

## **Upper Thornton Watershed Landowner Survey**

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Beverly Hunter <bev\_hunter@earthlink.net>

On January 30, 2006, RappFLOW volunteers mailed 998 surveys to all known addresses of residents and landowners in the Upper Thornton River Watershed, identified by one of thirteen subwatersheds. Respondents were offered a free aerial photo of their property as an incentive to return the survey.

The survey instrument itself is available on the RappFLOW web site [www.rappflow.org](http://www.rappflow.org).

This report provides a summary of 162 filled-in surveys – a response rate of a little over 16 percent. Also suggested here are some questions for further analysis. Comments and questions are welcome.

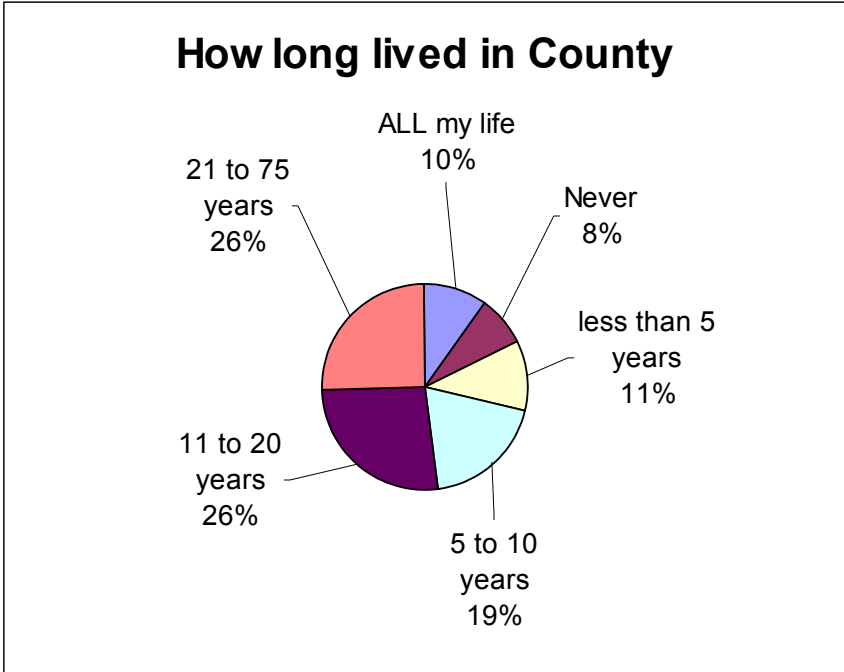
### **What are the purposes of the survey?**

1. Learn from residents and landowners what are their interests and concerns about their local watersheds. RappFLOW will apply this information to its assessment of the 13 subwatersheds in the Upper Thornton Watershed.
2. Determine priorities for RappFLOW volunteer efforts based on the concerns and knowledge of a broad spectrum of citizens.
3. Provide information to county leaders about the concerns and priorities of a broad spectrum of citizens with regard to watershed protection and health.
4. Expose citizens to watershed and water quality concepts and issues, and identify needs for public education regarding these issues.
5. Encourage a broad range of citizens and community leaders to become more engaged in watershed management activities and practices.

This work is supported in part by the National Fish and Wildlife Foundation and 15 partner organizations. For more information please see [www.rappflow.org](http://www.rappflow.org)

