Citizen Water Monitoring Survey– Streams

Final Report
July 2006

Josie Biedermann: Evaluation Assistant
Jake Blasczyk: Evaluation Specialist

Contents

STUDY PROCESS

Survey Development and Administration

Kris Stepenuck, Water Action Volunteers Coordinator, Environmental Resources Center, UW-Madison Extension requested the survey. In her role as coordinator and trainer of volunteers, Kris needed information to improve the training program and requested the survey. Kris, Basin Educator, Peggy Compton, DNR Citizen-based monitoring team, and Jake Blasczyk, ERC Evaluation Specialist, developed the survey. The survey was administered online and through the mail. Respondents were those who received training since 2001 and were identified using lists of those who had registered for training. Thus, the population consists of those who had initially registered for and received training in stream monitoring.

The online survey was administered by Mary J. Lucas, Multimedia & Web Design Specialist, Cooperative Extension Technology Services while Kim Leizinger, ERC Office Operation Associate managed the mail survey. Using Dillman's recommended procedures, a series of letters and periodic reminders were sent in order to garner the highest response rate possible.[1] The online survey was administered from March 28th to May 7th, for a field length of almost one and a half months. The paper surveys were in the field for nearly two and a half months, from March 24th to June 7th. (Note: participants were asked to respond by early May; the last reminder was sent in late April, however the last response to arrive was in June).

Sample and Response Rate

Of the initial list of 606 stream monitor trainees to be sampled, 25 were found to be incorrect addresses and 17 were reportedly never trained. Thus of the 564 possible respondents 334 completed the surveys for a response rate of 59 percent. The responses by those receiving the mailed surveys were considerably higher (75%) than the online surveys (54.5%).

Survey Analysis

The 334 survey responses consisted of 204 web-based and 130 paper survey responses. Both surveys were analyzed together as each had identical questions with the exception of three small variations. These variations are noted by their corresponding figures in the report. Using the software SPSS, both paper and web surveys were analyzed mostly with descriptive statistics. Frequencies were observed for patterns in addition to occasional chi-square tests to check the significance of possible correlations as seemed likely from frequency examination. The analyses were grouped by monitoring characteristics as reported by respondents. There are five types of respondent monitoring categories and each includes a different frequency as the following table illustrates. The report is also organized by these categories.

In addition to 28 structured questions there were also five comment fields in the survey. Most of these were visually sorted to identify themes and corresponding number of

Categories of Respondents	*Frequency*
Trained to Monitor – All Respondents	334
Trained and Have *Not* Monitored	83
Trained and Have Monitored	247
Trained, Monitored, Unwilling to Continue	39
Trained, Monitored, Willing to Continue	211

[1] Dillman, D., (2000). Mail and Internet Survey: the tailored design method. New York: Wiley

comments. The qualitative software Atlas.ti was used to assist analysis of one comment field.

SUMMARY: MAJOR FINDINGS

Overall, responses to both structured questions and comments seem generally quite positive about monitoring experiences. Three-fourths of all respondents have monitored since training and slightly over half of those who have not monitored state they are still likely to monitor in the future. Eighty-four percent of current monitors are also willing to continue. Moreover, the overall involvement seems to be rapidly growing as both the numbers that have attended training and that have monitored have sharply increased since 2001, particularly between 2003 and 2004. Current monitors also report great levels of confidence in the quality of the collected data. Comments indicate a segment of monitors also question collected data quality.

Main themes throughout the survey include a desire for continued training and more support in the transition from training to initial field experience. The structured questions however did not reflect the wealth of monitors who wrote they monitor in conjunction with youth. Specifically many respondents either monitor with a science class, a Girl Scout troop, children, or other youth group. Many comments focus on the need to instill a sense of stewardship in this generation as well as involving the excitement of youth to create sustained group synergies.

Monitoring Characteristics

Monitors have gone out to monitor a great deal since they were trained. Most have monitored at least three times and many have gone out more than ten times. Likewise most of those willing to continue report they would monitor more than six times in a year, and most would monitor year round. The majority of monitors spend 1-2 hours per site visit. Most future monitors are still willing to commit to 1-2 hours per visit. Few monitors (29%) live on the water they monitor. Most are willing to travel up to 25 miles, and a substantial number are willing to travel more than that.

The responses on the suggestion of sharing equipment are evenly split. Forty-five percent admit that they would be unwilling to share equipment even for just summer site visits. Likewise the prospect of purchasing equipment to monitor appears dubious. Monitors are nearly evenly distributed in their likelihood of purchasing equipment, with 57% unlikely or very unlikely to purchase equipment. However comments indicate that a few have already purchased equipment.

Those willing to continue monitoring indicate they would much prefer to monitor the same site with the same schedule and variables as well as choose their sites. There is also some preference for monitoring new variables. Other options, such as monitoring more frequently the same variables, monitoring an assigned site and monitoring on a specific schedule garnered more ambivalent responses, with many neither favoring nor disfavoring (Figure 20).

Influences to Monitor

Altruistic reasons are the most frequent factors why respondents decided to train, or why they plan on continuing monitoring. Factors receiving most responses are *helping to* provide *information on water resources general support of conservation* and. Other significant factors include *learning about water environs* and *concern for the specific water body* to be monitored. Also of high importance to many monitors was the sense of providing and *maintaining long term trend data* for the DNR (Figures 6a – 6b).

Reflecting the high number of educators involved in monitoring (including formal teachers and informal youth leaders), there were many comments on the importance of imparting water conservation knowledge to young people or integrating monitoring into classroom activities. Notably when asked to write freely on additional topics, the most frequent reason cited about why one monitors was to involve their classroom, Girl Scout troop, or other youth group. Many respondents did not highly rate or mention a sense of enjoyment when asked for *primary* reasons for monitoring. However when asked for a *secondary* reason, enjoyment was a much greater factor.

Barriers to Monitoring

Reasons why some did not monitor typically center on a lack of time. Current monitors think a lack of time is the primary reason some do not monitor, and those who haven't monitored identified commitments to volunteer activities or family/friends as main factors preventing them from monitoring. Similarly, current monitors who are unwilling to monitor in the future maintain that major reasons behind their decisions are its time consuming nature and other commitments.

Beyond time constraints, there are a number of other frequently cited contributing factors to not monitoring or not continuing to monitor. The following are the most common factors cited by respondents regardless of their monitoring behaviors (detailed in Fig's 9, 17 and 18), in order of frequency:

- *Time*
- *Doubts of data relevancy*
- *Low confidence*
- *Scheduling constraints*
- *Difficulty accessing equipment*

Although all the above factors were identified in the structured questions, it was *time* and *doubts of data relevancy* that were particularly stressed among the comment topics. While time was often stated as a brief mention, data relevancy was often elaborated on by requests for both ensuring its practical application as well as informing monitors of its use via increased feedback. Also, while not reflected in the structured questions, comments also focused on a lack of sustained group interest among both peer groups and youth / classroom groups.

More specific trends are noticed when looking at current monitors (Fig. 17), non-continuing monitors (Fig. 18) and those who never monitored (Fig. 9). Those who never monitored selected factors such as they never intended to monitor, a lack of confidence, scheduling constraints, and difficulties obtaining the equipment. Factors that played a prominent role in those unwilling to continue monitoring included a sense that the monitoring data didn't make much difference, reduced interest and schedule constraints. Current monitors thought that in addition to time constraints, non-monitors were also deterred by a lack of serious commitment, doubts on data relevancy, difficulty accessing a site, equipment access, and low confidence.

Although time is stated as a major obstacle, it is noted that most monitors are employed and in middle age groups, and these individuals typically have less available time than retirees. Also, filling up free time was the least important factor in deciding to be trained.

Factors Increasing a Respondent's Likelihood of Monitoring

Approximately half of current monitors report a need for more training. Yet training by itself does not guarantee volunteers will monitor a stream or continue monitoring. The most common types of training needs include a general *refresher* and *macroinvertebrate identification* for those who plan to continue monitoring. Many wrote they would only want more training if updated procedures were developed (Fig's 22a-22b). Additionally, when current monitors that plan on continuing were asked what would influence them to make a three year commitment the most common selection was on-going training. Yet most of those who never monitored stated they would be unlikely to monitor had they received additional training. Similarly, most current monitors that do not plan on continuing are also unlikely to continue given additional training.

While additional and specific training is desired by continuing monitors, there were other factors that influence decisions to continue monitoring. The most common factors included *quicker/easier methods*, *annual meetings or reports on data results*, and *one or two initial visits with an expert*. Factors that ranked very influential among those who never monitored and those who are not continuing include *being part of a shared-duty team*, *a set schedule* and *help from a local coordinator*. Comments similarly focused on these factors. The following table presents many possible factors that might influence decisions to monitor and the level of which all respondents rated the factors as influential. It represents a summary of factors that are common to all respondent types: non-monitors, monitors continuing to monitor, and non-continuing monitors. Details on each respondent type preferences can be found in fig's 10, 19 and 29.

