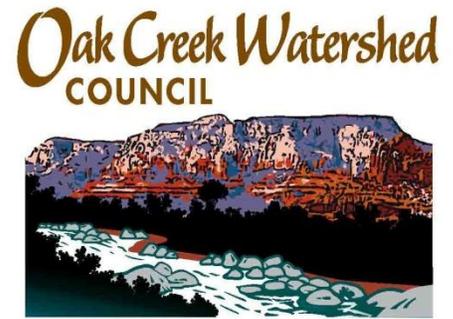


March 24, 2012

To: Members of the Oak Creek Watershed Improvement Commission (WIC)

From: Barry Allan, OCWIP Grant Administrator

Re: Oak Creek Watershed Social Survey Results



In late December, 2011 we sent the Oak Creek Watershed Residents' Survey to you all for review and final comments. We also asked if you had the time, to fill out the Survey and let us know how long it took you to complete. Your feedback was invaluable and confirmed we needed to allow 15 minutes for residents to fill it out.

On February 9, 2012 we mailed 1,224 copies of the Oak Creek Watershed Residents' Survey through our distributor Hansen Light Works in Sedona. On March 20, 2012 we ended receipt of the Surveys from residents after entering the data from 265 replies or 21.6% of those sent out.

Methods used to create 10% random sample of addresses within the Oak Creek Watershed:

We used the parcel data provided by Coconino and Yavapai counties earlier in the project, and selected all parcels within the watershed boundary using a spatial intersection between the outline of the watershed and the map of parcel boundaries. There were 14,802 properties.

From the parcels within the watershed, we removed all parcels that did not contain information about the owner, and then removed all banks, credit unions, city properties, county properties, fire district properties, mortgage companies, and churches. We did not remove LLCs, trusts, or associations, but took a subset of all the owner addresses within Arizona, removing all international and out-of-state owners. The net total was 12,241 addresses.

We then randomized the entries using Excel's RAND() function, generating random numbers and then removing the formula to convert the random numbers to values. The random numbers were sorted, smallest to largest, and the first 1224 entries selected to provide a 10% sample.

Prior to sending the list for distribution, we edited the names of owners to remove legal terminology such as the dates trusts were created. (Eg: An owner name listed as "Evans Jack Mercer & Marcia Anne Trustees ; Evans Jm & Ma Rvcbl Liv Trust Dtd 2/2/07" was reduced to "Evans Trust" for mailer purposes.)

The letter accompanying the Survey:

January 31, 2012

From: Barry Allan, Executive Director

Oak Creek Watershed
COUNCIL



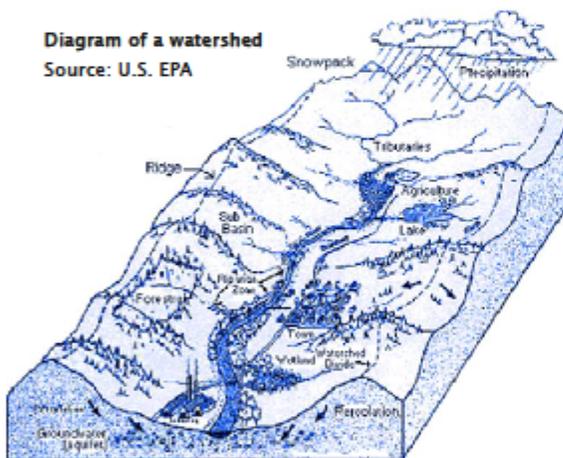
Dear Oak Creek Watershed Resident...

Oak Creek is the 50 mile thread that weaves together the fabric of our watershed community, as well as being vital to its economic, recreational and natural future. The Oak Creek Watershed Council is committed to preserving the integrity of Oak Creek and recognizes that its stewardship must be a part of the watershed community culture.

Funded by a grant from the Arizona Department of Environmental Quality (ADEQ) and the United States Environmental Protection Agency (EPA) our group has submitted a draft of the Oak Creek Watershed Improvement Plan, which will be ready for public review very soon. The Plan identifies problems associated with the impairment of Oak Creek by the fecal coliform *Escherichia coli* (*E. coli*), as well as solutions to those problems.

