	4	7	4	6	9	6	5	65
Approved Shallow Systems	0	0	3	4	6	5	3	5	9	9	2	2	48
Did not Meet Agency Guidelines	3	0	2	0	3	1	10	7	3	5	0	0	34
Approved Conventional Systems %	25%	0%	17%	60%	64%	40%	35%	25%	33%	39%	75%	71%	44%
Approved Shallow Systems %	0%	0%	50%	40%	24%	50%	15%	31%	50%	39%	25%	29%	33%
Did not Meet Agency Guidelines %	75%	0%	33%	0%	12%	10%	50%	44%	17%	22%	0%	0%	23%
Approved Shallow Systems	0	0	3	4	6	5	3	5	9	9	2	2	48
Shallow Systems due to SHGWT	0	0	3	2	4	5	3	4	7	9	1	2	40
Shallow Systems due to Bedrock	0	0	0	2	2	0	0	1	2	0	1	0	8
Shallow Systems due to SHGWT %	0%	0%	100%	50%	67%	100%	100%	80%	78%	100%	50%	100%	83%
Shallow Systems due to Bedrock %	0%	0%	0%	50%	33%	0%	0%	20%	22%	0%	50%	0%	17%

Table 2. Deep-hole test pit statistics for 2013.

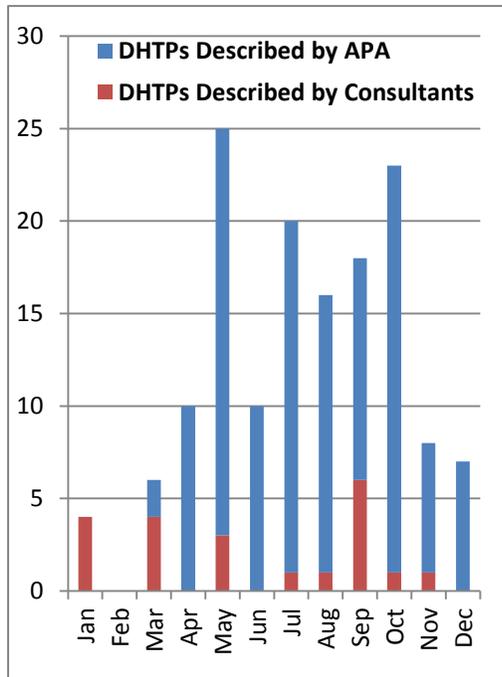


Figure 3. Deep-hole test pits described by the APA and consultants in 2013.

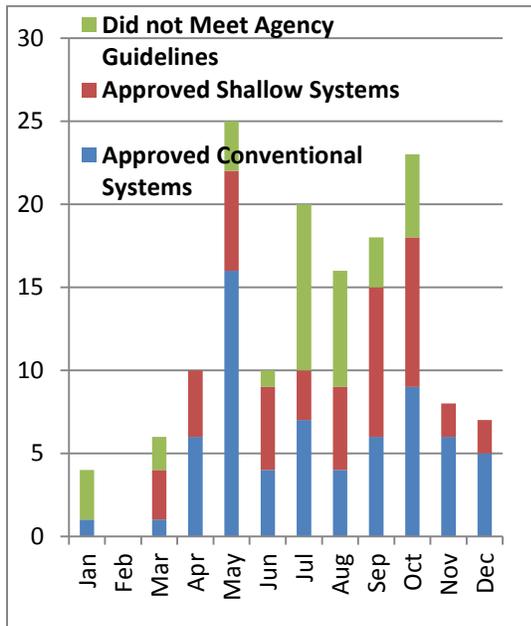


Figure 4. Number of approved shallow and conventional systems and number of systems that did not meet Agency guidelines.