Likelihood of Various Factors in Influencing Decisions to Monitor or Continue Monitoring			
Very Likely Influential Factors (among all respondent types)			
Annual meetings/reports on data results			
Quicker/easier methods			
One or two visits with an expert before monitoring alone			
Mid-Likely Influential Factors (among all respondent types)			
Opportunities to share experiences with other monitors			
One time publication on understanding data			
Sessions with speakers on water topics			
More help determining monitoring site			
More time to practice methods during training			
Least Likely Influential Factors (among all respondent types)			
Experts to call for help			
More recognition			
More parameters to monitor			
Additional web resources			
More detailed written methods to use while monitoring			
Mixed Preference Among Respondent Types:	**Non-Monitors**	**Monitors Not Continuing**	**Monitors Continuing**
Being part of a team that shares duties	*very likely*	*very likely*	mid-likely
Set schedule to monitor	*very likely*	*very likely*	mid-likely
Help from a local coordinator	*very likely*	*very likely*	mid-likely
Fewer parameters to monitor	n/a	*very likely*	least likely
On-going training	mid-likely	mid-likely	*very likely*
Training video/DVD for reference	mid-likely	least likely	mid-likely

INDIVIDUAL QUESTION RESPONSES

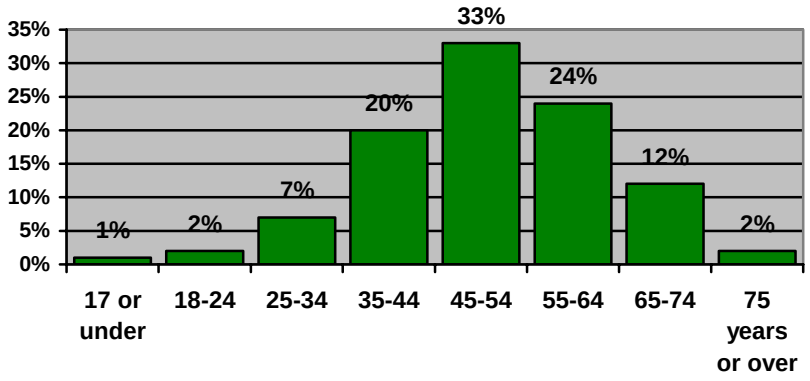
This section presents findings and data according to the major question topics on the survey and includes figures as either counts or percents, depending on which is most appropriate. Percents are derived from the frequency of the total responding to the question, unless otherwise noted. For example, a figure with percents in the section "Those That Never Monitored" were calculated from a total of 83, as is stated in the section heading.

I. RESPONDENT CHARACTERISTICS (N=334)

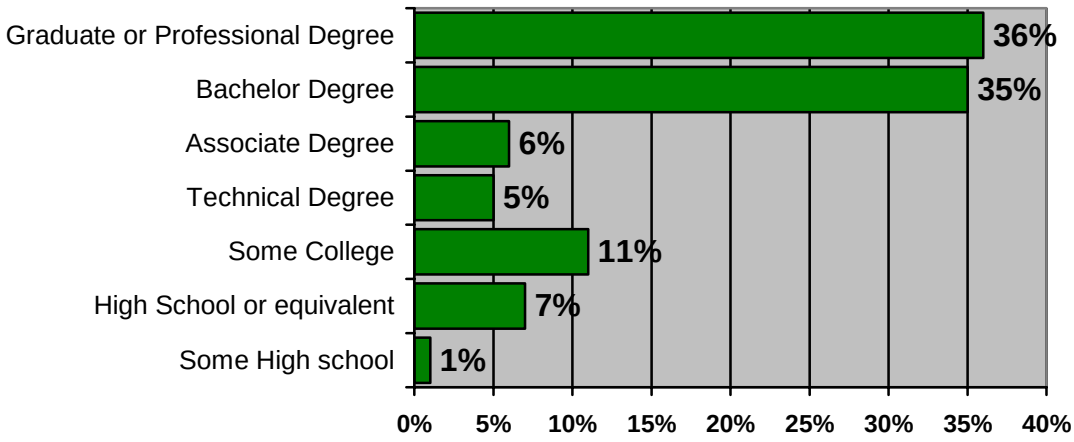
Most of those trained to monitor are educated professionals, educators, or retired and are in the middle age stages, with a median of 45-54 years. Although most trainees are in the educational and professional fields or retired there is still substantial diversity among the professions listed (figures 4a-4b). There are slightly more male respondents than female.

1. Gender	
Male	62% (n=203)
Female	38% (n=126)

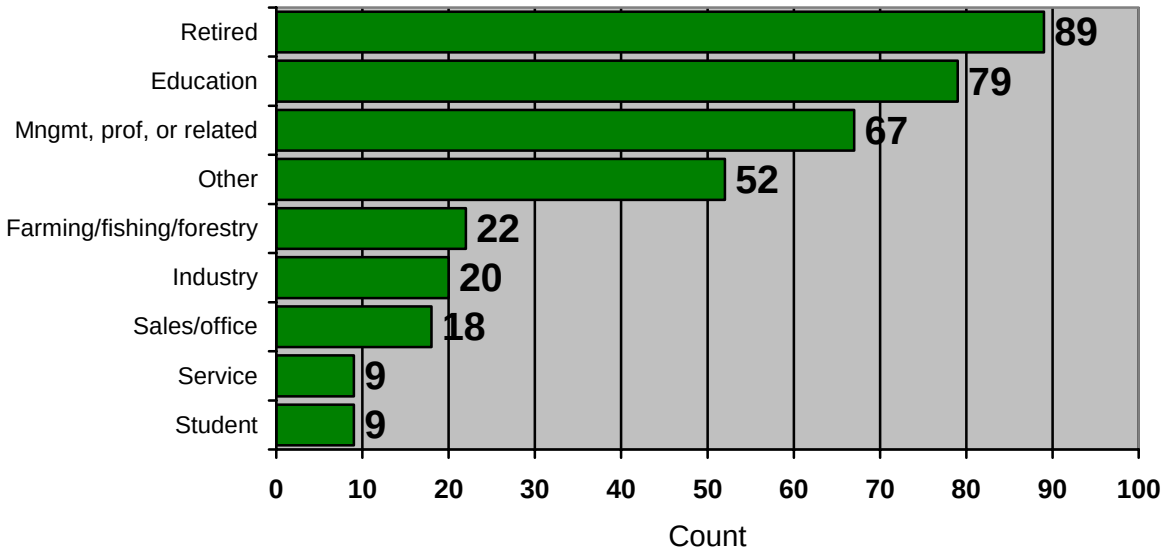
2. Age



3. Completed Education



4a. Occupation



4b. "Other" occupations cited:	Number
Homemaker	6
Government	5
Lab technician	4
Medical practitioner or researcher	4
Environmental Consultant / technician	3
Self employed	3
School bus driver	2
Retail	2
Garden / landscape design	2
Unemployed	2
Artist	1
Carpenter	1
Furniture manufacturer	1
Ho-Chunk nation administrator	1
IN DNR naturalist	1
Planner	1
Pilot	1
Projects Coordinator, NGO	1
Rural route carrier	1
Technical writer	1
Water plant operator	1

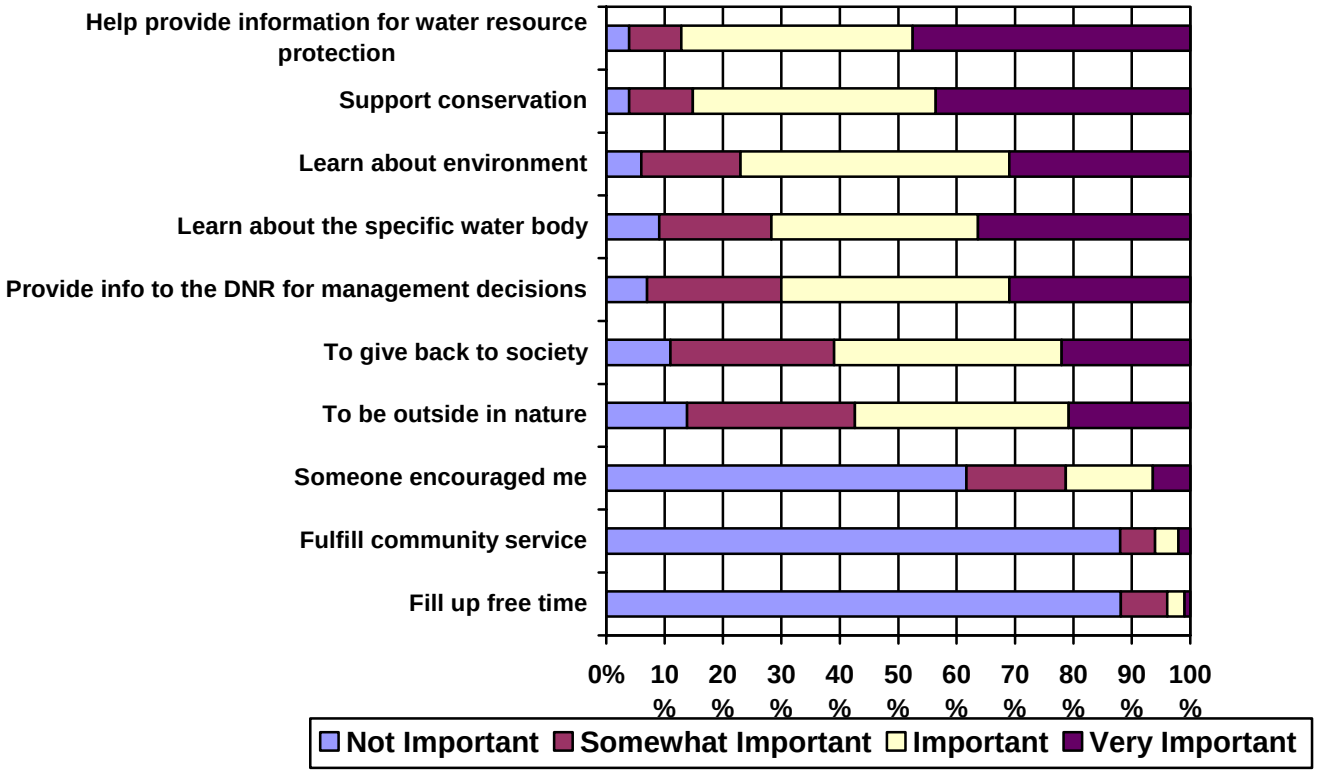
II. INITIAL MONITOR EXPERIENCE (N=334)

The following figures 5 – 7 correspond to survey questions directed at all respondents about their training experiences and decision to monitor following training.