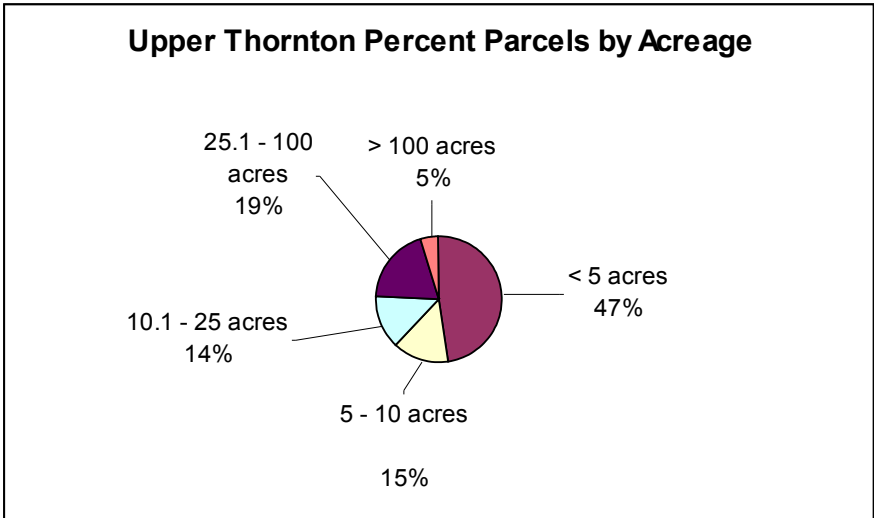
### **Who completed the survey?**

Respondents to the survey provide a good spectrum in terms of whether and how long they have lived in Rappahannock County. As shown in the following chart, 36 percent have lived here either “all my life” or over 20 years. For about 25% of the parcels in the Upper Thornton, the land owners’ mailing addresses are outside of Rappahannock County (surveys were sent to those addresses). However, only 8% of survey respondents said they had “never” lived in the County. Hence, the survey respondent sample is somewhat weighted towards those who do live in the County.



**Land Area Represented in the Survey**

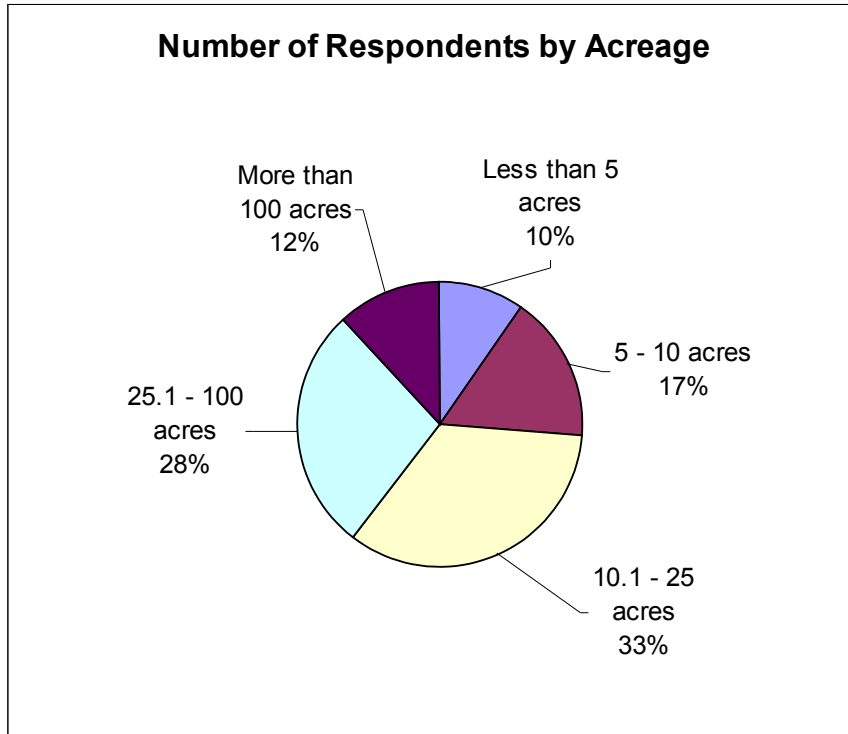
In the Upper Thornton River watershed there are about 43,300 acres (excluding Shenandoah National Park) in about 1885 parcels. The survey respondents as a group own or live on over 10,614 acres of land, or about a fourth of the total privately held land. The following chart shows the approximate percentages of the total privately held land, in parcel size groupings:



Source: 2005 Rappahannock County Real Estate Database

The respondents represent different sizes of land holdings, from a small lot in a village to a 1,000 acre farm and all sizes in between, as shown in the chart below. In general, the survey respondents represent a greater proportion of larger parcels than small ones. Only

ten percent of survey respondents own or live on parcels smaller than 5 acres, whereas in the overall watershed 47% of the parcels are less than five acres. On the other hand, 12 percent of survey respondents own or live on more than 100 acres in the Upper Thornton, whereas only 5 percent of the total parcels are greater than 100 acres. For purposes of this survey, it is helpful to have a substantial representation of larger land owners, since their interests and land management practices have the greatest impact on watershed health.



Eighty-two percent of the respondents have at least one stream on their property; 38 percent have ponds.

