

Study of Christian Attitudes Toward Man's Stewardship
of the Environment: A Case Study in the Roanoke Valley

by

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thesis submitted to the Faculty of the
Virginia Polytechnic Institute and State University
in partial fulfillment of the requirements for the degree of
Master
in
Landscape Architecture

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May 24, 1987
Blacksburg, Virginia

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(ABSTRACT)

A range of views exist on the question of the effects of the Judeo-Christian tradition on environmental ethics. Some believe that the Judeo-Christian tradition has played the significant role in bringing about the present environmental situation. Others maintain that the current environmental crisis is much more complicated, resulting from many divergent factors. Still others would say that the Judeo-Christian tradition, as expressed in the Bible, calls man into a sacred relationship with nature which can be defined as the environmental ethic of stewardship.

This thesis studies the relationship between Christian religious commitment and attitudes toward the environment.

A questionnaire completed by 242 individuals who attend church in the Roanoke Valley provides the case study data. The survey instrument measures Christian religious commitment

and attitudes toward the environment. The results of this study will provide further understanding of indicators for environmental ethics.

ACKNOWLEDGEMENTS

I am pleased to have this opportunity to acknowledge those who have supported and encouraged me in my work.

I would first like to thank my committee chairman, Professor Dean R. Bork. His insights were invaluable in helping me to crystalize my thoughts and ideas on the research design of this thesis. He has both encouraged and challenged me in this endeavor; for this I am very much appreciative.

I would also like to thank the other members of my committee, Dr. Guy B. Hammond and Professor Robert F. McDuffie, for helping me to articulate the focus and direction of this thesis.

The expertise of Dr. Robert Schulman and _____ has been of invaluable assistance in helping me statistically analyze the data.

I would like to thank _____ for all that his friendship has added to the past three years.

Finally, I would like to thank my family, particularly my mother and step-father, _____.

Acknowledgements

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STATEMENT OF THE PROBLEM

Within the literature there is a difference of opinion about how the Judeo-Christian tradition has influenced environmental ethics. Lynn White, Arnold Toynbee, Ian McHarg and others contend that the present environmental crisis can be directly linked to Judeo-Christian influences. Others such as Lewis Moncrief and Barry Commoner contend that religious influences are only one of a great many factors which have brought about our present environmental situation. Francis Schaeffer, Rene Dubos and Nancy W. Denig take the position that the Judeo-Christian tradition, as expressed in the Bible, calls man into a sacred relationship with nature.

It is my hypothesis that strength of Christian commitment correlates positively with the environmental ethic of stewardship.

The literature review outlines the arguments as to how the Judeo-Christian tradition influences environmental ethics.

LITERATURE REVIEW

Jewish and Christian Traditions: Cause of the Problem

In describing the importance of Christianity to our culture, Lynn White (1967) says that the victory of Christianity over paganism was "the greatest psychic revolution in the history of our culture." He says that although the form of our language and thought frequently seems to be post-Christian, the substance of it has remained consistent with the Christian Era.

White sees two major results from the victory of Christianity over paganism. The first is our faith in perpetual progress. He traces this back to the origins of Judeo-Christianity and the creation story which formed the basis for viewing time as non-repetitive and linear. This means that the Jews differed from the people living around them in that they did not have a cyclical view of time based on the moon and the seasons but, that they viewed time as moving forward, with a beginning and an end. The second result White says is that, in the biblical view, all of creation is for the benefit of man. Man is not just a part of nature; man is made in the image of God (White, 1967)!

The creation story, as White understands it, expresses the belief that man shares in God's transcendence over nature and that it is God's will that man exploit nature for his own benefit. White sums up his interpretation of the creation story by describing Western Christianity as "the most anthropocentric religion the world has ever seen" (White, 1967).

However, the exploitation of nature found in Western Christianity is not found in the Greek Christian East. White offers two explanations for this. First, White says that it is the result of the difference between the Greek and the Latin view of sin. The Greek believes sin to be intellectual blindness, salvation coming through seeing things rightly. The Latin view of sin is moral evil, salvation coming through right living. Consequently, "the Greek saint thinks and the Western saint acts." Thus, the conquest of nature comes easily to Western Christianity (White, 1967).

Secondly, natural theology, the belief that since nature is created by God it follows that nature explains something of God, is more closely associated with the Greek than the Latin tradition. The natural theology held by Greek Christians is inhospitable to the scientific study of nature. However, by the 13th Century the Latin West looks upon science as a way of understanding the mind of God by understanding how God's

creation works. In the 19th Century, technology joins with science to achieve mastery over nature which results in the present environmental crisis (White, 1967).

Perhaps, of all those who share this view, Ian McHarg (1969) is most vocal with his opinions. In his much celebrated book, Design with Nature, McHarg (1969) minces no words when he summarizes his views on the Judeo-Christian heritage as:

A rag bag of ancient views, most of them breeding fear and hostility, based on ignorance, certain to destroy, incapable of creation. Show me the prototypical, anthropocentric, anthropomorphizing man and you will see the destroyer, atomic demolition expert, clear feller of forests, careless miner, he who fouls the air and the water, destroys whole species of wildlife: the gratified driver of bulldozers, the uglifier.

(McHarg, 1969)

In "Man and Environment" McHarg goes on to say that "The first chapter of Genesis contains the ruling concept of God, nature and man held by Jews and Christians alike, man made in the image of God, given dominion over all life, enjoined to subdue the earth. He says that it is from this source that Jews and Christians derive the concept of a man-oriented universe; the sense of the earth existing for the delectation and use of man, wherein his relation to nature is one of domination and subjugation.

Arnold Toynbee (1973) summarizes his views on the origin of the problem by saying:

God created the world; the world was His to do what He liked with; He has chosen to license Adam and Eve to do what they liked with it. And their license was not canceled by the Fall.

Toynbee (1973) explains that the relationship between God, man and nature is established in one sentence--"And God blessed them, and God said unto them, 'Be fruitful and multiply, and replenish the earth, and subdue it: and have dominion over the fish of the sea..." This is a "license for population explosion and like both a license and an incentive for mechanization and pollution."

Toynbee links the present environmental situation to the rise of monotheism. He contends that prior to the rise of monotheism, the greedy impulses of man were held in check by his awe of nature. Pre-monotheistic man believes all of nature to be divine (Toynbee, 1973). The disrespect for nature created by monotheism continues on after a weakened belief in the monotheism which first permitted it. However, it is not until the Industrial Revolution that "the times of the Gentiles be fulfilled" and Western man is able to assume his mastery over nature (Toynbee, 1973).

Lynn White's 1967 article generated such a volume of comments that in 1973 he writes again on the same subject to further clarify his position and to respond to comments on the original article. In his 1973 article he says that the environmental situation is a "by-product of a forward surging technology that first emerged during the Middle Ages in the area of the Latin Church and has continued to the present" (White, 1973).

However, White seems to be offering a glimmer of hope to Christianity when he says that the ways in which Christians have interpreted what the Bible says on any particular issue have changed over the course of history. He cites, as an example of this, the change in the Christian attitude toward slavery during the past two hundred years. White suggests that Christians might re-interpret what the scripture is saying about man's relationship with nature (White, 1973).

Jewish and Christian Traditions: A Part of the Problem

As previously mentioned, the publication of Lynn White's (1967) article sparked replies from scholars who held opposing views regarding the relationship between the Judeo-Christian tradition and the environmental crisis. Lewis Moncrief (1970) responds to White by saying that "to argue that it (religion) is the primary conditioner of behavior

toward the environment is much more than the data that he (White,1967) cites to support this proposition will bear." White (1967), himself, acknowledges examples of significant environmental destruction caused by those who have had no exposure to Judeo-Christian values (Moncrief, 1970).

It is Moncrief's (1970) position that "the role of religion in man-to-man and man-to-environment relationships is one of establishing a very broad system of allowable beliefs and behavior and of articulating and invoking a system of social and spiritual rewards for those who conform and of negative sanctions for individuals or groups who approach or cross the pale of the religiously unacceptable" (Moncrief, 1970). In other words, it establishes the parameters but does not define specific behavior (Moncrief, 1970).