Diagram of a watershed

Source: U.S. EPA



We need your help discovering how best to inform other members of the public on ways to protect Oak Creek, and the health of people who recreate in it. Your household has been randomly selected to represent the view of Oak Creek watershed residents. This survey is designed to obtain residents' opinions on human behaviors that affect water quality. It will be used to guide projects to improve water quality in Oak Creek, and its five tributaries.

The enclosed survey takes approximately 15 minutes to fill out. Please take the time complete it, then fold and staple or tape, and return to the Oak Creek Watershed Council.

We highly value your opinion, and it matters a lot to us! Your time is very much appreciated, and every survey we receive back helps Oak Creek. Thank you for your participation!

For more information about how you can help protect Oak Creek please visit our website at www.oakcreekwatershed.org. We also sponsor a website for visitors to Oak Creek Canyon at www.oakcreekcanyonaz.org in which we promote good stewardship and outdoor protocols.

Look for information on safe-guarding the water quality in Oak Creek through the Oak Creek Community Outreach Program in the spring of 2012 through radio, television, newspapers, as well as community groups. Your ideas at work along with hundreds of other watershed survey residents. *Together, we ARE making a difference!*

P.O. Box 732, Sedona, AZ 86339 • Tel: (928) 554-5460 • www.oakcreekwatershed.org

The Oak Creek Watershed Residents' Survey (2 pages) and Map of Watershed Zip Codes follows:

Oak Creek Watershed Residents' Survey

1) **Of the following, which best fits your definition of what a watershed is?**

- Area that retains water like a swamp or a marsh
- Water intake area that feeds a water treatment plant
- The area of land where all of the water that drains off of it goes into a single creek, river or other water body
- None of the above
- Don't know

2) **How concerned are you with the health of the Oak Creek Watershed?**

- Not concerned Somewhat
- Concerned Very concerned

3) **How many times a year do you visit/recreate along Oak Creek?**

- Never 1-5 6-10
- 11-15 16-20 20+

4) **What activities do you undertake while visiting Oak Creek? Please mark all that apply.**

- Hiking Camping Fishing
- Swimming Biking Dog walks
- Equestrian Other:

5) **Which is the most important source of information affecting your perception of the Oak Creek Watershed's health?**

- Personal observation

- Newspaper Radio Internet
- State or federal reports
- Local environmental groups

6) **What sources do you think are the biggest contributors to creek contamination that can cause human illness? Please number 1, 2 and 3 for your top choices.**

- Litter Dog feces
- Baby diapers Human feces
- Wildlife feces Livestock waste
- Septic systems Don't know
- Waste water treatment plants
- Other (specify)

7) **Are you a pet owner? If no please go to question 10.**

8a) *If so, does/do your pet(s) go outside?*

8b) **Do you clean your yard of pet waste?**

9a) **Do you own a dog? If no please go to question 10.**

9b) **Do you walk your dog in the Oak Creek Watershed?**

9c) **How often do you pick up your dog's waste when on a walk?**

- Never Rarely Sometimes
- Most of the time Always

9d) **If you pick up dog waste, how do you dispose of it?**

- Bag and leave it Trash

- Toilet Compost Toss in ditch

9e) **Would you use dog waste stations (plastic bag dispensers with or without trash can), if more were made available at parks and trails?**

- Yes No

10) **Would you be willing to volunteer your time to help preserve Oak Creek and/or educate others about Oak Creek? (If yes, provide contact information on next page.)**

- Yes No

11) **How old is the head of the household?**

- <34 35-44 45-54 55-64
- 65-74 75+

12) **How many people live in this household?**

- 1 2 3 4 5+

13) **Is this residence a second home?**

- Yes No

14) **What is your approximate annual household income in thousands of dollars?**

- 0-20 20-50 50-100
- 100-200 >200

Yes	No

Please complete the reverse side, then fold and staple or tape survey closed and mail to the Oak Creek Watershed Council.

For more information, please visit our website at www.oakcreekwatershed.org

Oak Creek Watershed Council
P.O. Box 732, Sedona, AZ 86339

Oak Creek Watershed Council
P.O. Box 732
Sedona, AZ 86339

15) In your opinion, how much do the following threaten Oak Creek water quality?