**Does participation vary by subwatershed?**

As shown in the following chart, the rate of participation in the survey varied widely among subwatersheds.

subwatershed	# surveys sent	# responses	Percent response
Piney	9	5	55.56
Five Forks	87	27	31.03
Upper Rush	56	16	28.57
Lower Rush	117	32	27.35
Upper North Fork	18	4	22.22
Keyser Run	55	11	20.00
Beaverdam	43	7	16.28
Upper Thornton	49	8	16.33
North Fork	97	14	14.43
Middle Rush	134	17	12.69
Walnut Run	67	7	10.45

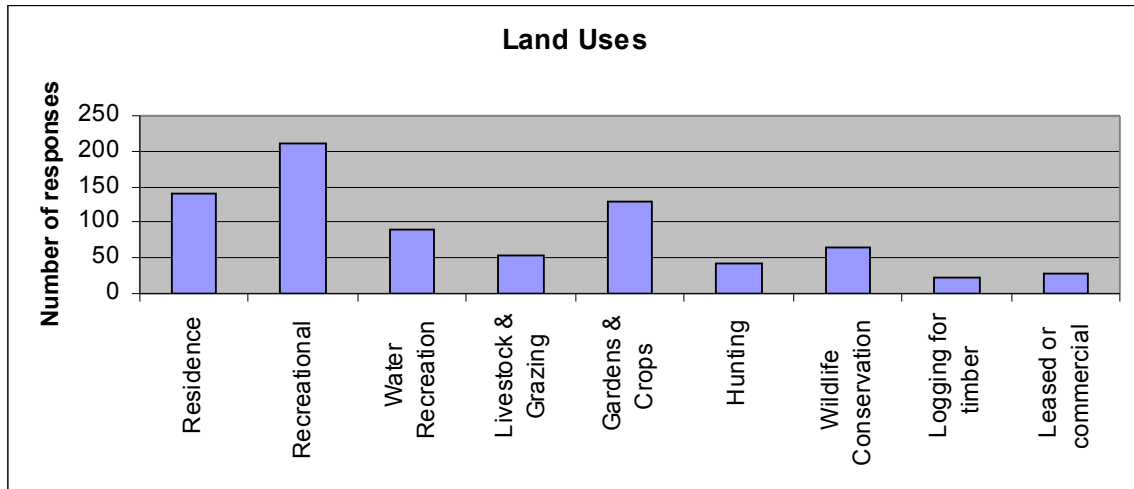
Covington	39	4	10.26
South Fork Thornton	156	9	5.77
Racer Run	19	1	5.26
Big Branch	50	0	0.00
<b>All</b>	<b>998</b>	<b>162</b>	<b>16.23</b>

**How do respondents use their land?**

The survey lists 17 possible land uses and asks respondents to check all that apply to their property. The three most frequently checked uses are Residence (136), Gardens for personal use (111), and Family recreation (103). Only 14 respondents reported “Growing crops for sale;” 23 reported “Raising animals for sale or commercial use;” 30 listed “Grazing.” Eight wrote in “making hay” as another use.

The 30 respondents who use their land for grazing represent over 63% of the acreage in the survey (6352 acres), although they represent fewer than 20% of the total respondent group. Eight of these respondents said they had lived here “all my life.” Only four of this group have lived here less than ten years.

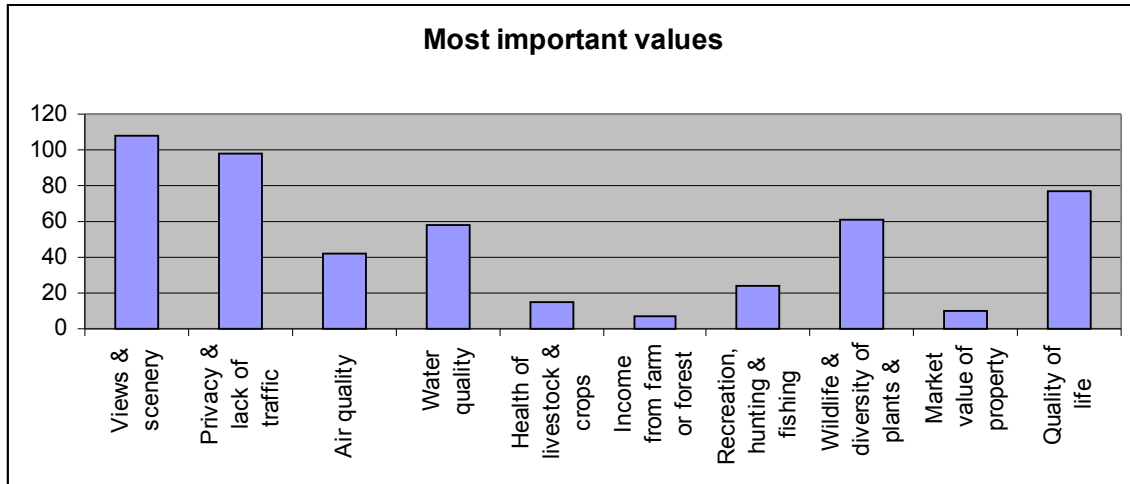
The chart below shows the total number of responses for categories of land use. “Recreational” includes horseback riding, hiking, biking, and family recreation. “Water Recreation” includes fishing, boating and swimming.