Moncrief (1970) presents his opinion that it is the cultural variables which have brought on the present environmental crisis. There is only an indirect link between the Judeo-Christian tradition and the present attitude toward the environment. Moncrief (1970) presents this in the form of a model where each level influences the succeeding levels:

I	II	III	IV
Judeo-Christian Tradition	1.Capitalism (with the attendant development of science and technology) 2.Democratization	1.Urbanization 2.Increased Wealth 3.Increased Population 4.Individual Resource Ownership	Environmental Degradation
			(Moncrief, 1970)

Even science does not escape blame. Although many environmentalists are scientists, they tend to be critical of the effects of technology on the environment. They see the need for looking at systems rather than examining the parts. Barry Commoner, a leading environmentalist, says that "it is this linear, non-holistic nature of modern technology that is the root cause of the environmental crisis" (Commoner, 1971).

Jewish and Christian Tradition: The Solution

Another respondent to White's article (1967) is Rene Dubos (1969). Dubos explains that all ancient peoples have practiced some type of nature worship which involves them in a holy relationship with the land. This behavior contrasts sharply with modern Western society where respect for the earth and nature is almost extinct. Primitive religions are always linked to magic. The anthropologist, Bronislaw Malinowski, explains that "religion refers to the fundamental issues of human existence while magic turns around specific,

concrete and practical problems." It is Dubos' contention that the present ecological crisis is the result of "our failure to differentiate between the use of scientific technology as a kind of modern magic and what (he calls) modern religion, namely knowledge as it relates to man's place in the universe and, especially his relation to the earth" (Dubos, 1969).

Dubos questions the link that White (1967) has proposed between the biblical account of creation and the present environmental degradation by reminding us that in the Genesis 2 account of creation, man is placed in the garden with instructions "to dress it" and "care for it." When man fulfills this commission he becomes what he was intended to be --the one who gives form to nature (Dubos, 1969).

However, it is the tendency of modern Western man to determine land use based solely upon economics. This short range view courts disaster. It is in the best interest of man to use land based upon its natural suitability. It is possible to change land uses from one ecological state to another but in order for this change to be beneficial it must occur slowly enough to allow for the adaptive processes of nature and man. It is those rapid changes from one ecological state to another which result in great environmental damage. Since changes to the earth are presently occurring at such a tre-

mendous rate, it becomes imperative that we develop ways of assessing possible consequences of these interventions and ways of dealing with these changes (Dubos, 1969).

Dubos believes that it is necessary to develop an understanding of the natural suitabilities of land. There are some landscapes that, due to their splendor and magnitude can only be held in awe by man. Any intervention into these landscapes by man is always an unwelcome intrusion. Niagara Falls, the Grand Canyon, and the Painted Desert are examples of this type of landscape. The more frequent landscape, however, is the one in which the satisfactory relationship between man and his surroundings provides the charm of the place. Examples of this are the country churches tucked into the New England landscape and the indigenous architecture of Europe. Alexander Pope summarized this by saying, "In everything respect the genius of the place" (Dubos, 1969).

Dubos believes that we must develop an enlarged ecological consciousness. Since this would be conceived by the mind of man, it is necessary to admit to an anthropocentric view which sees man as the highest form of creation but realizes that he is still a part of creation (Dubos, 1969).

Francis Schaeffer provides the most comprehensive look at the relationship between Christianity and the environment.

Schaeffer warns that Christianity does not automatically provide an answer for man's proper relationship with nature. He says that it must be the right kind of Christianity. Any Christianity which is based upon a dichotomy, a platonic concept, will not provide us with an answer. Schaeffer says that "much orthodoxy and much evangelical Christianity is rooted in a platonic concept, wherein the only interest is in the 'upper story', in the heavenly thing--only in 'saving the soul' and getting into heaven. In this platonic concept, even though orthodox and evangelical terminology is used, there is little or no interest in the proper pleasures of the body or the proper uses of the intellect." This kind of Christianity values nature only for its use in providing proof of the existence of God (Schaeffer, 1970).

Schaeffer says that it is only a biblical view of nature which can provide us with a proper basis for viewing nature in such a way that we may solve the present environmental crisis. A biblical view of nature must begin with the concept of creation: that God always was and that God created everything out of nothing. What is created is not an extension of the 'essence of God' but is, in fact, real and existent.

As was previously discussed, it is this view of creation which allowed for the development of modern science.

Christianity believes that God has created a real world which can be investigated and understood by reason since it is created by a reasonable God (Schaeffer, 1970).

Schaeffer says that it is the same with nature. "It is the biblical view of nature which gives nature a value in itself: not to be made merely a weapon or argument in apologetics, but of value in itself because God made it" (Schaeffer, 1970).

Schaeffer says that the Christianity of the Reformation provides us with a proper view of nature. It is based upon the fact that God has spoken about both things of the spirit and nature. Schaeffer says that Reformation Christianity believes "what the Bible says, that God has revealed truly about Himself and the cosmos, and that, therefore, there is a unity." We have been given a "true but not exhaustive knowledge." It is in this that Christianity provides an answer to man's proper relationship to nature (Schaeffer, 1970).

The Reformation biblical view then moves from the basic fact that all things are created out of nothing by God to the fact that "all things are equally created out of nothing." Thus, all things including man are equal in their origin (Schaeffer, 1970).

Here Schaeffer points out that all of this depends upon the nature of God. The Judaistic-Christian God is different from all other gods because He is a personal-infinite God. The gods of the East are infinite because they contain all--as in the concept of Yin and Yang but they are not personal. The gods of the West, the Greek and Roman gods, are personal but they are not infinite. The Judaistic-Christian God is unique in that He is infinite and personal. Schaeffer gives us both aspects of the biblical God of creation in the form of a model:

<u>Personal</u>	<u>Infinite</u>
man	<u>chasm</u>
<u>chasm</u>	man
animal	animal
plant	plant
machine	machine

On the personal side God has created man in His image. It is here that man in that image is above the chasm and the animal, plant, and machine are below the chasm. On the side of the infinite, the chasm is between God and all of creation--including man. Man and machine are equally separated from God (Schaeffer, 1970).

Thus, in the biblical perspective, man's relationship is primarily upward but this does not mean that he can forget his relationship downward. A biblical view rejects the attitude that there is no difference between man and other creation but it equally rejects the view that man is totally separated from all other creation. Schaeffer further clarifies this paradox by saying "we are separated from that which is the 'lower' form of creation yet we are united to it. One must not choose. We must say both, I am separated from it because I am made in the image of God; my integration point is upward, not downward; it is not turned back upon creation. Yet at the same time, I am united to it because both nature and man are created by God" (Schaeffer, 1970).

Schaeffer says that we must acknowledge our connection with nature on a psychological as well as an intellectual level. This means that man mentally acknowledges his relationship with nature but he also should "feel" a psychological relationship to nature. Schaeffer says that "on the side of creation and on the side of God's infinity and our finiteness--we really are one with the trees" (Schaeffer, 1970)!

Schaeffer explains that our relationship with nature should not only be for aesthetic reasons but also because each thing should be "treated with integrity because that is the way God

made it." The Christian is to treat things with respect because they are made by God and are not autonomous (Schaeffer, 1970). When we remember that God is the creator of everything we cannot accept the platonic notion that matter is lowly. There is value to all creation because it is created by God (Schaeffer, 1970).

Another reason that we many not view matter as lowly is because of the bodily resurrection of Christ. This reality must influence the Christian's attitude toward life. The resurrected body of Christ was real-- it could be touched and that real body ascended into heaven. The Bible teaches that that body is somewhere in the unseen world. Schaeffer says that "the resurrection and the ascension prove that there is no reason to make a false dichotomy between the spiritual and the material." The fact that the Bible teaches that our own bodies are one day, also, to be raised, speaks to the same truth (Schaeffer, 1970).