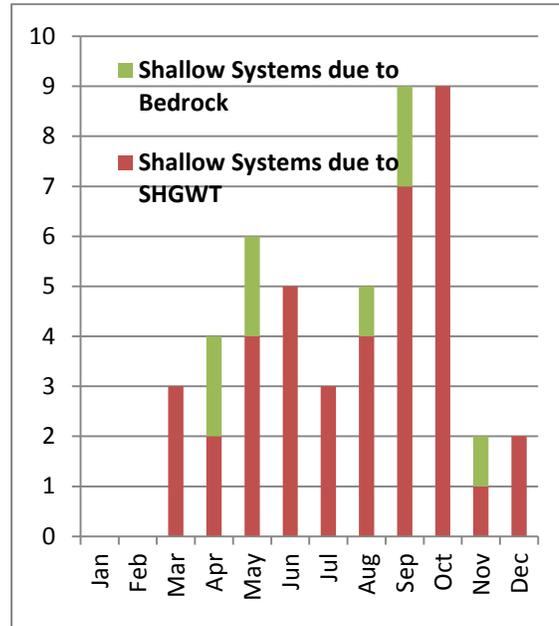


Figure 5. The number of approved shallow systems due to SHGWT and to bedrock. This graph is only accounting for shallow systems.

Wetlands

Wetland involvement is a common jurisdictional trigger. The NYS Freshwater Wetlands Act and the APA Act have stringent requirements for regulated activities involving wetlands. The Agency's wetlands protection program including mapping, delineation, evaluation, mitigation, and impact analysis has been and is considered proactive, responsive to public needs, and technologically advanced. RASS wetlands staff provide a level of service to the public that has no parallel.

During 2013 a total of 217 wetland visits were made throughout the Park (Figure 6). This represents a decrease from 2012 which had 258 site visits. Each visit involved a wetland determination and/or delineation. Some of the wetland delineations, due to wetland size, took several days to complete. The average processing time of all 217 visits was 11 days (Table 3).

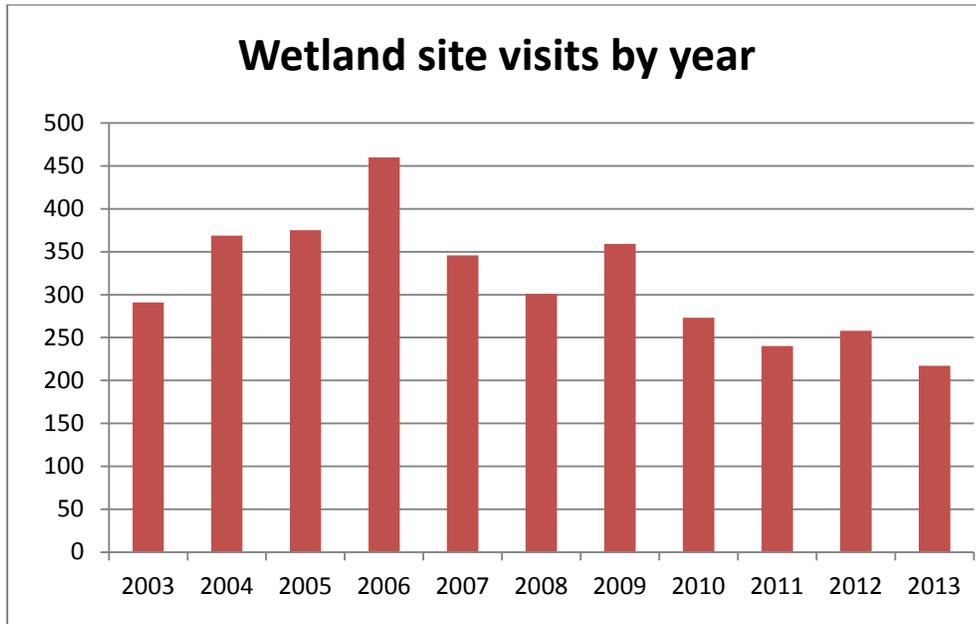


Figure 6. Wetland visits by year (2003 to 2013).