- More respondents report being trained in years 2004 and 2005 than between 2001 and 2003. (fig. 7).
- When respondents were asked to report on the importance of ten possible factors leading to their decision to train, collective environmental reasons topped the list. Specifically the most important reasons were *to help provide information for better water resource protection* and to *support conservation in general*. The least important reasons were to *fill up free time*, *for community service*, or at the *encouragement of someone else* (figures 6a-6b).
- When the importance of these ten possible factors to train is examined according to whether the respondent has actually monitored a slight trend emerges. Those that have monitored report significantly greater importance of 4 of the 10 possible factors (fig.6b).
- Three-fourths of respondents have monitored since training.

5. Monitored Since Training	
Yes	75% (n=247)
No	25% (n=83)

6a. Importance of Reasons to Train and Possibly Monitor

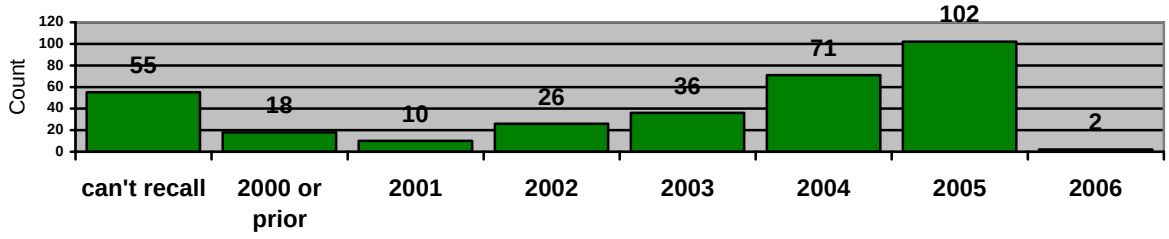


6b. Importance of Reasons to Train and Possibly Monitor (Values in Percent**)**

	Not Important	Somewhat Important	Important	Very Important
To learn more about the specific waterbody I would monitor	9	19	35	36
Monitors***	6	**20**	**36**	**39**
Non-monitors	**21**	19	32	28
To help provide information for better water resource protection	4	9	40	48
Monitors**	3	7	**37**	**53**
Non-monitors	**5**	**13**	50	33
To fill up my free time	89	8	3	1
Monitors	89	9	2	1
Non-monitors	88	5	5	1
To be outside in the natural environment	14	29	37	21
Monitors	12	28	39	22
Non-monitors	20	32	30	18
To give back to society	11	28	39	22
Monitors*	9	27	**40**	**25**
Non-monitors	**20**	**30**	35	16
To learn about environmental issues	6	17	46	31
Monitors	6	14	48	32
Non-monitors	7	25	41	27
To provide information to the DNR for making management decisions	7	23	39	31
Monitors*	5	22	**41**	**31**
Non-monitors	**14**	**26**	32	28
Somebody encouraged me to do so	58	16	14	6
Monitors	62	17	15	6
Non-monitors	58	13	21	8
To fulfill a requirement for a community service	88	6	4	2
Monitors	87	7	5	1
Non-monitors	92	4	1	3
To support conservation in general	4	11	42	44
Monitors	3	11	40	46
Non-monitors	8	11	44	37

*significant at p<0.05; ** significant at p<0.01; *** significant at p<0.001

7. Year Trained to Volunteer Monitor

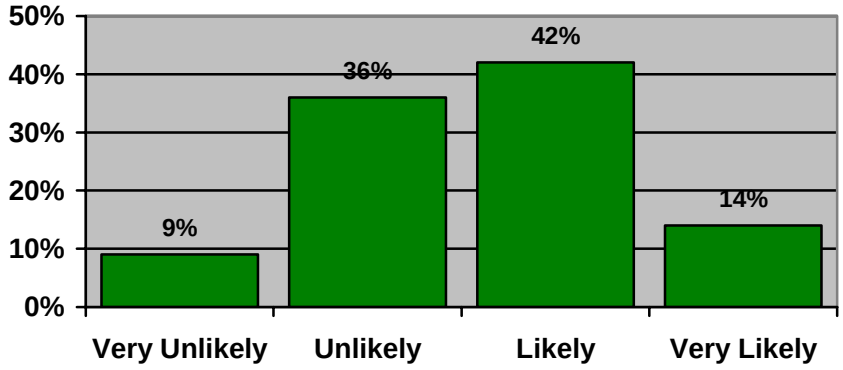


III. THOSE WHO NEVER MONITORED (N=83)

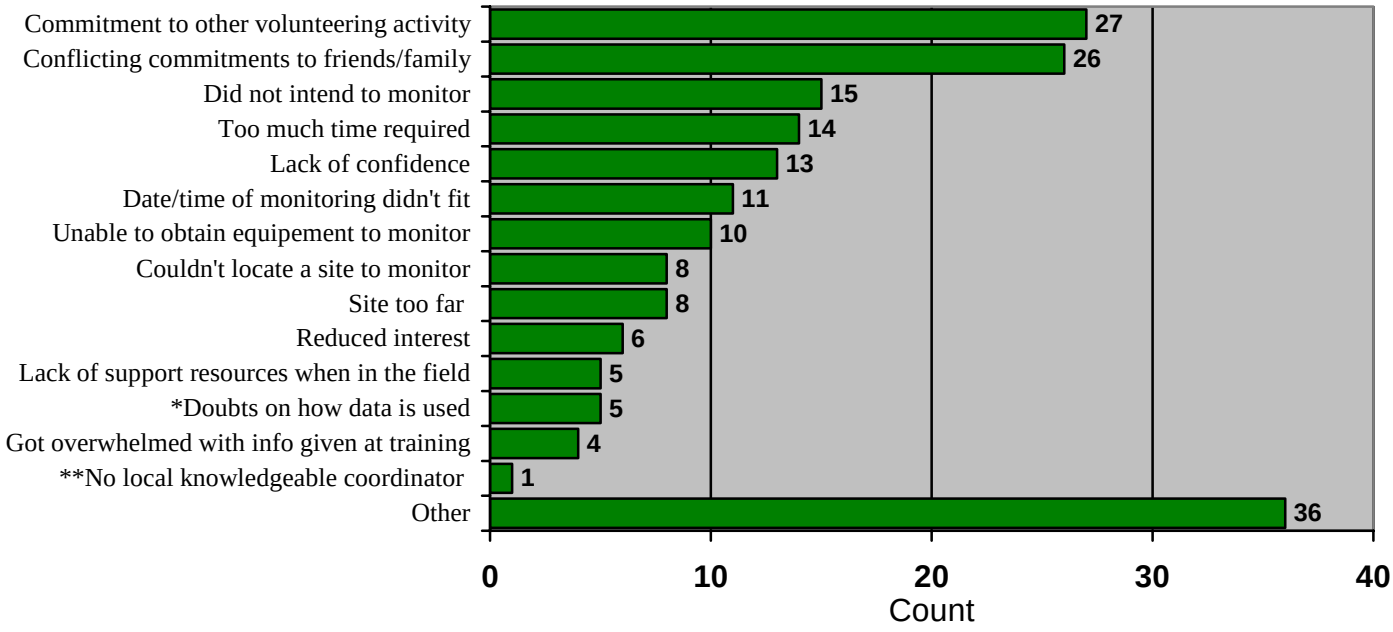
These figures (8 – 10) reflect survey responses from those who trained and have not since monitored. This group includes 83 respondents and is 25 percent of the total sample group. The questions focus on reasons why respondents never monitored and what possible factors would have increased their likelihood of monitoring.