Schaeffer gives us what he calls the Covenant of Creation. A covenant is a promise made by God to man (American Heritage Dictionary 1969,1970). Both the Old and the New Testaments are replete with examples of these written promises. The Covenant of Creation, however, is not a written promise. It is a promise which "rests upon the way God made things. God is going to deal with them as He made them." God deals with

each aspect of creation--man, animal, plant, and machine--as He created them. Schaeffer uses the word "integrity" to describe the way God deals with His creation. This integrity can become an example for us in determining the way we should deal with the rest of creation. It is right that we should deal with man as man not as a plant or an animal or a machine. The reason for this treatment is to be for love of God--the creator. A lesser reason becomes merely pragmatic (Schaeffer, 1970).

Schaeffer says that for the designer this means that, first of all, materials must be used with integrity. For example, concrete is to look like concrete and not like brick. Secondly, the designer is to respect the "integrity of the terrain" (Schaeffer, 1970).

In considering what our attitude toward nature is to be, Schaeffer refers us to Romans 6. Here Paul explains the principle of acceptance by faith of that which is in the future, based upon that which has already been accomplished. Just as the Christian is to live as dead to sin and alive to God substantially now and that someday this will be made perfect, so the Christian is to deal with nature based upon the completed work of Christ (Schaeffer, 1970).

Schaeffer continues the comparison when he explains that just as the eternal consequences of sin are removed by Christ's death and the temporal consequences remain for us to deal with, so it is with nature. In order for there to be a reality to the acceptance of the restored relationship between man and God, the Bible says there must be a moment-by-moment looking to the finished work of Christ (Schaeffer, 1970).

Schaeffer says that Reformation theology teaches that the Fall not only separates us from God but that there are other separations as well. Man is separated from himself, he is also separated from other men and, finally, as is our concern, he is separated from nature and nature is divided from itself (Schaeffer, 1970).

The Bible teaches that one day all of these separations will be healed. Christians are called, however, to deal with nature on the basis of the completed work of Christ and by this "substantial healing can be a reality here and now" (Schaeffer, 1970).

Schaeffer faults orthodox Christianity for the way it has failed to substantially heal these separations. The Christian, according to Schaeffer, should be one "who--with God's help and in the power of the Holy Spirit--is treating nature now in the direction of the way nature will be then."

As in the other relationships, this will not be perfect but it can be substantial. Schaeffer quotes Francis Bacon's New Organon "Man by the fall, fell at the same time from his state of innocency and his dominion over nature. Both of these losses, even in this life, can in some part be repaired; the former by religion and faith, the latter by the arts and sciences." It is through the arts and sciences that man is able to work toward the restoration of nature (Schaeffer, 1970). Schaeffer says that this restoration may be accomplished in two ways. The first, as has already been discussed, is the understanding of the significance of creation. The second way is a correct understanding of man's dominion over nature. This involves a recognition that there is a distinction between dominion and sovereignty. Only God is sovereign. Dominion implies stewardship and requires that the land be used in accordance with the wishes of the owner (God) (Matthew 25:15 ff).

When nature becomes autonomous it is then swallowed up by man. Man is just beginning to see what has happened to nature; what has resulted from man's wrong view of nature (Schaeffer, 1970).

A right view of nature requires an understanding of the plan of creation as shown by the Maker. The first step in this is to understand that each level of creation has the use of

the levels below it. Man uses the animals, the plants and the mechanical aspects of the universe. The animals use the plants and the mechanical aspects of the universe. And, the plants use the mechanical aspects of the universe. Also, each level is limited to what it is. It must behave as it is; and it is limited, as well, by those things under it. They, too, must behave according to their nature (Schaeffer, 1970).

Here Schaeffer points out an interesting difference between man and the other levels of creation. While the animals, the plants, and the mechanics of the universe must behave according to their created nature and must treat those below according to their created nature, man is different--man has a choice. Man may choose to treat them according to their nature or he may choose to disregard their nature. While there are certainly some limitations of natural law, still, man has a wide range of choices which he can consciously make (Schaeffer, 1970).

Schaeffer says that another way to look at it is to say that man was given dominion over nature but since the Fall he has misused that dominion. He has exploited all creation for his own purposes. Christians are to have dominion over nature but they are to use this dominion as it is intended--to treat nature as worthy because it is created by God; man is to show

restraint in the ways in which he treats nature (Schaeffer, 1970).

A parallel to man's dominion over nature is the dominion man is given over woman. The character of this dominion is best described in the New Testament by the comparison of Christ's love for the church as the model by which men are to love their wives (Schaeffer, 1970).

Schaeffer says that Christianity has failed to use the dominion over nature as God intended and he points out the biblical teaching that confession of sin is necessary for forgiveness. He says also that Christianity has been reluctant to point out the abuses of nature (Schaeffer, 1970). "The church must put belief into practice". When this is done there can be healing. The result of this is a new appreciation for the beauty of nature. Only man is capable of this type of appreciation. In addition to the appreciation of beauty, there will also be economic and human value due to the improvement of the ecological condition (Schaeffer, 1970).

"The Christian is to honor what God has made, up to the very highest level that he can honor it, without sacrificing man." The Christian is to treat nature with the utmost respect. The example that Schaeffer gives is that a tree may be cut

down to build a house or to warm a family but, it is not to be cut down for the sake of cutting it down (Schaeffer, 1970).

St. Francis speaks of our being "brothers to the birds." Schaeffer says that Christians must understand this concept theologically, intellectually, practically, and psychologically. Theologically, although we are created in the image of God and the bird is not, still we are brothers in the sense that we are both created by God. The Christian is to have an emotional attachment to nature but not for romantic, abstract or pragmatic reasons. To object to the destruction of a tree because it causes environmental degradation becomes egoism. The Christians' emotional response to the tree is to be based upon the knowledge that "the tree has a real value in itself, being a creature made by God." This knowledge allows man to "care for the animal, the tree, and even the machine portion of the universe, each thing in its own order for we know it to be a fellow creature with ourselves, both made by the same God" (Schaeffer, 1970).

Christians are to work toward healing in each area of separation-man from God, man from himself, man from other men, man from nature, and nature from itself. To work toward the substantial healing of the present, knowing that one day there will be perfect healing is the role of Christian-based

science and technology. Schaeffer suggests that the Christian Church should be a "pilot plant" where the world can see the substantial healing of the relationships. Schaeffer calls it a "pilot plant" because it would be a smaller version, to test how the real thing would work (Schaeffer, 1970).

The reason why man treats the land as he does is greed--it is initially more costly and takes more time to care for the land with respect (Schaeffer, 1970).

Nancy Denig presents three challenges to the popularly held view on the relationship between the Judeo-Christian tradition and attitudes toward the environment. The first challenge is to point out the positive influences of Judeo-Christian values. The second is to question the uniqueness of Western man's environmental destruction. The third is to question the routine linkage of Judeo-Christian values with Western values and history. She quotes R.V. Young who says that it was only when Western Europeans stopped believing in the Divine inspiration of the Bible that they began treating nature according to Toynbee's (1973) interpretation of the Genesis account of creation. William Leiss suggests that it was the strength of Christianity that held the "notion of man as lord of the earth" in the context of a wider ethical framework (Denig, 1985).

Denig offers a positive theology of man and nature based upon three biblical concepts from both the Old and New Testaments. First, the biblical meaning of dominion is explained in terms of God's lordship over us which is often expressed in "personal, intimate and humble terms." The Lord is pictured as husband, father, and even servant. Clearly, from the biblical perspective, the power of lordship is through love, not force. Man's dominion over nature is to follow the biblical examples of God's dominion over us (Denig, 1985).

Stewardship is the second concept to be considered in this theology. A steward is "one who manages another's property, finances or other affairs" (American Heritage Dictionary, 1971). The Genesis 2 account of creation, where God places Adam and Eve in the Garden of Eden "to dress and care for it" gives us a picture of what is meant by stewardship (Denig, 1985).

The third concept is co-existence. This is defined as a "sacred, covenantal co-existence" between man and nature and is discussed in detail by Schaeffer. It is that man's co-existence with nature is based on the the concept that both man and nature are dependent upon God (Denig, 1985).