Time Period	Number of requests received during month	Number completed	Interval for processing. (Date received to date scheduled for those received in that month)	Number pending
January	2	2	N/A	0
February	0	0	N/A	0
March	5	0	N/A	5
April	27	18	12	14
May	35	37	11	12
June	42	33	13	21
July	24	35	18	10
August	27	28	10	9
September	22	22	10	9
October	19	21	9	7
November	14	19	7	1
December	0	1	N/A	0
Cumulative for 2013	217	217	Average = 11	0

Table 3. Total wetland site visits by month and average processing time for wetland site visits.

Remote Sensing

RASS staff conducted 292 wetland air photo interpretations in 2013, mostly in support of other Agency divisions as summarized in Table 4 and depicted in Figure 7. Air photo interpretations are conducted with high-resolution digital stereo pairs of air photos viewed with state of the art hardware and software bought through our EPA grants. This allows staff to respond to requests for wetland determinations in a timely manner and significantly reduces the need for on the ground wetland field visits.

	JIF	Referrals	Project Review	Enforcement	Public Requests	For Other Staff	Other	Total
Jan.	10		3	2		1	1	17
Feb.	13		7	1			1	22
March	19		2	2	1		4	28
April	16		5	4	2		2	29
May	9		5	1	1		2	18
June	30		2	2		1	2	37
July	20		7	1		2	2	32
August	13		1		3	3	3	23
Sept.	9		3	2			1	15
Oct.	8		5	1		2	1	17
Nov.	12	2	4	1			4	23
Dec.	15	1	5	1	2	1	6	31
Total	174	3	49	18	9	10	29	292

Table 4. Air photo interpretations by request.

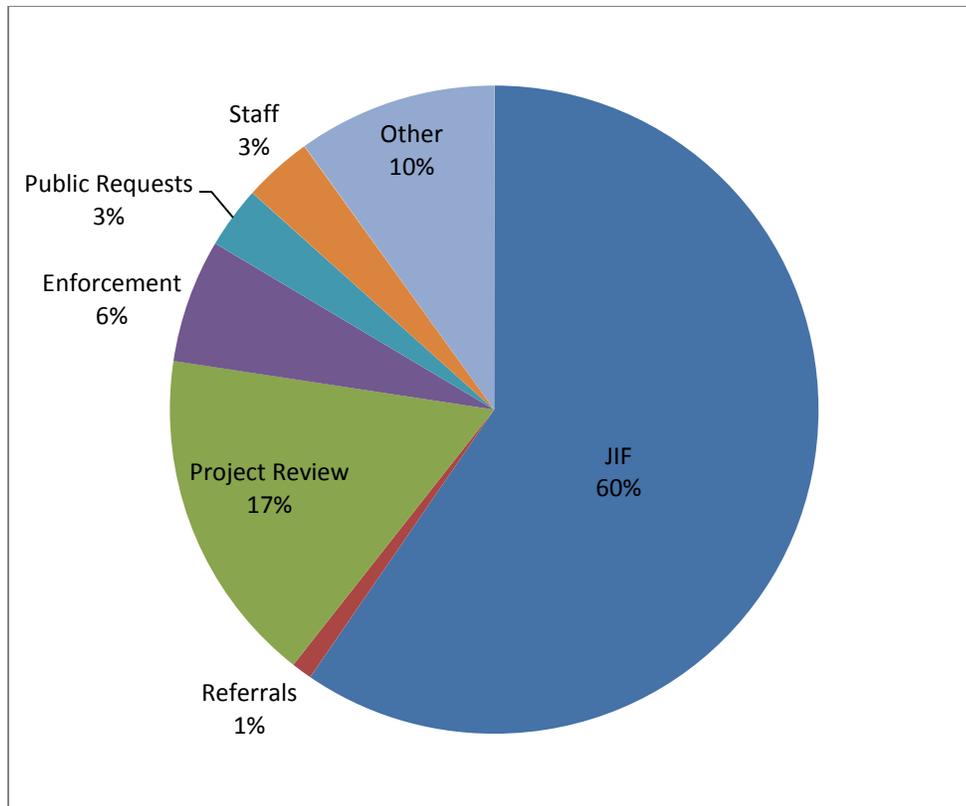


Figure 7. Air photo interpretations by request.