0 = not sure 1 = not a problem 2 = slight problem
3 = moderate problem 4 = large problem

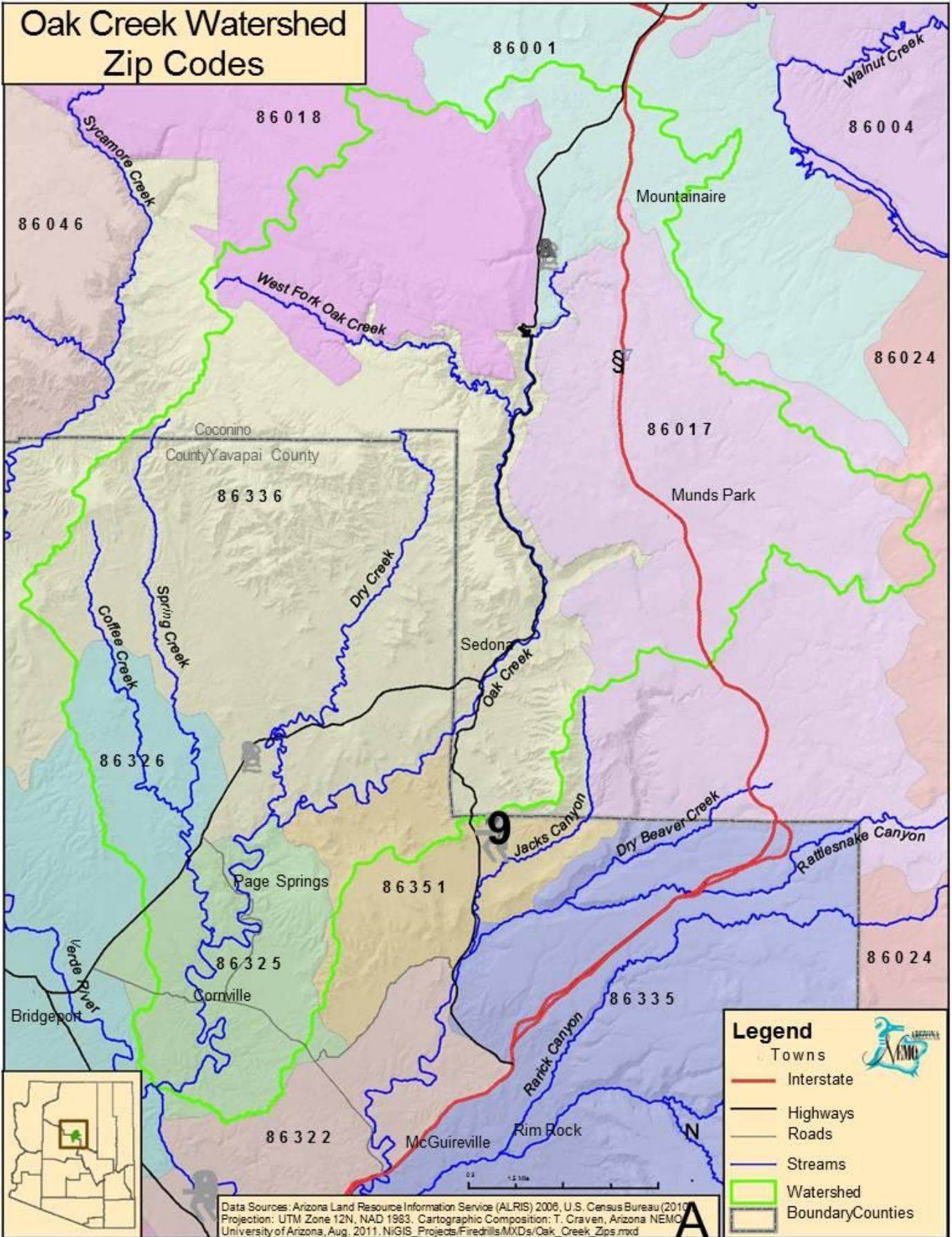
Please mark with an X

	0	1	2	3	4
Agricultural runoff					
Livestock manure					
Fertilizers and pesticides					
Animals					
Dog feces that are not picked up and disposed properly					
Wildlife feces					
Wildlife attracted to water by discarded human food waste					
Erosion and sedimentation due to the following:					
Construction and maintenance of irrigation diversions					
Building and road construction					
Road maintenance					
Low water creek crossings					
Unmaintained "social" trails					
Jeep/ORV trails					
Other sources (specify)					
Recreation					
Human feces deposited outdoors					
Trash					
Used and improperly discarded baby diapers					
Lack of public toilet facilities near creek and at trailheads					
Lack of trash receptacles at recreation sites and trailheads					
Urban areas					
Stormwater runoff					
Lawn fertilizers and pesticides					
Pet feces not collected from yards					
Wastewater					
Inadequately maintained sewer system					
Improperly built or maintained residential septic systems					
Improperly built or maintained commercial septic systems					
Other					
Lack of riparian buffers (natural vegetation next to the water)					
Disturbance of "sediment reservoirs" on the bottom of Oak Creek that hold bacteria and viruses that can cause human illness					
Other (specify)					

Please, write any comments here:

Fold here

Oak Creek Watershed Zip Codes



The results from the Social Survey are on a separate pdf attachments. Answers to questions 1 - 14 are in one pdf and answers to question 15 on the second. Three pages print out for all.

On the right side of each question's responses and tabulated data are some Take Away Notes that are meant to be summary observations. They assume that the collective answers from the 265 respondents are a fair sampling of all watershed residents and therefore the data can be extrapolated as such.

Our main use of the data and observations will be in developing the Oak Creek Community Outreach Program (OCCOP) as well as support in BMP decisions such as dog waste station installations.

We spent some time gathering some Census 2010 data regarding the ages of people living in watershed zip codes. We were hoping to compare that data with our own, relative to the age of the head of the household. Our reasoning was the low number of respondents under 45 years old (5.3%). Did younger people just not answer the survey or was it because there really are not a lot of younger people living in the watershed? The answer would be helpful in identifying our "audience" in the development of the OCCOP, but as it stands, it appears that middle aged and older watershed residents are in the majority.