Judaism: The Problem

Most of what has been written on the subject of the effects of the Judeo-Christian tradition on environmental ethics has been written from the Christian perspective. However, the relationship between Judaism and the environment is as hotly debated as the relationship between Christianity and nature.

Steven S. Schwartzschild says that there is a gulf between the Jew and nature. He sees Judaism as unnatural because of its belief in the transcendence of God over nature and the belief that nature is, itself, profane. He describes "natural thinking as most closely allied with pantheism, paganism and Christianity--which it (Judaism) opposes."

He argues, that historically, most Jews "in remembered history have been unnatural persons." He cites Jewish literature as proof of this. He says that what separates "the Christian component in Western culture" from Judaism is the doctrine of the incarnation. The incarnation signifies God becoming man and entering into nature--thus validating nature. For Schwartzschild, "the doctrine of incarnation is, among other things, a re-paganization of biblical religion in the limited but crucial sense that nature is re-sanctified." God is nature and nature is God. The purpose of history as God's method of redemption is, therefore, more

Christian than Jewish. It can be seen in the form of the Holy Spirit working through men in the time between the incarnation and the Second Coming. Once God has become nature, thereafter, he works through and like nature, by natural law until God and nature again become 'all and all' (1 Cor. 15:28).

For Schwartzschild, the biblical and Jewish God is "absolutely transcendent" and in no way one with nature. Nature is to be protected in order to insure the service it can provide to man and to God. Within Jewish philosophy, God and man are completely separate from nature. He says that for 2,000 years Jews have participated in urban living. He suggests that Jewish teaching cautions against the "subordinating of intellectual and moral pursuits to material ends" (Schwartzschild, 1984).

Judaism: The Solution

The Ehrenfelds suggest that since there is no word for nature in the biblical and early rabbinic Hebrew this indicates that the ancient Hebrews do not see a separation of nature from themselves.

They argue that Judaism is the first civilized religion to develop and enforce laws against cruelty to animals. Judaism

introduced the concept of stewardship and "made it a binding practice upon Jews." Judaism developed laws protecting nature during war as well as "the most detailed set of legal instructions concerning agricultural practices and conservation of natural resources." Judaism, through its festivals and unique luni-solar calendar, is intimately and uniquely bound to the earth and its cycles. And Judaism, with its "magnificent contribution of the Sabbath, a time when Jews acknowledge the sovereignty of the creator by refraining from any voluntary acts of creation or destruction, offers what may be the only theological and practical rationale and methodology for the ultimate reconciliation of the idea of stewardship with the idea of technological progress" (David Ehenfeld and Joan Ehrenfeld, 1985).

Jeanne Kay says that the Torah provides the Jews with an explicit environmental ethic that: "ethical and appropriate human behavior, as defined by the 613 commandments, will insure a favorable environment; breaking the Mosaic covenant will bring about ecological deterioration"(Deut. 8:28). She goes on to say that this may not be a Sierra Club or a Christian notion of an acceptable environmental ethic but it is "an ancient Jewish one which defines human responsibility for nature."

Kay challenges the significance of the incarnation of deity by Christians with respect to their attitude toward nature. She holds that the Christian belief of this world as a painful and temporary place is of greater significance (Kay,1985).

Summary

The connection between religious beliefs and attitudes toward the environment is a complicated one and one subject to much interpretation. It is generally accepted that religious beliefs have a significant impact on forming those values which influence the ways in which we treat the land. Those who blame the Judeo-Christian tradition for our environmental problems see Genesis 1, which focuses on man's dominion over nature, as the basis for man's relationship with nature. Those who identify themselves with the Judeo-Christian tradition more frequently see man's proper relationship with nature defined by both Genesis 1 and Genesis 2 which focuses on man as the husbandman.

METHODS AND PROCEDURES

As the literature review indicates, there is a difference of opinion regarding the influence of the Judeo-Christian tradition on environmental ethics. Because the Judeo-Christian tradition encompasses such a wide range of experience, it is necessary to limit this research to the importance of Christianity in shaping attitudes toward the environment. In order to accomplish this, a three part questionnaire looks at environmental ethics, degree of Christian commitment and demographic factors.

Definition of Variables

Environmental Ethic of Stewardship: The environmental ethic of stewardship is a complex concept best understood by considering the parts of the whole. An ethic may be defined as "a principle (or a set of principles) that can be used to decide what morally ought to be done, along with the supporting reasons for such a principle" (Bayles, 1983). Over the past three thousand years the range of concerns covered by ethics has grown while the concerns covered by expediency have been shrinking. "An ethic, ecologically, is a limitation on freedom of action in the struggle for existence. An ethic, philosophically, is a differentiation of social from

anti-social conduct." These are two definitions of the same thing. Ethics derive from a need for cooperation. As the need for cooperation has developed so have ethics (Leopold, 1949).

Relationships between individuals are the subject of the first ethics. The Mosaic Decalogue is an example of this kind of ethic. The relationship of the individual to society is the subject of the second kind of ethic. An example of this is the Golden Rule of the New Testament. The third ethic deals with man's relationship with the land. Aldo Leopold describes the time in which he was writing as one in which man's relationship with the land was "strictly economic, entailing privileges but no obligations" and, thus, not subject to ethics. He pictures the "extension of ethics to this third element in human environment... (as) an evolutionary possibility and an ecological necessity." As far back as Ezekiel and Isaiah, individuals have warned against defiling the land and the consequences of such action but the society Leopold writes about has not yet affirmed that belief. Leopold forecasts the conservation movement of his time as "the embryo of such an affirmation" (Leopold, 1949).

For Leopold, an ethic is "a mode of guidance for meeting ecological situations so new or intricate, or involving such deferred reactions, that the path of social expediency is not

discernible to the average individual." All three of these ethics assume that the "individual is a member of a community of interdependent parts" (Leopold, 1949).

To understand stewardship within the Judeo-Christian heritage is to first understand to whom the earth belongs. Psalm 24:1 says "the earth is the Lord's and everything in it." Psalm 115:16 says "the highest heavens belong to the Lord; but the earth is given to man." From this we may conclude that the earth belongs to both God and to man. Man holds the land for the creator-owner--God. Genesis 1:26-28 says "Let us make man in our image...,and let them rule all the earth. So God created man in his own image and God... said to them...Fill the earth and subdue it." Thus, man has been made in the image of God and has been given dominion over the earth. Man has a unique position in all creation because he has been placed between God and all other creation (Stott, 1984,1985).

Religiosity: It is now commonly accepted that the nature of religion is multi-dimensional. In her thesis, "The Relationship between Religiosity and Psychological Well-Being", Deborah Bryant gives a framework for understanding religiosity. She says that religiosity may include many different things--such as membership, belief and practice (Stark and Glock, 1969). Being religious in one dimension does not imply being religious in another. For example, there are

church-goers who do not believe, those who believe and do not attend church, and those who both believe and attend church.

As there are diverse forms of religiousness (Roof, 1979) and just as there are diverse ways of being religious, so there is no single measure of religiosity. Because the concept of religiosity is so complex it is generally accepted that a multi-dimensional measure is necessary (Roof, 1979).

For the purpose of this study, religiosity will refer to strength of Christian beliefs and behavior.

Control Variables: In a study of the relationship between religiosity and environmental ethics several variables become important as controls. Gender, age, income, education and denomination are control variables. Each of these is known to be related to religiosity. However, their correlation with environmental ethics is not known.

According to Argyle "the differences between men and women in their religious behavior and beliefs are considerable" (1968:11). It has been found that by any measure, women are more religious than men.

According to Blazer and Palmer (1976) religiosity is found to increase in later life. Moberg (1965) says that while

levels of church attendance decrease after age sixty as a result of overall decreased activity, other, more private forms of religious activity increase (Blazer and Palmore, 1976).

Education and income are positively related to religiosity when it is defined in the narrow context of church attendance (Muller and Johnson, 1975). The middle and upper class rate high on the institutional modes of religiosity while the lower class rate higher on the personal mode of religiosity (Argyle and Beit-Hallahmi, 1975).