- Of the respondents who have not monitored since training, a little over half report they are still likely or very likely to monitor in the future (fig. 8).
- When given 14 factors to explain why they have not monitored the most commonly cited reasons were other *commitments to volunteer activities* or *to family/friends*. Respondents also listed an array of other reasons that prevented them from monitoring, including procrastination and poor health (fig's 9a-9b).
- Respondents were asked how likely they would have been to monitor after training if 12 different situations had been present. For all 12 possible situations responses ranged from only 20-50% likely/very likely to have monitored. *One to two initial visits with an expert* and *being part of a team with shared duties* showed the most prospects with roughly 50% reporting they would have likely monitored. Other desired situations include *a set monitoring schedule* and *a local expert for support while learning*. Situations that most respondents stated would not have made a difference include *additional web resources, written methods for use while monitoring* and *fewer methods to learn at training*; only 25% would have been likely/very likely to monitor given these factors (fig's 10a-10b).

8. Likelihood of Future Monitoring



9a. Why Respondent Didn't Monitor



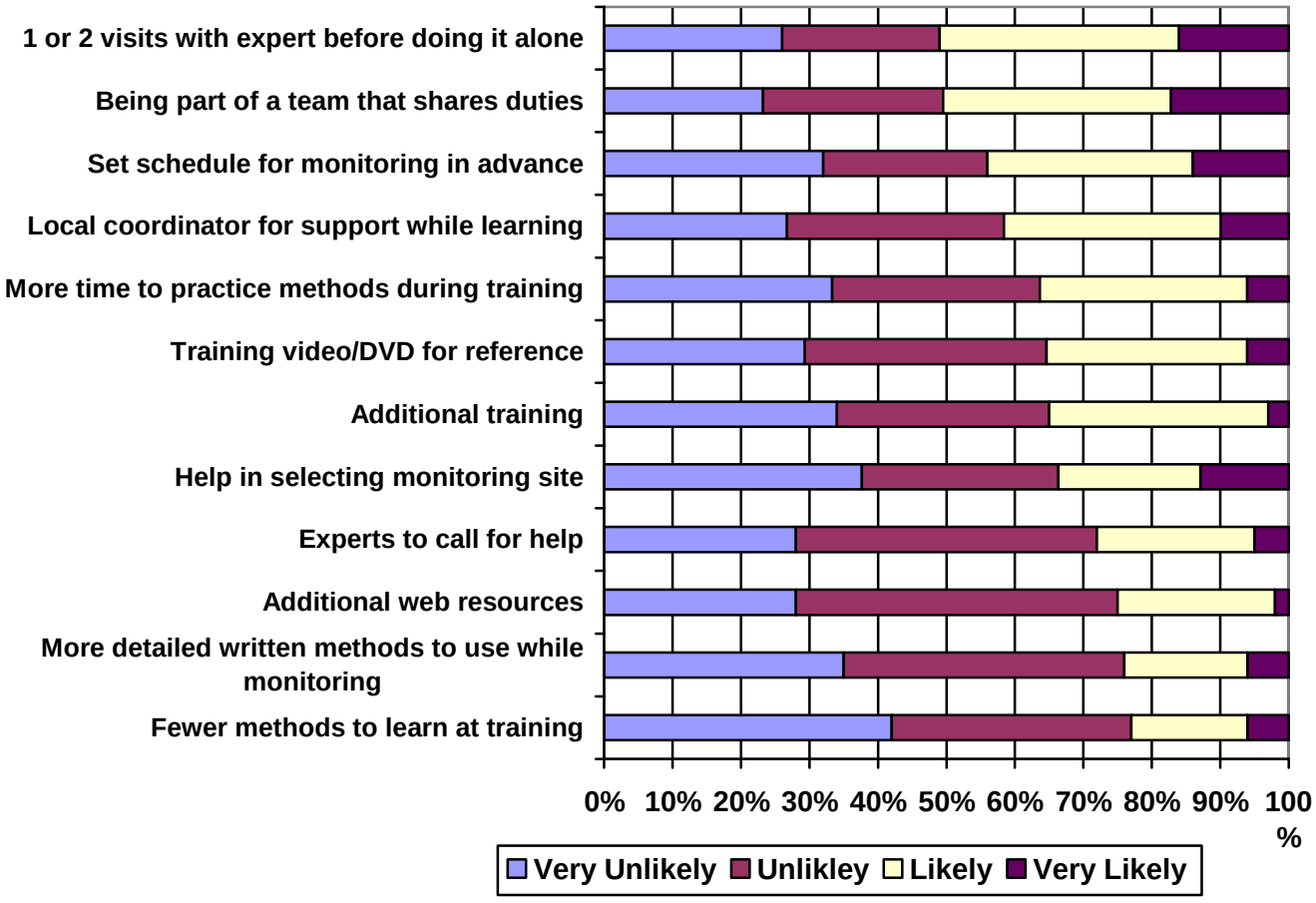
* The option "doubts on how data is used" was only offered on the paper survey, and the number of respondents who didn't monitor on the paper survey is 30, rather than the 83 total that didn't monitor. Thus data doubts may play more of a role than the above table suggests. This is supported by the high number of comments that focus on data relevancy.
** The option "no local knowledgeable coordinator to help" was only given on the web survey which had 53 respondents.

9b. "Other" Reasons for Not Monitoring	Comments
Procrastination / lack of commitment	3
Poor health / illness	3
Asked for a site or offered assistance, but no follow up	2
Increased family obligations	2
Waiting for Spring weather	2
Unable / too time consuming to organize group together	2
Job change / constraints	2
Moved out of state	1
Site had already been tested	1
A teacher that has students do the monitoring	1
No opportunity yet	1
Already do lake water testing	1
Looking to do it in a group	1
No schedule was set	1
Poor timing	1
Received equipment too late	1
Spent time with children doing informal monitoring	1
The sample and analytic methods are primitive	1
Training was too long, had to leave early	1
Time would be better spent setting up auto-monitor	1
Too many things to monitor at first	1
Waiting for DNR citizen monitoring program	1
Wanted to be a facilitator – introduced schools to monitoring	1

10a. Likelihood of a Respondent to Monitor after Training if the Following were Provided
(Values are percent of those who never monitored and responded to question, n=69)

	Very Unlikely	Unlikely	Likely	Very Likely
One or two visits with an expert before doing it alone	26	23	35	16
Being part of a team that shares duties	23	26	33	17
A calendar or set schedule for monitoring in advance	32	24	30	14
A local coordinator to support me while I was learning	27	32	32	10
More time to practice methods during training	33	30	30	6
Training video/DVD for reference following training	29	35	29	6
Additional training	34	31	32	3
More help in determining my monitoring site	38	29	21	13
Experts to call for help	28	44	23	5
Additional web resources	28	47	23	2
More detailed written methods to use while monitoring	35	41	18	6
Fewer methods to learn at the training	42	35	17	6

10b. Likelihood of a Respondent to Monitor after Training if these were Provided



IV. THOSE THAT MONITORED (N=247)

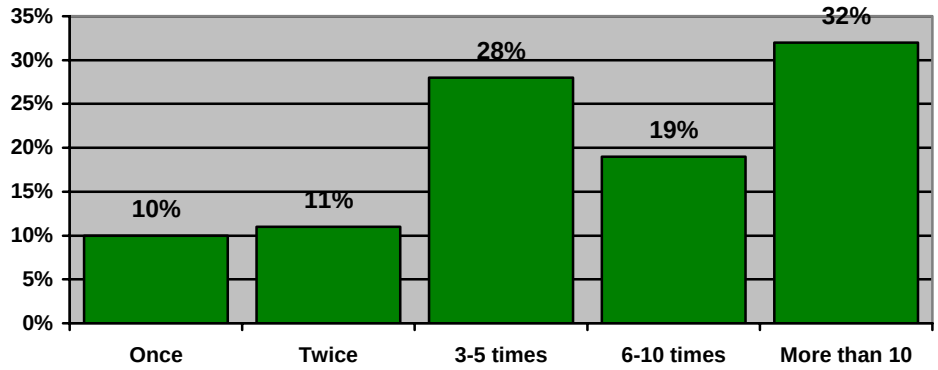
The following figures (11 – 17) address topics germane to the 75 percent that have monitored since training. These primarily include characteristics of the monitoring experience in addition to the confidence of data quality and monitors' assessments on why some do not monitor after training.

- Of the respondents that monitored, most have monitored 3 or more times and just over half have monitored over 6 times since trained (fig. 13).
- Numbers trained has steadily risen over the years, as well as the number of respondents monitoring in any specific calendar years. Sixty-eight percent of those who have monitored have done so in the last year (2005), and most plan to continue to monitor in the future – 84%. (fig's 12 and 14).
- Most respondents spent 1-2 hours monitoring on average. Only 10 percent spent 3 or more hours (fig. 15).
- Less than a third of those who monitored lived on the water they monitored (fig.11).
- High proportions of monitors are confident/very confident in the quality of the data collected for five purposes. *Educational purposes*, *local fieldwork*, and an *online public source* are uses that respondents were most confident in. Use by the *DNR* or *other experts for decision making* garnered slightly less confident responses, but still reflect overall confidence in these official decision making purposes (fig.16).
- When monitors were asked what they think prevents trainees from actually monitoring the responses overwhelmingly pointed to a lack of time. Other common suggestions include a lack of commitment, doubts on data relevancy and accuracy, difficulty accessing site or equipment and low confidence (fig.17).