Biological, Freshwater and Forestry Resources

In April of 2013, RASS ecologists and forestry specialist staff began tracking the number of biological, freshwater wetlands, and forestry related reviews by category. The purpose is to provide an overview of time spent on some of the more common review areas for staff. Although it only represents 9 months, it provides an overview of how wetland biologists, freshwater ecologist and forestry specialist services are utilized at the Agency. As depicted in figure 8, wetland related project reviews accounted for approximately 64 percent of the reviews and freshwater resource related projects, mostly attributed to aquatic invasive species management, was second at 16 percent.

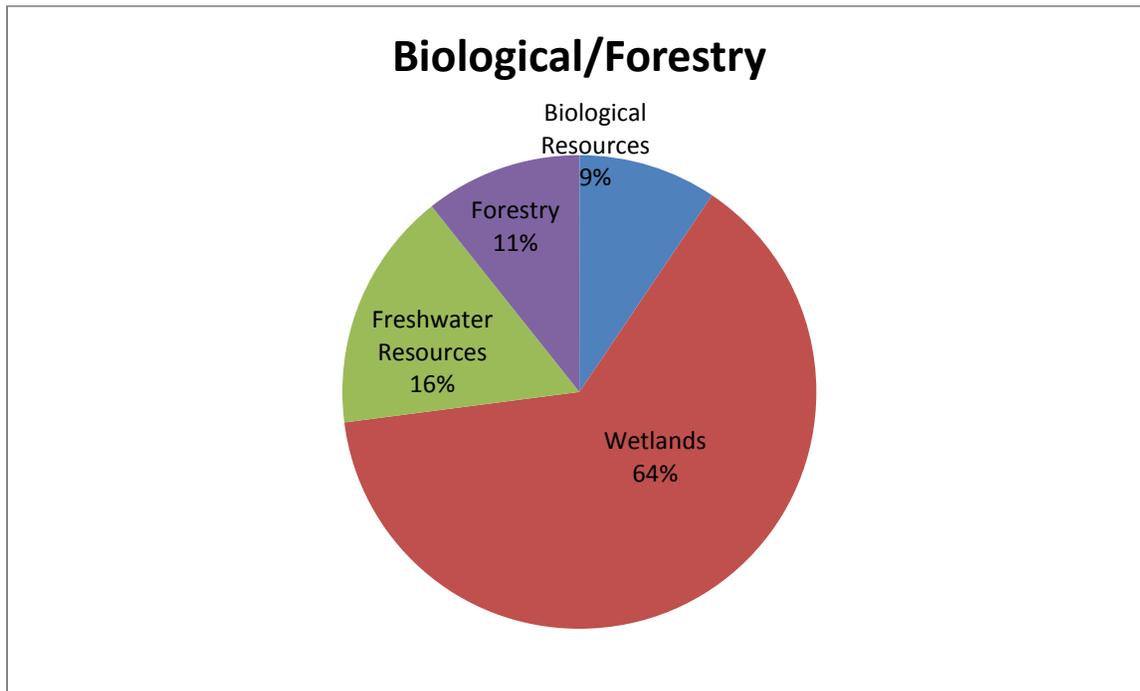


Figure 8. Wetlands, biological resources, freshwater resources and forestry project reviews.

Freshwater Resources

The condition of surface waters (lakes, ponds, rivers and streams) affect residents of the Park in many ways, including quality of recreational activities and human health. Often surface water quality is indicative of other less visible problems within the watershed. Nuisance aquatic plants, invasive species, algal blooms, basin infilling, and delta growth are almost always symptoms of larger problems within the watershed. RASS staff takes a holistic approach to these water quality issues by analyzing the causes of the symptoms and attempting to address those root causes through stakeholder education and implementation of preventive and restorative measures. Requiring adequate shoreline setbacks and intact vegetational buffer zones, and requiring design and implementation of appropriate stormwater management plans are essential parts of this holistic

approach. The two projects outlined below are good examples of how the Agency works with stakeholders to help preserve or restore the Adirondack Park's native ecosystems.