Studies of denominational differences have focused primarily on church attendance (Hyson, 1975) revealing that Catholics attend most regularly followed by Protestants, Jews and 'no affiliation' in that order.

Looking at religious belief found levels of belief to be highest for Protestants, followed by Catholics, 'no affiliation' and Jews in that order (Hyson, 1975).

Development of Instrument

As the literature review indicates, there is a difference of opinion regarding the influence of the Judeo-Christian tradition on environmental ethics. This research tests the

relationship between religious values and attitudes toward the environment by means of a questionnaire. The questionnaire is composed of three parts.

The first section of the questionnaire, questions 1 through 30, deals with the environment.

To measure the environmental ethic of stewardship requires the assessment of attitudes, beliefs and behavior in a wide variety of areas. Attitudes are how people feel about something. Beliefs are what a person thinks is true or false. And behavior is what people have done, are doing, or plan to do in the future (Dillman, 1978). This section of the questionnaire is based upon a 168 question instrument entitled "Attitudes Toward Environmental Issues".

A study of the 168 questions from "Attitudes Toward Environmental Issues" is done by dividing it into three categories of questions--questions about attitudes, questions about beliefs, and questions about behavior.

An assumption is made that behavior questions are the most objective and thus the easiest to measure. Therefore, wherever possible, questions are chosen which ask about specific behavior. A few questions seeking information on attitudes and beliefs about the environment are included because they

contained important information which cannot be asked in the form of a behavioral question.

The 168 questions are then evaluated for content. The major topics are found to be environmental education, pollution, natural resources, governmental controls, litter, population control, recycling and technology. Most questions on environmental education are eliminated as inappropriate for an adult target population. Most questions dealing with government controls are eliminated because it is felt that they might confound the results. The questions selected for inclusion deal primarily with the three broad areas of pollution, natural resources and litter.

The second section of the survey, questions 31-48, and question 53 tests for religiosity. "The Dimensions of Religiosity: A Conceptual Model with an Empirical Test" written by Marie Cornwall, Stan L. Albrecht, Perry H. Cunningham and Brian L. Pitcher is used as the basis for testing religiosity. Six dimensions of religiosity are established by a cross-classification of three general components with two modes of religiosity (Cornwall, 1986).

The three general components established are religious belief, religious commitment and religious behavior. These three general components of religiosity tap the recognized

distinction between knowing (cognition), feeling (affect) and doing (behavior). The cognition component is the element which indicates religious belief or orthodoxy. The affect component is the element which deals with feelings and is concerned with feelings toward religious beings, objects and institutions. The behavioral component is the element which looks at practices such as church attendance, financial contributions, frequency of personal prayer and scripture study as well as religious and ethical behavior (Cornwall 1986).

A distinction is made between the two modes of religious involvement--the institutional mode and the personal mode. The institutional mode is the external, public, social or formalized aspect of religious involvement. It is made up of those beliefs, feelings or behaviors which are unique to a particular sect or denomination. The personal mode is the more subjective mode involving "deeply held personal attitudes, values, loyalties, and commitments" (Cornwall, 1986). It includes general Christian doctrine as distinguished from doctrine of a particular sect or denomination.

For the purpose of this study the institutional mode of religiosity is a less useful measure than the personal mode. The personal mode is the primary measure of religiosity. Questions 31 through 34 measure traditional orthodoxy, questions 35 through 39 measure spiritual commitment,

questions 40 through 43 measure religious behavior, and questions 44 and 45 measure Christian behavior.

The institutional mode of religiosity is tapped by questions 46,47, 48, and 53.

The third section of the questionnaire, questions 49 through 52 are to help interpret the results. They will be used to determine if there are significant differences in attitudes toward the environment by sex, age, income , education level or denomination.

Sample and Method of Analysis

Location

In order to study religious influences on environmental ethics, it is necessary to narrow the focus to a particular religious influence and a particular geographic area. The Christian influence is chosen for this study because it is the dominant religion in the United States. Judaism is not included in order to eliminate extraneous variables which could confound the results.

Since the United States is founded on Christian principles, it is expected to be a suitable place to observe the influ-

ences of the Christian tradition. Also, since the United States is highly industrialized, there is a greater range of environmental possibilities than could be found in an area with less technological opportunity.

It is impractical to attempt to sample the entire United States. Therefore, the sample is drawn from a relatively small geographic area which is conveniently located. The statistics used are all descriptive. No attempt is made to statistically infer the results to a larger population.

The Roanoke Valley is the study area because it is the closest metropolitan area to Blacksburg. Blacksburg, itself, is not the study location because it has many unique characteristics by virtue of the fact that it is a university town. The Roanoke Valley is located along the Roanoke River between the Blue Ridge and the Allegheny Mountains in Southwestern, Virginia. Within the Roanoke Valley is the City of Roanoke which is the largest city between Richmond, Virginia and Knoxville, Tennessee or between Richmond and Charleston, West Virginia. The Norfolk and Western Railroad is significant in the economic development of the area (Roanoke, Salem, and Vinton City Directory-1986). The smaller communities of Salem, Vinton, and Troutville are, also, a part of the sample. Since all of the survey respondents are from this area, biases which are unique to it are built into the sample.

Church-goers are selected for the sample population because the survey questions asks information on Christian beliefs and behavior. It is assumed that Christian churches are a good place to locate those who profess such beliefs and behavior.

Distribution

All of the churches in the Roanoke metropolitan area are numbered from 1 to 253. A table of random numbers is used to select the churches to be contacted. The pastor of the church is called on the telephone and asked to have his church participate in the survey. If the pastor agrees to have his congregation participate he is asked to approximate the number of people who attend services each week. Ten percent of this figure is the basis for determining the number of questionnaires the church is given to complete. The pastor is told that the questionnaires will be delivered to him. The pastor is asked to randomly distribute the questionnaires at the next Sunday service. If the request is refused, or there is no response, the table of random numbers is used again to select another church to be contacted. One week after the surveys are distributed in the churches a letter is sent to the pastors thanking them for their participation and asking them to remind the members of their

congregations to complete the questionnaires as soon as possible.

The total number of questionnaires distributed is four hundred. Six weeks is allowed for survey participants to respond. After the six weeks, there are two hundred and forty three responses, giving a return rate of 60.75%.

Scoring

Questions 1 through 30 deal with the environment. An index of environmental concern is computed by averaging questions 1 through 29 using A=4, B=3, C=2, D=1 and E=0 except for questions 5,6,8,18,20 and 27 which are scaled in the opposite direction. The high score corresponds to greater environmental concern.

An index of religiosity is computed by averaging questions 31 through 45 where A=4, B=3, C=2, D=1 and E=0. Question 48 is scaled so that A=4, B=8/3, C=4/3 and D=0. For question 53, A=4 and B=0. Questions 48 and 53 receive twice the weight of questions 31 through 45. The high score corresponds to greater religiosity.

The index of religiosity is correlated with the index of environmental concern as well as with each individual environ-

mental question. This is analyzed by a 1-way ANOVA with Duncan Multiple Range Test.

Question 49 are scaled so that A=1 and B=0. Question 50 is scales so that A=0, B=1, C=2, D=3, E=4 and F=5. Question 51 is scaled so that A=0, B=1, C=2, D=3, E=4, F=5, G=6, H=7 and I=8. The index of religiosity and the index environmental concern are then correlated with questions 49 through 52 in a 2 by 4 correlation matrix.

A partial correlation of religiosity versus environmental concern is done with the demographic questions, 49 through 52, partialled out.

PRESENTATION OF FINDINGS

Profile of Respondents

Figure 1 shows a profile of survey respondents. Dividing the sample by gender there are 126 females (51.85%) and 117 males (48.15%).

By age, the sample contains seventeen (7%) under the the age of twenty-five. Thirty-seven (15.22%) are between the ages of twenty-six and thirty-five years old. Fifty-eight (23.87%) are between thirty-six and forty-five years old. Fifty-four (22.22%) are between the ages of forty-six and fifty-five. Forty-seven (19.34%) of the participants are between fifty-six and sixty-five years old. Thirty (12.35 %) of the participants are over sixty-five years old.