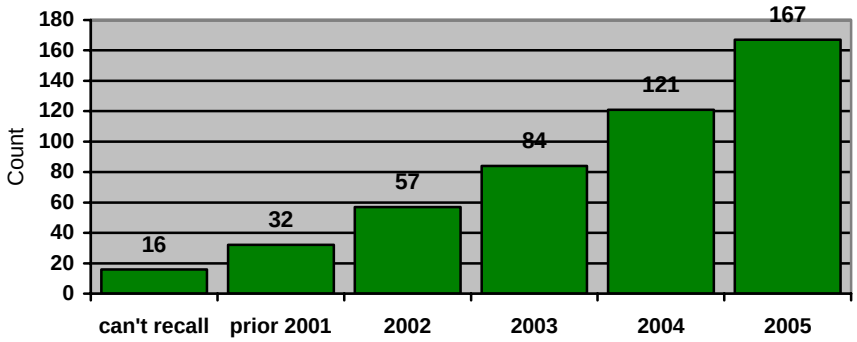
11. Live on Water Monitored	
Yes	29% (n=70)
No	71% (n=172)

12. Willing to Monitor in Future	
Yes	84% (n=211)
No	16% (n=39)

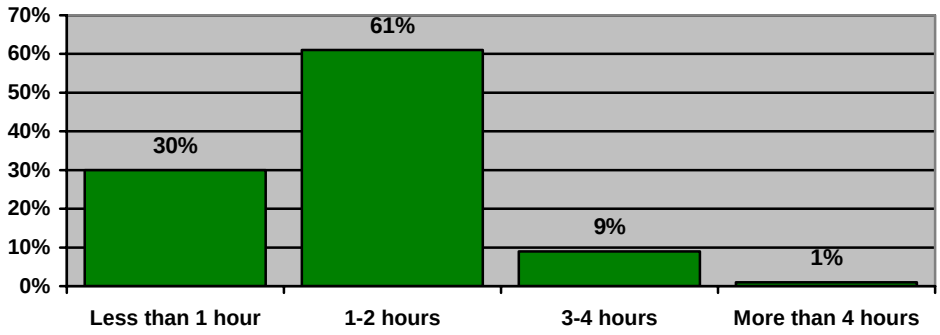
13. Total Times Monitored Since Trained



14. During which Years Respondent Monitored



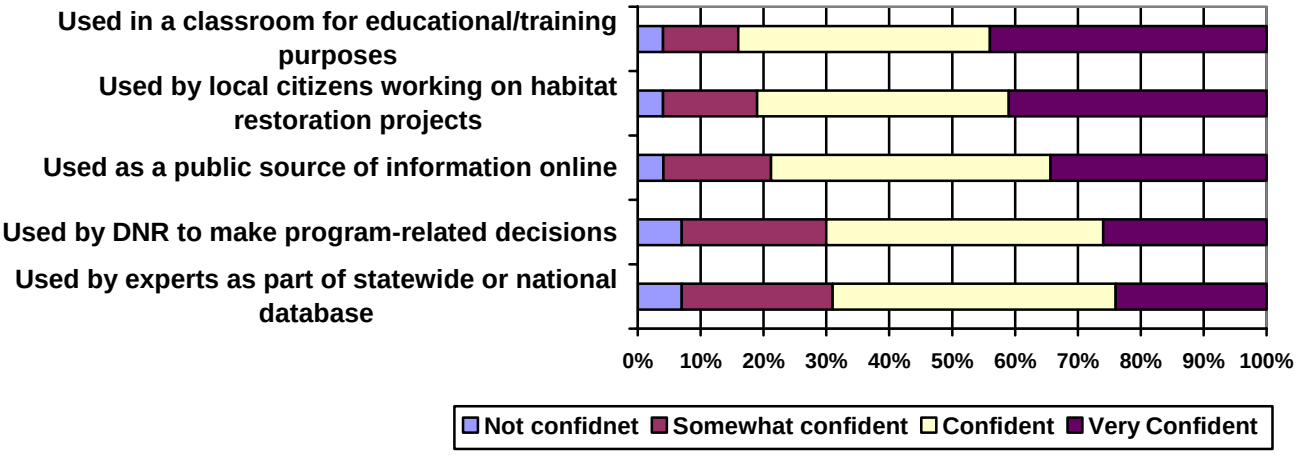
15. Average Time Monitoring a Site (excluding travel)



16a. Confidence that Data are of Sufficient Quality to be used in the Following Ways
(Values in percent)

	Not Confident	Somewhat Confident	Confident	Very Confident
Used in a classroom for educational or training purposes	4	12	40	44
Used by local citizens working on habitat preservation/restoration projects	4	15	40	41
Used as public source of information in an online database	4	17	44	34
Used by Department of Natural Resources to make program-related decisions	7	23	44	26
Used by experts as part of statewide or national water resources database	7	24	45	24

16b. Confidence that Data are of Sufficient Quality to be used in the Following Ways



17. Major Factors Preventing Trained Monitors from Actually Monitoring	Number Comments
Lack of time	124
Lack of serious commitment	19
Doubts on data relevancy / accuracy / use	17
Difficulty accessing water source site (most focus on legal access, a few mention physical access limitations)	17
Equipment inconveniences (i.e. cost, sharing, availability…)	16
Low confidence on procedures	15
Overwhelmed / too difficult	12
Teams are needed, but it's difficult to organize	10
Long distance to site	10
Weather	8
Difficult to schedule	8
Boredom, too repetitive, not advanced enough	7
Apathy about the environment	7
Program flaws: poor WAV leadership, no feedback, lack of management, poor DNR handling or poor training.	6
Knowledge background on related biology/ecology topics	4
Forgetting, not being reminded	3
Family / Health issues	2

Other Individual Comments (only one comment each):

- A lack of connection to a particular body of water
- For E.coli monitoring, the fact that samples had to be shipped for overnight delivery to respect holdings times made weekend and evening sampling undoable.
- Difficult getting the information on the website
- Fear of water
- Lack of proper water gear

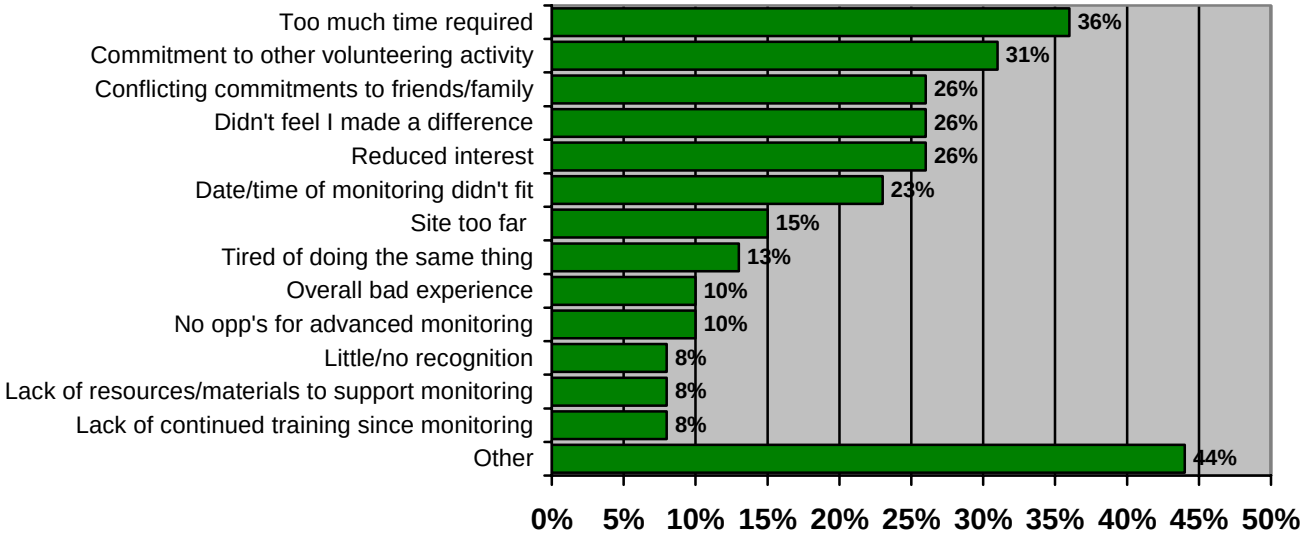
"Also, we were continually encouraged to do more tests, and I felt coerced into doing more. I offered to do the D.O. testing only, and that wasn't enough. The people doing the encouraging were either retired or it was part of their research relating to their occupation. I eventually got fed up and quit."

V. MONITORS UNWILLING TO MONITOR IN FUTURE (N=39)

The following figures 18 and 19 reflect responses by the 39 who have monitored since training yet do not plan to continue monitoring. This group represents 16 percent of current monitors. The questions examine a range of possible factors to explain why the monitor is unwilling to continue as well as possible situations that might change this low likelihood of continued monitoring.

- Of the current monitors who are not willing to monitor in the future, the most common explanatory factor selected was *too much time* required and *commitments to other volunteer activities.* Other frequently selected reasons include conflicting *commitments to friends/family, didn't feel it made a difference*, *reduced interest*, or *scheduling conflicts* (fig's18).
- When given 15 possible situations that might have made a respondent likely to continue, the responses overwhelmingly pointed to *quicker/easier methods*. Nearly half of those unwilling to continue monitoring stated given easier methods they would be likely/very likely to continue (fig's 19).