In 2013 two significant projects were approved by the Agency's Board. In March the Town of Chester was issued a permit to treat a 15± acre area of Loon Lake for Eurasian watermilfoil using the aquatic herbicide Renovate®. A vegetative survey which was conducted in September, 2013, indicates that the May treatment was very successful. That treatment, along with aggressive hand harvesting and benthic barrier installations significantly reduced the Eurasian watermilfoil population throughout the entire lake. The Town and lake association are now in a good position to continue with a cost effective, long-term management plan to manage the milfoil.

At the September, 2013 Agency meeting, a permit was issued to the NYS DEC for the reclamation of Lower Sargent Pond, a 136 acre body of water located in the Sargent Pond Wild Forest. The reclamation, which occurred over two days during October, was undertaken to eliminate the previously unauthorized introduction of largemouth bass from the lake. The NYS DEC is planning to stock the lake with native brook trout in the Fall of 2014.

Forests

The privately owned forests of the Adirondacks are perhaps the most visible natural resource. There are factors such as invasive pests and pathogens, climate disruption and acidic deposition that pose the threat of severe impairment. Some of these are global or statewide issues that we here in the Park have only a peripheral ability to counter. However, the Agency does have the ability to encourage good forest management practices that will result in a resilient, healthy forest more capable of resisting the perturbation factors noted above.

In 2013, RASS staff was involved in discussions with timber industry representatives and environmental advocacy groups regarding modern silvicultural practices in the Adirondack Park. These talks have included a discussion of the role of forest certification programs in modern forestry, and regulatory approaches that encourage sustainable forest management based on the best available science.

In December RASS staff presented a proposed jurisdictional timber harvesting project to the Agency Board. P2013-0239 involved Lyme Adirondack Timberlands, LLC's proposal to conduct a 42 acre shelterwood overstory removal harvest, jurisdictional under the Agency's clearcut regulations. RASS staff conducted a thorough and efficient review of potential impacts, and the Agency Board approved the project.

EPA Grants

The Environmental Protection Agency (EPA) Wetland Protection Program Development (WPPD) Phase 1 grant entitled, "Developing a Monitoring Framework for Detecting Wetland Response to Climate Change in the Adirondack Park: Protocol for Development and Implementation" was completed in 2013 and the final report is in preparation.

The Agency was awarded additional funding of \$173,000 for Phase 2 of the project in November. Phase 2 involves implementation of the data collection program using citizen scientist volunteers. A Project Coordinator will be hired and field work will begin in April, 2014. This is the 15th EPA WPPD grant award that the RASS Division has garnered dating back to 1993 and totaling over \$3 million dollars.

Committee and Organizational Affiliations

List of Committees or Organizations in which RASS Staff Participate

Committee Name	Staff Participant	Number of Meetings in 2013
Mohawk Watershed Advisory Committee	Rooks	Semiannual meetings
Lake Champlain Ecosystem Team	Rooks	1
GIS Internal User's Group	Rooks/O'Dell/Walrath/Ziemann	2
Interagency Wetlands Working Group (APA, DOT, DEC,USACE)	Rooks/O'Dell	1
APIPP Emerald Ash Borer Outreach Committee	O'Dell	2
Lewis County Envirothon test writing committee	O'Dell	1
Lake Champlain Basin Program Technical Advisory Committee	Snizek	10
Lake Champlain Basin Program Aquatic Nuisance Species	Snizek	4
Adirondack Aquatic Nuisance Species Committee	Snizek/Walrath	Quarterly meetings
Champlain Watershed Improvement Coalition of New York (CWICNY)	Snizek	Monthly meetings
Northeast Aquatic Plant Management Society (NEAPMS)	Snizek	Annual meeting
New York State	Snizek	Annual meeting

Federation of Lake Association (NYSFOLA)		
Adirondack Park Invasive Plant Program (APIPP)	Snizek/Walrath	2
Lake Champlain Basin Program AIS Rapid Response Team	Snizek	2
NYS Invasive Species Council	Snizek	4
Silvicultural Practices Review Group	Ziemann	2

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