Looking at income, eighteen (7.56%) have incomes below \$9,999. Thirty-one (13.03%) have incomes between \$10,000 and \$19,999. Fifty-two (21.85%) have incomes between \$20,000 and \$29,999. Eighty (33.61%) have incomes between \$30,000 and \$49,999. Fifty-seven (23.95%) have incomes greater than \$50,000.

Considering education, two (.82%) list some grade school as their highest level of education. Notes on the survey instrument indicate that these participants are currently in grade school. Two (.82%) have completed grade school. Twelve (4.94%) have some high school. Thirty-four (13.99%) have completed high school. Eighty-seven (35.80%) have completed some college. Forty-two (17.28%) have completed college. Twenty (8.28%) have done some graduate work. Forty-three (17.70%) have graduate degrees.

Eleven denominations are represented in the sample. Six (2.29%) are members of the Church of the Brethren. Nineteen (7.25%) are Presbyterians. Sixty (22.90%) are Baptists. Twenty-seven (10.30%) are Methodists. Eight (3.05%) are members of the Church of Christ. Eight (3.05%) are Seventh-Day Adventists. Six (2.29%) are members of Assembly of God. Seventy-five (28.62%) are Catholics. Ten (3.81%) are Non-Denominational. Five (1.90%) are members of Church of God. Nineteen (7.25%) are listed as "Other". "Other" is the combination of all respondents where there are less than five in a category.

SEX

MALE	48.15%
FEMALE	52.85%

AGE

<25	7.0%
26-35	15.22%
36-45	23.87%
46-55	22.22%
56-65	19.43%
>65	12.35%

INCOME

<\$9,999	7.56%
\$10,000-\$19,999	13.03%
\$20,000-\$29,999	21.85%
\$30,000-\$49,999	33.61%
>\$50,000	23.95%

EDUCATION

SOME GRADE SCHOOL	1.82%
COMPLETED GRADE SCHOOL	1.82%
SOME HIGH SCHOOL	4.94%
COMPLETED HIGH SCHOOL	13.99%
SOME COLLEGE	35.80%
COMPLETED COLLEGE	17.28%
SOME GRADUATE WORK	8.28%
GRADUATE DEGREE	17.70%

DENOMINATION

CH. OF THE BRETHREN	2.29%
PRESBYTERIAN	7.25%
BAPTIST	22.90%
METHODIST	10.30%
CH. OF CHRIST	3.05%
SEVENTH-DAY ADVENTIST	3.05%
ASSEMBLY OF GOD	2.29%
CATHOLIC	28.62%
NON-DENOMINATIONAL	3.81%
CH. OF GOD	1.90%
OTHER	7.25%

Figure 1. Profile of Respondents

Environmental Concern and Control Variables

Table 1 shows environmental concerns by control variables. Looking first at gender, we see that females have a slightly higher mean score, 2.98, and a slightly smaller standard deviation of .40 than the males who have a mean score of 2.89 with a standard deviation of .44. The correlation between gender and environmental concern is not statistically significant.

When age is considered, we see that environmental concern generally increases with age. The under twenty-five age group have the lowest mean score of 2.81 and a standard deviation of .31. The twenty-six to thirty-five year olds have a mean score of 2.82 with a standard deviation of .49. The thirty-six to forty-five year olds have a mean score of 2.93 with a standard deviation of .42. The fifty-six to sixty-five year olds have the highest mean score of 3.07 with a standard deviation of .29. Age is significantly correlated with environmental concern at the .005 level.

Income and environmental concern shows no clear direction. Those with income less than \$9,999 have a mean score of 2.96 with a standard deviation of .50. The income group between \$10,000 and \$19,999 drops down to 2.90 with a standard deviation of .49. The \$20,000 to \$29,999 income group has the

highest mean score of those reporting income--2.99 with a standard deviation of .37. The \$30,000 to \$49,999 income group has a mean score of 2.96 with a standard deviation of .40. The greater than \$50,000 income group has the lowest mean score of 2.87 with a standard deviation of .46. Those not reporting income have the highest mean score of 3.04 with a standard deviation of .27. Income is not significantly correlated with environmental concern.

Considering level of education and environmental concern, there is no clear direction. Those with some grade school have a mean score of 2.94 with a standard deviation of .46. Those who have completed grade school have a mean score of 3.00 with a standard deviation of .29. The group with some high school education have a mean score of 2.94 and standard deviation of .34. The high school graduates have a mean score of 2.92 with a standard deviation of .41. Those with some college have a mean score of 3.00 with a standard deviation of .42. The college graduates drop in mean score to 2.92 with a standard deviation of .47. Those with some graduate work have a mean score of 2.88 with a standard deviation of .43. Those with a graduate degree have a mean score of 2.98 with a standard deviation of .43. The correlation between education and environmental concern is not statistically significant.

Considering denomination, we find that those who are Non-Denominational have the highest mean score (3.26). Church of God has the second highest mean score (3.03). Methodists have a mean score of 2.99. Catholics have a mean score of 2.96. Baptists have a mean score of 2.93. Presbyterians have a mean score of 2.92. Church of the Brethren have a mean score of 2.88. Seventh-Day Adventists have a mean score of 2.84. "Other" have a mean score of 2.83. Church of Christ have a mean score of 2.80. The Assembly of God has the lowest mean score of 2.61. However, there is no statistically significant correlation between denomination and environmental concern.

Table 1

Environmental Concern and Control Variables

Variable		N	Mean	St. Dev.
Sex	Male	117	2.89	.44
	Female	126	2.98	.40
Age	under 25	17	2.81	.31
	26-35	37	2.82	.49
	36-45	58	2.93	.42
	46-55	54	2.91	.49
	56-65	47	3.07	.36
	over 65	30	3.03	.29
Income	Less than \$9,999	18	2.96	.50
	\$10,000-\$19,999	31	2.90	.49
	\$20,000-\$29,000	52	2.99	.37
	\$30,000-\$49,999	80	2.96	.40
	Greater than \$50,000	57	2.87	.46
	Unreported	5	3.04	.27
Education	Some grade school	2	2.94	.46
	Completed grade school	2	3.00	.29
	Some high school	12	2.94	.34
	High school graduate	34	2.92	.41
	Some college	87	3.00	.42
	College graduate	42	2.92	.47
	Some graduate work	20	2.88	.43
	Graduate degree	43	2.98	.43
Denomination	Ch. of the Brethren	6	2.88	
	Presbyterian	19	2.92	
	Baptist	60	2.93	
	Methodist	27	2.99	
	Ch. of Christ	8	2.80	
	7th Day Adventist	8	2.84	
	Assembly of God	6	2.61	
	Catholics	75	2.96	
	Non-Denominational	10	3.26	
	Church of God	5	3.03	
	Other	19	2.83	

Religiosity and Control Variables

Table 2 describes the relationship between religiosity and the control variables. Considering gender, females have a slightly higher mean score of 3.88 with a standard deviation of .18 over males with a mean score of 3.82 and a standard deviation of .22. However, the correlation between gender and religiosity is not statistically significant in this study.

By age, we see that the under twenty-five age group has a mean score of 3.81 with a standard deviation of .25. The twenty-six to thirty-five year old age group has a mean score of 3.83 with a standard deviation of .24. The thirty-six to forty-five year old age group has a mean score of 3.89 with a standard deviation of .15. The forty-six to fifty-five year olds have a mean score of 3.83 with a standard deviation of .19. The fifty-six to sixty-five year olds have a mean score of 3.81 with a standard deviation of .25. The highest mean score is among the over sixty-five year old group--3.92 with a standard deviation of only .12. The correlation between age and religiosity is not statistically significant in this study.