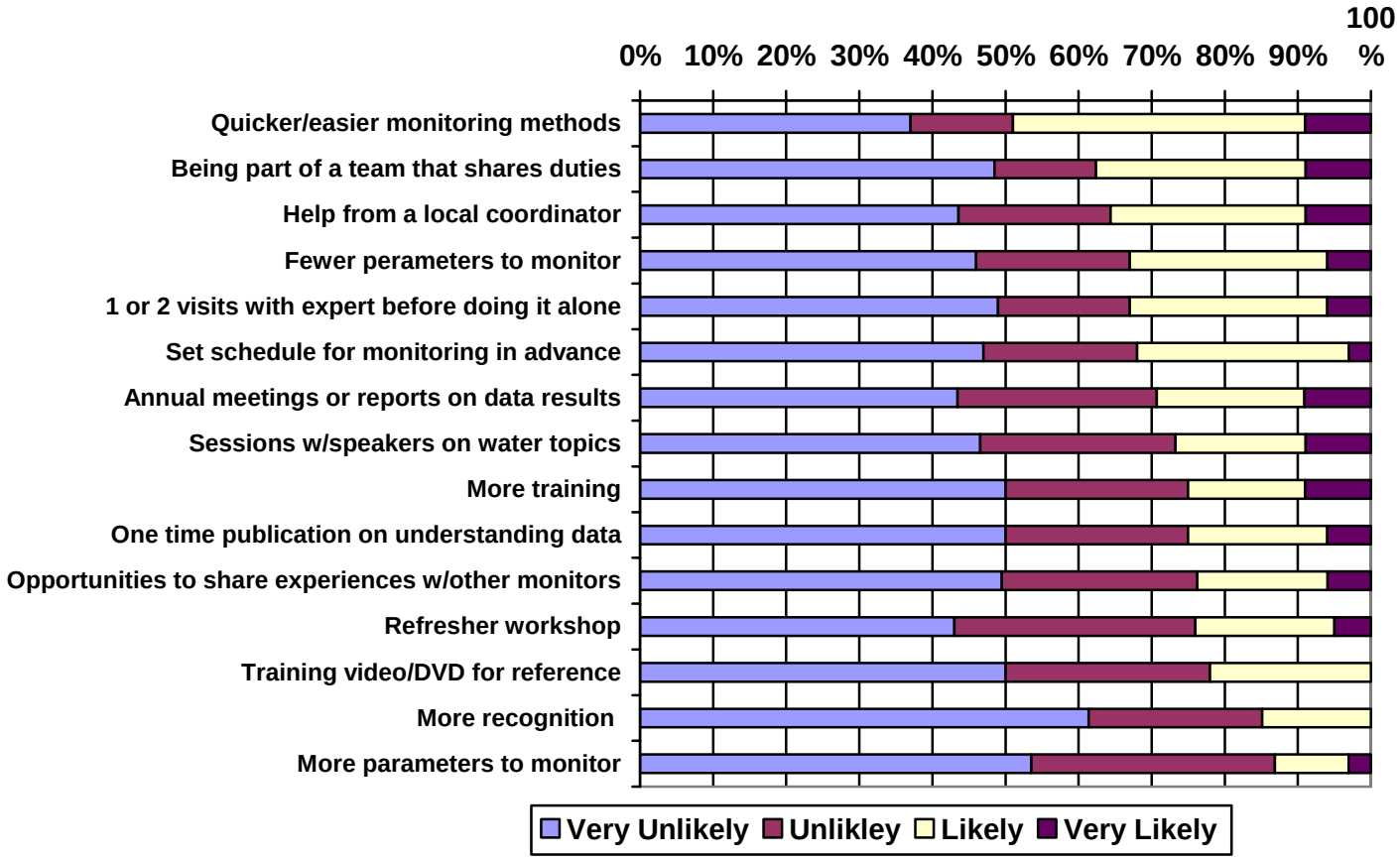
18a. Why Respondent Isn't Available for Future Monitoring
(percent of those unwilling to monitor)



18b. "Other" Reasons for Declined Continuation	
Increased work or other personal responsibilities	3
Group respondent monitored with was no longer interested / disbanded	3
Health	2
Program flaws (i.e. lack of follow up or support)	2
Moved out of state	1
Depressing water site	1
Too much special interest	1
No desire	1
Respondent felt taken advantage of	1

19a. Likelihood of Future Monitoring Given the Following:	Very Unlikely	Unlikely	Likely	Very Likely
Quicker /easier monitoring methods	37	14	40	9
Being part of a team that shares monitoring duties	49	14	29	9
Help from a local coordinator	44	21	27	9
Fewer parameters to monitor	46	21	27	6
One or two visits with an expert before doing it alone	49	18	27	6
A pre-determined calendar or schedule for monitoring	47	21	29	3
Annual meetings or reports about data results	43	27	20	9
Sessions with speakers about water-related topics and issues	47	27	18	9
More training to learn methods and procedures	50	25	16	9
One time publication about understanding data	50	25	19	6
Opportunities to share experiences with other monitors	50	27	18	6
A refresher / update workshop on monitoring	43	33	19	5
Training video/DVD for reference following training	50	28	22	0
More recognition and expressions of appreciation	62	24	15	0
More parameters to monitor	53	33	10	3

19b. Likelihood to Monitor in the Future if these were Present:

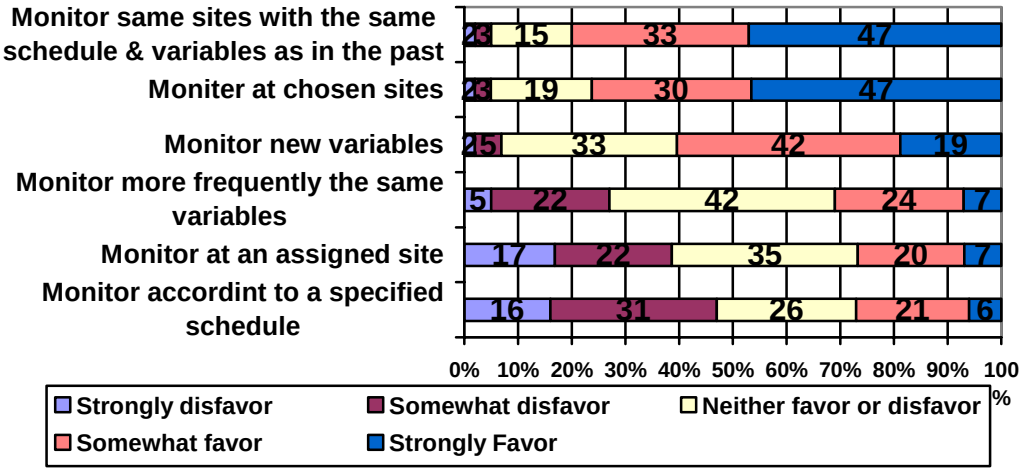


VI. MONITORS WILLING TO MONITOR IN FUTURE (N=211)

Figures 20 – 29 correspond to the 211 respondents who monitored and plan on continuing monitoring, 84 percent of current monitors. These questions not only include future monitoring characteristics such as distance willing to travel, but also the likelihood of sharing / purchasing equipment, reasons for continued monitoring, and the greatest continued training needs.

- While the majority of current monitors are willing to monitor in the future, the cited reasons for such decisions greatly vary. Most common are *general environmental concerns* and *interest in the specific water body to be monitored*. Enjoyment of being outdoors was more of a factor when identifying secondary reasons for monitoring (fig's 21a-21b).
- Most respondents continuing to monitor prefer to do so as before with little changes (80 percent). Seventy-seven percent prefer to continue monitoring at sites they choose (fig. 20).
- Half of continuing monitors desired additional training. Most of those desiring additional training requested a refresher or training on macroinvertebrate identification. Many respondents also stated training is only needed if there were new procedures / equipment on which to be updated (fig's 22a-22b).
- Those willing to continue monitoring also indicate a depth of commitment. Many state they would monitor year round over 6 times per year. Most are willing to travel up to 25 miles and quite a few beyond that. One to two hours per visit is what most are willing to commit (fig's 23-26).
- Just over half of future monitors are willing to share equipment and just over half of future monitors are unlikely to purchase equipment to monitor. However many continuing monitors indicate they have already purchased some equipment (fig's 27-28). Also note that those unwilling to share equipment are not necessarily the same respondents unlikely to purchase equipment. When examined, there was no correlation between these two likelihoods.
- The factors most likely to increase the chance that a future monitor will commit to three more years include *continued training*, *easier methods* and *feedback on data* (fig. 29).

