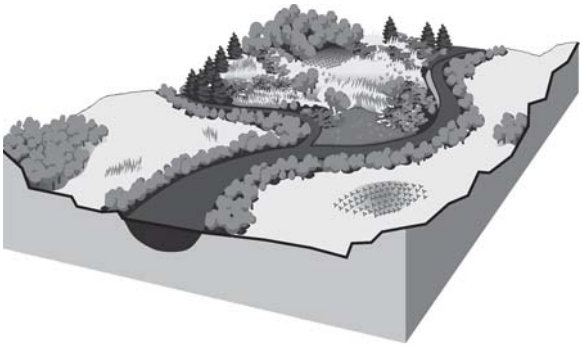
Nonpoint Source Pollution Programs: Research about Landowner Psychology & Actions

FACT SHEET - AUTUMN 2002

Nonpoint Source Pollution - Definition and Prevention



Nonpoint source (NPS) pollution is the principal remaining cause of water quality problems across the U.S. NPS pollution is defined as any source of water contamination not associated with a distinct discharge point. It occurs as rain or snow conveys materials from households, marinas, agricultural lands, industrial sites, paved surfaces, or timber operations. For instance, rain flushes vehicle emission particulates, leaked fuel and oil, and rubber dust from roads into storm drains, then into local surface waters and on into regional water bodies.

Unlike point source pollution, NPS is the cumulative result of day-to-day activities of many people, animals, or businesses. The combined effects can be significant in a particular body of water or watershed. One approach to NPS prevention and control has been intervention programs that target particular audiences or groups. A combination of education, technical and financial assistance, and regulatory measures are delivered by government agency staff or interest groups. The expected result is that individuals and communities become aware of how their activities can and do cause NPS pollution, making them more likely to adopt Best Management Practices (BMPs).

Evaluation Research - Goals and Methods

Do intervention programs actually influence behavior change, causing improved water quality? Scientific knowledge about water systems and pollutant effects is extensive. Less is known about how to best deliver information about land management practices or why certain people are more receptive to the messages.

A research study was done to better understand why people choose to do BMPs on their private property. Past studies have focused on how incentives and disincentives may influence behavior. This study explored the psychological dynamics of why landowners might be willing to adopt NPS reduction recommendations.

The research was conducted using qualitative interviews with landowners and a quantitative survey. The results of one segment of the survey are reported here. The survey was mailed to progam participants identified by Natural Resource Conservation Districts in Spring 2001. 1827 surveys were mailed to small parcel landowners in 16 counties of western Washington state; 26% of those contacted responded.

Psychology of Behavior - Motivations and Satisfactions

Intervention programs offer informal learning experiences; without regulation there is no requirement to participate. No “student” is required to learn about land management. Thus it is useful to explore why a landowner feels compelled to first, participate in a program, and then to understand why he/she may adopt BMPs.

Two principles are important. First, motivations are generally described as unobservable constructs derived from both personal and external sources that can energize and direct a person’s behavior. Numerous attempts have been made to classify and organize the diversity of human motives. Extrinsic motivators (e.g. financial payments or short term rewards) may prompt desired behaviors, but they often do not become sustained, durable actions unless a person

develops or adopts intrinsic motivators (self-derived, innate prompts). Second, satisfactions are described by social scientists as being experienced when motives are successfully expressed in actions or outcomes. The more intensely a person feels a sense of satisfaction the more a motivation is rewarded, feeding a cycle of behavior commitment.

Research Results

Numerous statements about motivations and satisfactions were presented in the survey. Participants rated each for level of agreement (1=low, 5=high). Statistical procedures revealed underlying categories or clusters of statements. Five motivation categories emerged; mean ratings (1 to 5) express the level of importance of each concept:

Stewardship Ethic - 4.27 - personal connection to larger landscape systems
Asset Protection - 3.85 - protect one's land and animals, $$ savings
Personal Commitment - 3.30 - make available time and resources
Feasibility - 3.24 - activities easy to implement, resources available
External Influences - 1.63 - acknowledging government or community pressures

Similar statistical procedures were used to analyze ratings on statements about satisfactions. Mean ratings for the four categories (1 to 5) also indicate level of importance as indicated by the research participants:

Landscape Connections - 4.16 - make a difference on the land and watershed
Integrated Actions - 3.67 - actions are part of personal routine and lifestyle
Social Interaction - 2.42 - sharing ideas, teaching and meeting people
Experimentation - 2.25 - building new knowledge and trying new ideas on one's land

Suggestions for Program Planning

This study offers opportunities to enhance effectiveness of NPS pollution outreach programs by integrating psychological response and management behavior. The highest rated category of both motivations and satisfactions reflects the participants' deep connections to their land and the larger landscape. Program managers could tap this innate caring to recruit more participants and present information that is aligned with landscape level interests.

Other highly rated motivations and satisfactions describe how land management is an integral part of lifestyle and household concerns, such as making time and money available to carry out Best Management Practices. Programs should consider the best ways to demonstrate how BMPs can be achieved by people who have busy daily lifestyles. Models or case studies of successful land owners can be shared, in addition to technical information about the materials and procedures of land management.

Readings & Resources

U.S. EPA website on water quality and nonpoint source pollution: www.epa.gov/ebtpages/watewaternonpointsources.html

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DeYoung, R. D. 1993. Changing Behavior and Making It Stick: The Conceptualization and Management of Conservation Behavior. Environment and Behavior, 25, 4, 485-505.

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