Highlights of the results from Questions 1 - 14 through direct answers and extrapolation are as follows:

- 95% of property owners have some concern about the health of the Oak Creek Watershed.
- Each property owner visits/recreates along the Creek between 7 and 10 times a year.
- Hiking is almost 3 times as popular an activity as swimming.
- Personal observation & the newspaper were the choice of 74% as sources of information.
- Human feces, litter, baby diapers & septic systems were thought to be biggest contributors to creek contamination.
- Half of watershed property owners have pets & 90% of the pets go outside.
- 90% of watershed property owners clean their yard of waste
- 45% own a dog therefore there are at least 5400 dogs in the watershed.
- 45% of those who own a dog walk it (them) in the watershed extrapolating to almost 2500 dogs walked in the watershed annually.
- 64% always pick up their dog's waste. Approximate quantification of feces left behind is around 500 feces. Each gram of dog feces has 20 million *e. coli* bacteria colonies in it.
- 95% of dog owners who pick up the feces throw them into the trash.
- 89% of dog owners would use dog waste stations if provided.

- 93% of respondents were over 45 years old, and 47% were over 65. 80% have 1 or 2 people living in the household, and for 62% it is their primary home.

Question 15 on the second page of the Survey had multiple choice answers to several questions within several categories, but all regarding the threat to Oak Creek water quality. Our percentages shown here are the total of 3 columns (slight problem, moderate problem and large problem):

- 69% believe that dog feces are a problem to some degree, and 48% wildlife feces. Almost 2/3 thought that wildlife attracted to water by human food waste threatens the water quality of Oak Creek.
- More than twice as many people than any other reason thought Jeep/ORV trails cause erosion and sedimentation which affects water quality of Oak Creek.
- The responses to recreation problems were the most significant of all categories: Totals: Human feces 67%; Trash 84%; Baby diapers 75%; Lack of public toilets 79%; Lack of trash receptacles 79%. There seems to be a consistency in these answers to those in Question 6.
- 60% thought there was some problem with stormwater runoff; lawn fertilizers & pesticides 71%; and pet feces in yards 66%.
- For wastewater: 62% inadequately maintained sewer system; 68% residential septic systems and 66% commercial septic systems.
- The lack of riparian buffers was 51% and disturbance of sediment 54%.

Thank you for reviewing this data and if you have any comments or feedback, please feel comfortable in dropping us a note at your earliest convenience. The Social Survey will be inserted into the Oak Creek Watershed Improvement Plan (OCWIP) and we highly value your opinion.

Sincerely,



Barry Allan
Grant Administrator/WIC Coordinator