20. Favor/Disfavor Future Monitoring Scenarios



21a. FIRST reason why Respondent is Still Willing to Monitor in the Future	# Comments
Contribute to environmental /conservation / water concerns	47
Concern for the specific water body (often by their residence)	44
Contribute to long term trend data and stream knowledge body	31
To encourage young persons to be environmentally active / part of teaching	20
It's necessary / important	19
It's fun	11
To learn about the stream / environment	9
Have the time / expertise / or ability to do it	7
Personal or professional interest	7
Doing it with a friend or group	7
Made a commitment	6

Other Individual Comments (only one comment each):

- Second level of training offered with data to be used in DNR database
- To gain data for a political mindset change in this country
- Maybe it will prompt WDNR to monitor illegal toxin pumping on lakeshore and elsewhere

21b. SECOND reason why Respondent is Still Willing to Monitor in the Future	# Comments
Contribute to environmental /conservation / water concerns	30
Contribute to long term trend data and stream knowledge body	29
It's fun	26
It's necessary / important	19
To encourage young persons to be environmentally active / part of teaching	18
Concern for the specific water body (often by their residence)	18
To learn about the stream / environment	16
Have the time / expertise / access/ or ability to do it	8
Volunteer / contribute to a greater cause	7
Doing it with a friend or group / socialize with like minded people	7
Personal or professional interest	6
Made a commitment	6

Other Individual Comments (only one comment each):

- Encourage others to do also
- To help to take mind off of other things
- Time spent in the partnership can be used as match dollars
- To find the truth
- NR 216 sediment requirements
- *"The shame I would feel following the intense hateful stares of my peers"*

"I am struggling with the question of why people make a disconnect between their own health, the environment, and their actions - and the interconnections between all these. So by doing this work, I feel that I am making some connection in my own life to the interconnectedness of all living things."

22a. Need Additional Training	
Yes	48% (n=96)
No	52% (n=103)

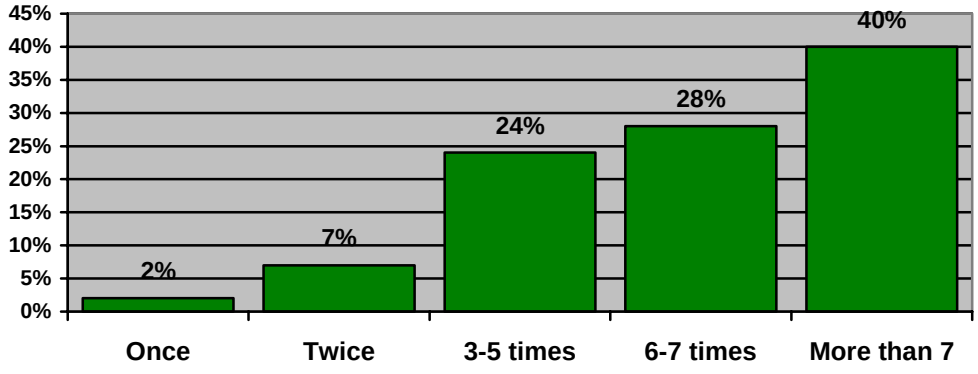
22b. Greatest Training Need (N=96)	Number Comments
General refresher	31
Macroinvertebrate identification	23
Upgrade: If new protocols, then training on updates	12
Dissolved Oxygen tests	6
Training on monitoring kits/ existing equipment	5
Chemical testing	4
pH levels	4
Data entry / analysis / interpretation	4
Need current written instructions, for use while monitoring, or on CD / DVD	4
One-on-one / site specific training	3
More sophisticated techniques (acceptable to the DNR)	3
Effective, accurate, and efficient monitoring	3
Grant-writing / funding for monitoring kits	2

Other Individual Comments (only one comment each):

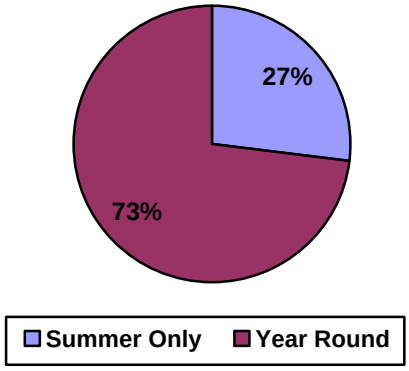
- Invasive plants
- Coliform bacteria monitoring
- Electronic monitoring
- Habitat identification
- Background affects on parameter variability
- Discussion on the plants and fish sometimes seen in sample nets.
- Stream bottom and core sampling
- Biotic index
- Flow meter
- New probes
- New variables

"I would just like a review with Kris Stepenuck again. She was a good instructor. She reviewed a lot of things for me, and I don't mind review on occasion. If she could schedule another training session in Bowler this summer, and if I could make the date she chose, that would be excellent."

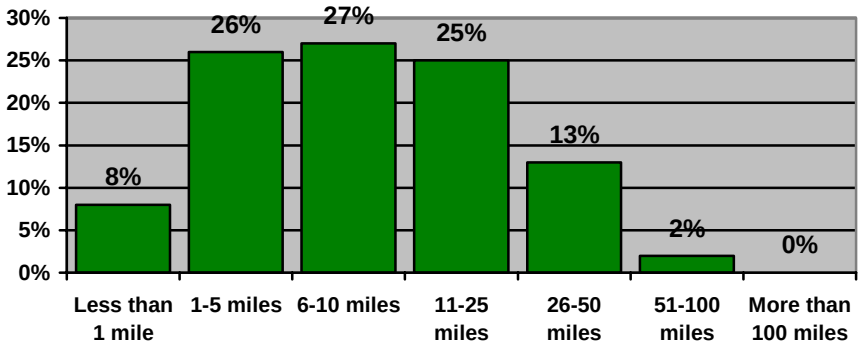
23. Times Willing to Monitor in One Year



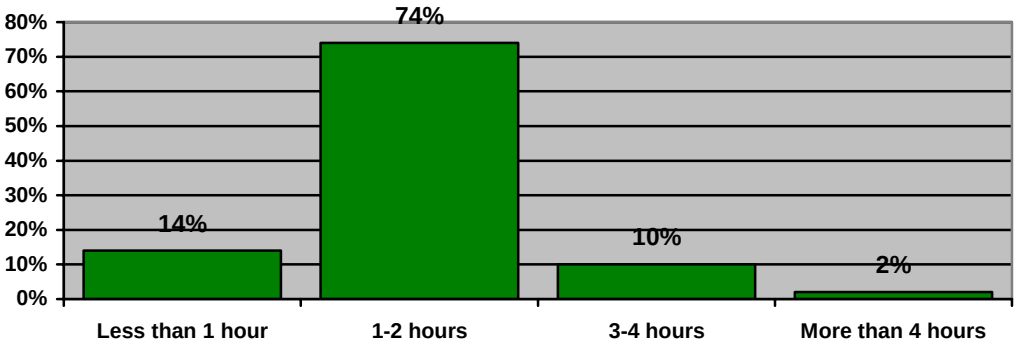
24. When Willing to Monitor



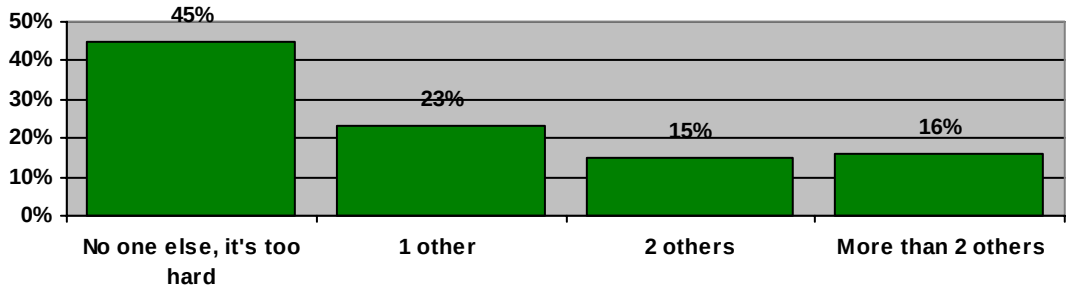
25. Distance Willing to Travel to Monitor
(Assuming one way monthly visits during summer)



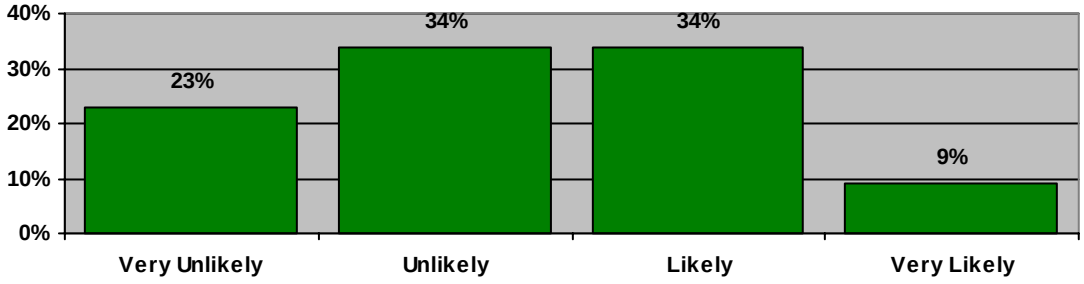
26. Time Willing to Spend Monitoring in One Visit
(excluding travel time)