**What do we most value in our watershed?**

The survey offers 17 answers for what a person values the most in their watershed, and asks respondents to check the THREE most important to them. Scenery (82), Privacy (77), and Quality of life (77) are the three answers most frequently chosen by respondents. Income from farm (7) or Income from forest (1) were chosen as highest priority values by very few respondents.

The chart below shows the total number of responses by values grouped in categories.



### What water issues concern us the most?

The survey offers 12 water issues of possible concern. Out of these, quality and/or quantity of drinking water is the most important issue to the most people. Water for livestock is a major concern to only eight percent of respondents. Need to clean up Chesapeake Bay is a major issue for 22 percent of respondents.

The first 157 respondents answered question 7 in the following way:

### Question 7: Three water issues that concern me the most are the following:

Answer choice	# out of 157 choosing
b. quality of well water	95
a. adequate supply of good drinking water	83
h. bacterial contamination of stream water	56
g. trash in the streams	40
i. need to help clean up the Chesapeake Bay	35
j. nutrients (nitrogen and phosphorus) in streams and ponds	31
f. stream bank erosion	30
k. loss of fish species in waterways	26
e. sediment in streams and ponds	19
d. floods	18
c. sufficient water for livestock	13
i. algae in ponds	7

### What are the highest priority threats to our watershed?

The survey offers 19 threats to the watershed, and asks respondents to choose the THREE that concern them the most. The three threats of most concern to the most people include: Population growth (32%); Subdivision of land parcels (32%); and Public sewage treatment plant discharge to streams (29%). More than a third of respondents to question 7 said that “bacterial contamination of stream water” is a major issue, but fewer than 10% said in question 8 that livestock in streams and ponds is a major concern to them, and

lack of forested buffers along streams and ponds is a most important threat to only 17 respondents.

The first 157 respondents answered question 8 as follows:

**8: Three threats to my watershed that concern me the most are:**

Threat	# choosing (n = 157)
m. subdivision of land parcels	51
l. population growth	50
b. public sewage treatment plant discharge to stream	45
e. pesticides and herbicides	41
a. septic tanks & other private sewage disposal	31
k. commercial development	27
g. loss of farms	25
n. agricultural runoff (nutrients)	21
s. invasive species	20
c. erosion and sedimentation from driveways and private roads	20
i. conversion of forests to other land uses	19
p. lack of forested buffers along streams and ponds	17
f. livestock in streams and ponds	16
d. stormwater runoff	15
h. clear cutting of forests	15
j. traffic	11
q. stream bank erosion	11
o. residential runoff (nutrients)	6
r. wildlife in streams and ponds	3

The responses reveal a need and opportunity for education regarding the relationships between riparian buffers and those issues that most concern people, such as clean and plentiful drinking water and bacterial contamination of stream water. The major concerns about population growth and land subdivision provide good opportunities for public education about conservation tools such as easements. The major concern about public sewage treatment plant effluent to stream, in contrast to low concern about lack of riparian buffers, provides good opportunities for education regarding STP effluent versus impact of land use practices.