By income, we see that the less than \$9,999 income group, the \$10,000 to \$19,999 income group, and the \$20,000 to \$29,999

income group all have mean scores of 3.89 with their respective standard deviations being .25, .15, and .18. The \$30,000 to \$49,999 income group drops slightly in mean score to 3.84 with a standard deviation of .20. The greater than \$50,000 income group has a mean score of 3.87 with a standard deviation of .23. Those not reporting income have a mean score of 3.98 with a standard deviation of .023. The correlation between income and religiosity is statistically significant. As income increases, religiosity decreases.

By education, we find that those with some grade school have the highest mean score of 3.98 with a standard deviation of .03. The completed grade school group have a mean score of 3.86 with a standard deviation of .18. Those with some high school have a mean score of 3.88 with a standard deviation of .19. The high school graduates have a mean score of 3.89 with a standard deviation of .16. Those with some college education drop to 3.87 with a standard deviation of .19. College graduates drop to 3.85 with a standard deviation of .21. Those with some graduate work have the lowest mean score of 3.78 with a standard deviation of .25. Education is significantly correlated with religiosity. As education increases, religiosity decreases.

Table 2

Religiosity and Control Variables

Variable		N	Mean	St. Dev.
Sex	Male	115	3.82	.22
	Female	126	3.88	.18
Age	under 25	17	3.81	.24
	26-35	37	3.83	.24
	36-45	57	3.89	.15
	46-55	53	3.83	.19
	56-65	47	3.81	.25
	over 65	30	3.92	.12
Income	Less than \$9,999	18	3.89	.25
	\$10,000-\$19,999	31	3.89	.15
	\$20,000-\$29,000	51	3.89	.18
	\$30,000-\$49,999	79	3.84	.20
	Greater than \$50,000	57	2.87	.23
	Unreported	5	3.98	.02
Education	Some grade school	2	3.98	.03
	Completed grade school	2	3.86	.18
	Some high school	12	3.88	.19
	High school graduate	34	3.89	.16
	Some college	87	3.87	.19
	College graduate	42	3.85	.21
	Some graduate work	20	3.80	.18
	Graduate degree	42	3.78	.25

Environmental Concerns

Table 3 lists environmental concerns by mean score and shows the standard deviation. Not surprisingly, business and industry should bear the cost of treating their own waste receives the highest mean score of 3.75 with the lowest standard deviation of .58. The need for environmental regulations for companies even though they provide employment receives a mean score of 3.52 with a standard deviation of .82. When asked about willingness to add 10% onto the purchase price of a new house in order for the developer to provide safeguards to the environment the mean score is 2.26 with a standard deviation of 1.24

Belief that litter is a serious problem in this country receives the second highest mean score of 3.58 with a standard deviation of .74 while the behavioral question of whether one picks up litter and disposes of it receives a mean score of only 2.89 with a standard deviation of 1.13.

The belief that conservation of remaining forests in the United States is of utmost importance receives a mean score of 3.58 with a standard deviation of .71.

The benefits of visiting a natural area to provide refreshment and to make it easier to handle pressures of life has a mean score of 3.53 with a standard deviation of .77.

Concern for future generations if something is not done about polluting and using up natural resources has a mean score of 3.53 with a standard deviation of .76. However, the belief that environmental conditions are as bad as environmentalists say has a mean score of only 2.94 with a standard deviation of .99.

The choice of a fuel-efficient car and the use of non-leaded gasoline have respective mean scores of 3.48 and 3.47 and their respective standard deviations are .83 and .87. However, the mean score drops to 3.00 when the question is whether they would support legislation that would fine drivers of cars which have too much noise and pollution. When asked about retaining the maximum highway speed at 55 mph, the mean score drops to 2.90 with a standard deviation of 1.48.

Willingness to use detergents which are less polluting receives a mean score of 3.34 with a standard deviation of .84.

Favoring a returnable soft drink bottle bill has a mean score of 3.29 with a standard deviation of 1.16.

The belief that swamps and marshes should not be drained to create building sites receives a mean score of 3.28 with a standard deviation of 1.03. Individuals should not be free to seek short term economic gain over long term environmental concerns has with a mean score of 3.27 and a standard deviation of 1.05. The statement about whether private land owners should be required to use land in a way that minimizes damage done to the environment has a mean score of 3.12 with a standard deviation of 1.04.

Choosing native plants receives a mean score of 3.25 with a standard deviation of .93.

Not purchasing an item felt to be harmful to the environment receives a mean score of 3.22 with a standard deviation of .95.

Favoring more bicycle paths on city streets receives a mean score of 3.21 with a standard deviation of .95.

The general question of whether people consider themselves committed to preserving and protecting the environment receives a mean score of 3.15 with a standard deviation of .84.

Willingness to return to a simpler, less mechanized style of life in order to protect the environment has a mean score of 2.94 with a standard deviation of 1.04

Willingness to report anyone seen polluting receives a mean score of 2.52 with a standard deviation of 1.13.

Table 3

Environmental Concerns Listed by Mean Score with Standard Deviation

Environmental Concerns	Mean	St.Dev.
Business and industry and cost of waste	3.75	.58
Problem of litter	3.58	.74
Forest conservation	3.58	.71
Natural area visits	3.55	.77
Need for environmental regulations	3.53	.82
Concern for future generations	3.53	.76
Fuel efficiency	3.48	.83
Non-leaded gas/leaded gas	3.47	.87
Detergents	3.34	.84
Soft-drink bottle bill	3.29	1.16
Draining swamps and marshes	3.28	1.03
Economics/environment	3.27	1.05
Use than native plants	3.25	.93
Use of harmful products	3.22	.95
Bicycle paths	3.21	1.06
Preserving and protecting environment	3.15	.84
Minimize land damage	3.12	1.04
Auto exhaust emissions	3.00	1.04
Return to simpler life-style	2.94	1.10
Environmental conditions	2.94	.99
55 mph speed limit	2.90	1.48
Picking up litter	2.89	1.13
Pollution reporting	2.52	1.13
Strip mining	2.42	1.17
Safeguards to environment	2.26	1.24
Herbicides and pesticides	2.13	1.27
Population control	1.92	1.45
Car-pool	1.85	1.43
Billboard Use	1.80	1.46
Use of public transportation	1.06	1.34

Environmental Concerns and Religiosity

Table 4 shows environmental concerns which are significantly correlated to religiosity. The index of environmental concern significantly correlates with religiosity at .24437 with a p value of .0001. This means that the correlation is small (.24437) but that it is highly significant (.0001).

The strongest correlation is found with concern for future generations with a correlation coefficient of .25923 and a p value of .0001. The importance of conservation of remaining forests in the United States correlates at .25733 with a p value of .0001. Commitment to preserving and protecting the environment has a correlation coefficient of .24461 with a p value of .0001. Willingness to report anyone polluting the environment has a correlation coefficient of .21572 with a p value of .0008.

Retaining the maximum highway speed at 55 mph in order to conserve fuel has a correlation coefficient of .19930 with a p value of .00019.

The belief that litter is a serious problem in this country has a correlation coefficient of .14358 with a p value of .0258.

Willingness to return to a simpler lifestyle has a correlation coefficient of .13829 with a p value of .0322.

Not purchasing items felt to be harmful to the environment has a correlation coefficient of .13037 with a p value of .0450.

Refreshment from visiting a natural area has the lowest statistically significant correlation with a coefficient of .12874 and a p value of .0473.

When the factors of gender, age, income, education and denomination are removed, there is no longer a statistically significant correlation between environmental concern and religiosity.

Table 4

Environmental Concerns Significantly Correlated with
Religiosity

Environmental Concerns	Correlation Coefficient	p value
Index of environmental concern	.24437	.0001
Concern for future generations	.25923	.0001
Forest conservation	.25733	.0001
Preserving and protecting environment	.24461	.0001
Pollution reporting	.21572	.0008
55 mph speed limit	.19930	.0019
Problem of litter	.14358	.0258
Return to simpler life-style	.13829	.0322
Purchase of harmful products	.13037	.0450
Natural area visits	.12874	.0473

DISCUSSION

Question

This research began with the hypothesis that there is a positive correlation between strength of Christian commitment and concern for the environment. It is found that there is a small but highly statistically significant correlation between strength of Christian commitment and environmental concern. This means that, for the sample studied, as an individual is more religious, he is also more concerned for the environment. That the correlation is highly significant, means that it is very unlikely that this small correlation is the result of chance.