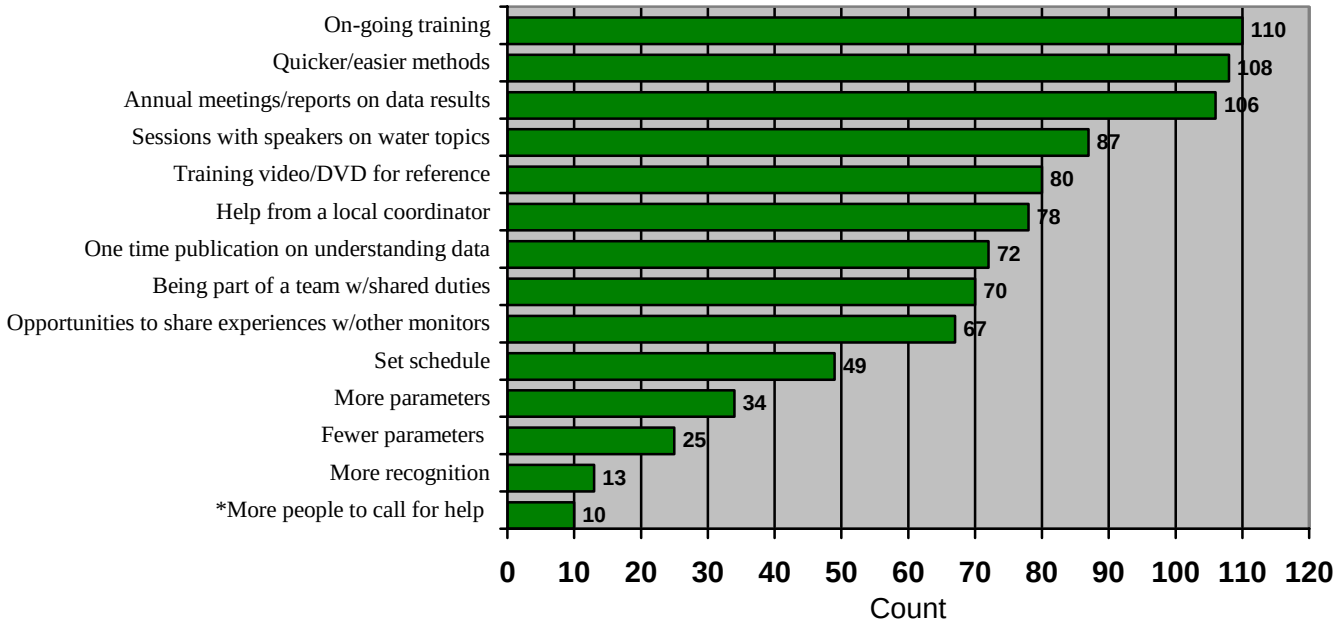
27. Number of People Willing to Share Equipment With
(Assume monthly summer visits & equipment 30 miles from home)



28. Likelihood of Purchasing Equipment if Needed to Monitor



29. Potential Influences on Respondents Making a 3 Yr Commitment to Monitor



* The option "more people to call for help" was only given on the web survey which had 136 respondents willing to monitor rather than the total 211 willing to monitor in the future. Thus people to call for help may play more of a role than the table suggests.

VII. ADDITIONAL WRITTEN COMMENTS

The survey provided opportunities for respondents to write comments. The additional comments generally confirm previously noted themes while emphasizing the youth education component that was not captured by structured questions. As the following summary table indicates, many respondents elaborated on why they stopped monitoring or stated general accolades of the stream monitoring program. There were also plenty of recommendations to the training and the monitoring process as well as calls for increased data feedback and application. Overall, comments were mostly positive. Comments also showed a dedicated and knowledgeable stream monitor group that highly regards the program, while considering stream monitoring an important activity with multiple rewards.

Additional Comment Topics	# Comments
Very Frequent Topics	
Reasons for stopping monitoring	58
Positive regards	51
Recommendations: equipment, practices and activities	43
Moderately Frequent Topics	
Reasons for why they monitor	30
Obstacles faced to monitor	22
Calls for the use of collected data	20
Benefits from monitoring	19
Less Frequent Topics	
Why respondent trained without intention to monitor	6
Recommendations: selective recruitment	5
Questioning quality of collected data	5
Other monitoring trainings developed from WAV's	2

SPECIFIC DETAILED COMMENTS:

Reasons for Stopping Monitoring	*# Comments*
Lack of time	24
Lacked an initial site visit or other follow up contact	7
Girl Scout troop / other youth lost interest	5
Too old to climb steep river banks	3
Couldn't get a group / partner formed to monitor with	3
Moved or traveling	2
Too cold out by the time ready to start / other weather issues	2
Too far to travel / gas expensive	2
Difficult equipment access	2
Group wasn't inclusive / didn't feel valued	2
Lack of confidence	1
Difficulty accessing site	1
Felt pressured to do more than was willing	1
Training scheduling conflicts	1
Wanted automated equipment to do the routine work	1
Family health problem	1
Waiting for kids to grow up and help	1
Too many similar volunteer commitments	1

"We chose our stream from a choice of streams in [edited location for privacy]. We chose one closest to the city of [edited location]. I was hoping for part of the [edited] River, or a stream going to the river. Instead we got a stream in a new development area, with a "Kwik Trip" across the street, that was all but dried up. There was no or almost no life in it. The developers had killed it. Pissed me off and I quit! Now I protest on Sundays and volunteer at the "wildlife in need center". At least I can do some good."

Positive Regards	***# Comments***
Monitoring is enjoyable and rewarding / great program	37
Very thorough training	8
The people are great: Kris Stepenuck, Frank Fetter, Mike Miller & TU	5
Very necessary program	5
Appreciate the annual update letters	1

Recommendations: Equipment, Practices and Activities	***# Comments***
Additional follow-up training / refresher	9
Simpler ways to monitor, esp. O2	4
Need better scheduling – fixed but flexible	3
Need more group monitoring	3
More interactions between fellow monitors & coordinators	3
Simplify data entry, & easier to share	3
Access to stream flow gauges – even just loaners	2
Modern automated equipment	2
Need data feedback	2
Need younger energetic monitors	1
Start new monitors with experienced ones	1
Don't need individual equipment sets –can share	1
Minimize cost of equipment for monitors to purchase	1
Equipment sharing only appropriate within short distances	1
Need a good write-up of duties and timelines	1
Inform residents near stream to be monitored – reduce suspicion & difficulties	1
Protocols for a broader range of streams to help with site specific challenges	1
Benchmark data to use for comparisons	1
Macroinvertebrate scale formula too simplistic	1
More chemical tests	1
Need to initially emphasize if monitoring is stream exclusive, or also lake	1

"I think a more effective way to retain volunteers would be to organize a small group monitoring session after the training, say with an experienced coordinator and 2-3 volunteers, just to make sure the volunteers are comfortable with the procedures and monitoring locations."

"If you could make all the equipment so it would fit in the handle of a fishing pole that would solve everything."

Reasons for Why They Monitor	***# Comments***
To do with Girl Scout Troop / class	13
Learn how to educate others / in curriculum	5
It is important / contribute to resources	5
Gain knowledge	3
Concerned about specific river	3
Enjoy the outdoors / water	2
Trout Unlimited member	1
Committed to help DNR	1

"The most important reason I decided to be trained was to gain knowledge and to make environmental issues factual instead of emotional"

"I found it so interesting because of the motivation and interest generated by my students when doing real and meaningful science and because of the contribution we are providing for management of our recourses."

Obstacles faced to monitor	***# Comments***
Time	4
Equipment access / sharing	3
Difficult site	3
Difficult to schedule with partner / group	2
Lack of close stream	2
Cumbersome methods, esp. DO test	2
Run-ins with close property owners	1
Difficult to register site and locate site coordinates	1
Local politics once reported illegal tree cutting	1
Mosquito problem	1
Not interesting	1
Difficult reporting data	1
Physically difficult	1

"Months passed before the needed equipment was brought, then it took awhile to remember how to do the test."

Calls for Use of the Collected Data	***# Comments***
Need feedback to understand that data are used & how	11
Needs valuable application and policy relevance	9

"I was disappointed to learn recently that our WAV data is considered by DNR to be of no use. Maybe I forgot if I'd heard this. I'm not doing this to merely entertain myself."

Benefits from monitoring	*# Comments*
To engage students / young people	12
Learning is an initial step to caring	3
A new perspective	1
To benefit nature	1
Meeting interesting people	1

"People become much more concerned about issues affecting them when they have some understanding or experience with the subject."

Why Respondent Trained Without Intention to Monitor	*# Comments*
Trained to pass knowledge to students	6

"I went to the training so that I knew what the program was about, and so that I could pass information on to my students."

Recommend: Selective Recruitment	*# Comments*
Get youth involved	5

"More emphasis on getting schools to have groups do local monitoring: insures the job gets done, develops attitude in kids in protecting the waters."

Questioning quality of collected data	*# Comments*
No quality control / questionable data	3
Monthly monitoring is not statistically valid	1
Sampling and analysis primitive	1

"As a former WQ professional, I understand that volunteer data is, at best, unpredictable."

Other Subsequently Developed Monitoring Trainings

"CWTU has its 2006 WAV training at the Green Lake High School April 29, 2006. Chad Cook and Vickie Wall will be making presentations, we hope to have 40 people attending"

"I was not planning on doing monitoring when I took the class. I planned on setting up a monitoring program in our area and having some monitoring done by our staff at the wastewater plant. They are doing that and we recently held a class at UW-Superior and had 14 interested citizens."