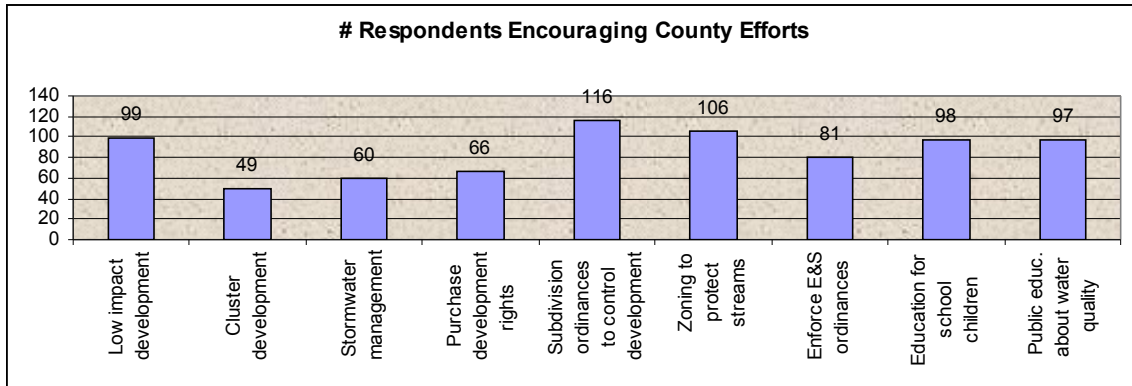
**Do we support public expenditures on watershed protection and restoration?**

“I support expenditures of public money on watershed protection and restoration.” This statement was answered by 144 respondents. Of these, 92 percent answered “yes.”

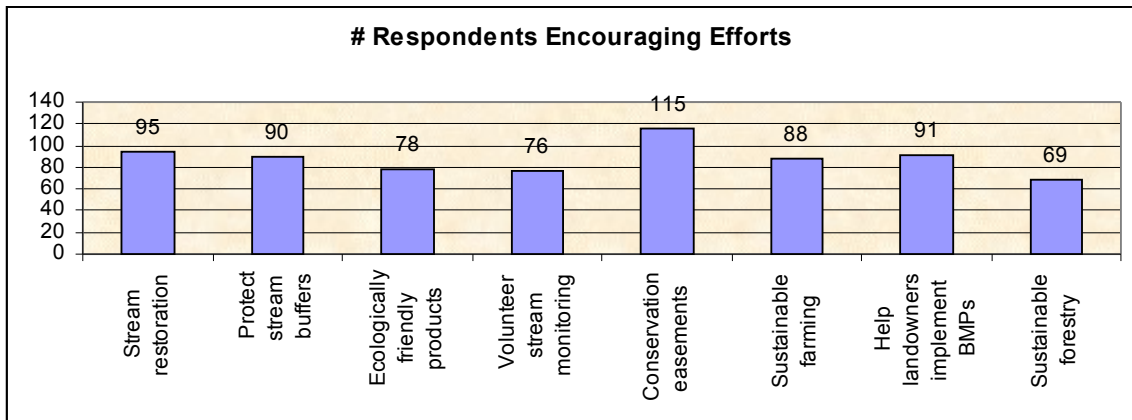
**What individual and community efforts do we encourage?**

The survey offers 18 possible individual and community efforts on watershed protection. Respondents checked all items they encourage. Nearly all (153) respondents to the survey checked at least one of these items. The following chart shows the number of respondents who encourage certain efforts that are now or might be supported by our

county government. Ordinances and zoning were chosen by even more respondents than were education items. Cluster development was selected by fewer than a third of the respondents.



The following chart shows the number of respondents who encourage efforts typically undertaken by landowners with assistance of governmental or volunteer organizations. Seventy-five percent (115) of respondents encourage conservation easements, which is consistent with the concerns about population growth and subdivision of land parcels in question 8.



**Plans for further analysis and interpretation.**

The respondents to the survey represent a good spectrum of longevity in the county and size (acreage) of land holdings.

Partner organizations, such as RappFLOW, RLEP, RCCA, PEC, county planning commission, are invited to join a working group to distill the implications of this survey for their organizations’ activities and missions.

The results can be tabulated by subwatershed, to see if there are patterns of participation, values, issues, threats that are specific to individual subwatersheds. Results by subwatershed will be incorporated into the Upper Thornton Watershed assessment.

We incorporated the survey results for the Lower Rush subwatershed plan and assessment.

We invite volunteers to write interpretive reports on the survey and publish them on the web and in the Rappahannock News.

RappFLOW leaders and volunteers will discuss the findings and their implications for our strategic plan and priorities for future work.

If the findings of this survey appear to warrant the investment, we may revise and improve the survey instrument and conduct the survey county wide.

We will make the survey instrument available to other similar communities in Virginia.

The surveys themselves are anonymous. However, about 100 respondents requested aerial photos of their property. We will follow up to invite them to participate in future watershed related activities.