When the control variables of gender, age, income, education and denomination are removed, the correlation is no longer statistically significant. This means that gender, age, income, education and denomination also have some correlation with environmental concern which coincide with religiosity.

These findings tend to refute McHarg's charge that Judeo-Christian tradition has brought about our present environmental crisis. If McHarg's line of reasoning is followed, it would seem that the stronger the Judeo-Christian influence

the weaker the concern for the environment. Yet, in an area which is highly religious, we find a correlation between Christian commitment and concern for the environment. However, the fact that the correlation is small should chastise the Christian community. The strong Christian commitment found in the sample implies a knowledge of God's teachings. Christianity teaches that Christians are to be concerned about what God is concerned about and we know of God's concern for the environment, therefore, it would follow that Christians are to be concerned about the environment. From this perspective, however, Christians have a long way to go since their goal should be a perfect correlation between strength of Christian commitment and environmental concern.

Sample

The sample is highly religious. This is not surprising since the sample is drawn from those who attend church in an area which is highly religious. According to a poll of four hundred Roanoke Valley residents taken in the fall of 1986 and sponsored by the Roanoke Times and News World, 75.% of the population are members of a church or synagogue, 98.7% believe in God or a universal spirit, 81.3% believe in life after death, and 59.% believe that the Bible is the actual word of God and is to be taken literally.

Results

That age positively correlates with environmental concern is unexpected and tends to suggest that environmental issues are not successfully being taught in the classroom. Perhaps, concern for the environment comes with the wisdom of years.

That income and education are not significantly correlated with environmental concern is most surprising. It is commonly thought that there is a strong correlation between education and concern for the environment and since education and income normally correlate, a correlation would be found with income as well.

The denominational differences found are probably not the result of any teaching within the denomination but due to the fact that different denominations attract different classes which have different education and income levels.

Over all, the sample expresses considerable concern for the environment. From this it seems that there may be greater support for environmental issues than is generally assumed. For example, in Table 3 where environmental concerns are listed by mean score, we see that most of the thirty items have a majority of respondents answering in ways which express concern for the environment.

Looking at those questions which receive the lowest scores can also give us useful information. It is not surprising that population control is listed as twenty-seventh on the list. This is probably the result of fear of government intervention into private matters. Two other issues which also rate low are willingness to form a car-pool and use of public transportation. These low scores suggest that people are reluctant to give up the personal freedom of independent travel. They also suggest that innovative approaches must be taken before we can hope to get public support for transportation issues.

A majority of people indicate that they would use a billboard if they thought it to be the best way to advertise their business. This result is surprising. It suggests that this population is either not offended by billboards or they are more concerned about freedom to advertise. It might also suggest a lack of support for "billboard laws."

Considering the areas where significant correlation is found between environmental concern and religious commitment, Table 4 shows that the question about concern for future generations has the highest correlation with religiosity. This may relate to the Christian teaching of concern for others.

Future Research Questions

Three main areas for future research have emerged from this research. The first and most obvious is the question of environmental values for other religious groups. Are there differences between Jews and Christians? If there are differences, to what can they be attributed? How do other religions compare in environmental values to those which hold the Judeo-Christian tradition?

The second question is how does the fact that the sampled population is highly religious influence the results? How would the results differ with a less religious sample?

The third area for future research is the study of how location influences environmental attitudes. Is there a difference in environmental concern which is the result of a rural or an urban experience?

As we come to know more about what factors shape our attitudes toward the environment, we should become better able to education people toward concern for the environment.

APPENDIX A. COVER LETTER

A LAND-GRANT UNIVERSITY



VIRGINIA POLYTECHNIC INSTITUTE AND STATE UNIVERSITY

Blacksburg, Virginia 24061

Landscape Architecture

November 24, 1986

Dear Survey Participant,

Over the past several years there has been discussion about what shapes our beliefs and attitudes toward the environment. Some people suggest that religious values play a role in shaping our attitudes toward the environment. Through this study, we hope to gain a better understanding of the relationship between people's religious values and attitudes toward the environment.

Your church is one of a small number in which people are being asked to give their opinion on these matters. It was drawn in a random sample of churches in the Roanoke area.

Participation in this survey is voluntary. If you feel this survey or any questions contained in the survey infringe on your personal privacy, please do not complete it. If you do complete the survey, you may be assured that the results will remain anonymous.

We ask that you return the questionnaire in the postage free envelope which has been provided.

The results of this research will be written into a thesis document which will be stored in the Virginia Tech library and will be available to all interested persons. You may receive a summary of results by writing "copy of results requested" on the back of the return envelope, and printing your name and address below it. Please do not put this information on the questionnaire itself.

Should you have any questions regarding the survey or its intent, please contact me or my graduate advisor, Professor Bork at (703) 961-5583.

Thank your for your assistance.

Sincerely,

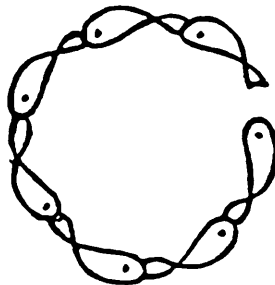
Elizabeth N. Herman

APPENDIX B. SURVEY INSTRUMENT

STUDY OF CHRISTIAN ATTITUDES TOWARD
MAN'S STEWARDSHIP OF THE ENVIRONMENT

The purpose of this study is to better understand those factors which influence our attitudes toward the environment. This study looks specifically at religious commitment as a possible factor influencing attitudes toward the environment. The results will be used to write a master's thesis in landscape architecture. Please answer all the questions. If you wish to comment on any questions or qualify your answers, please feel free to use the space in the margins. Your comments will be read and taken into account.

Thank you for your help.



Elizabeth N. Herman, Graduate Student
Prof. Dean Bork, Advisor
Landscape Architecture Department
Virginia Polytechnic and State University
Blacksburg, Virginia 24061

First, we would like to ask some questions about you and the environment. (Circle letter of your answer.)

1. I believe that environmental conditions are as bad as environmentalist say.
 - A. AGREE
 - B. TEND TO AGREE
 - C. UNDECIDED
 - D. TEND TO DISAGREE
 - E. DISAGREE

2. I am concerned about the kind of life my children or future generations may have if something isn't done about pollution and the using up of our natural resources.
 - A. AGREE
 - B. TEND TO AGREE
 - C. UNDECIDED
 - D. TEND TO DISAGREE
 - E. DISAGREE

3. Visiting a natural area refreshes me so that I am better able to handle the pressures and problems of every day life.
 - A. AGREE
 - B. TEND TO AGREE
 - C. UNDECIDED
 - D. TEND TO DISAGREE
 - E. DISAGREE

4. Litter is a serious problem in this country.
 - A. AGREE
 - B. TEND TO AGREE
 - C. UNDECIDED
 - D. TEND TO DISAGREE
 - E. DISAGREE

5. An individual should be free to seek short term economic gains, even if it is at the expense of long term environmental benefits.
 - A. AGREE
 - B. TEND TO AGREE
 - C. UNDECIDED
 - D. TEND TO DISAGREE
 - E. DISAGREE

6. I would use a billboard if it seemed the best way to advertise my business or product.
- A. AGREE
 - B. TEND TO AGREE
 - C. UNDECIDED
 - D. TEND TO DISAGREE
 - E. DISAGREE
7. Private land owners should be required to use land in a way that minimizes damage done to the environment.
- A. AGREE
 - B. TEND TO AGREE
 - C. UNDECIDED
 - D. TEND TO DISAGREE
 - E. DISAGREE
8. Keeping down weeds and insect pests on your property is more important than the small amount of herbicide or pesticide you add to the environment when you kill them.
- A. AGREE
 - B. TEND TO AGREE
 - C. UNDECIDED
 - D. TEND TO DISAGREE
 - E. DISAGREE
9. I would report anyone I saw polluting the environment.
- A. AGREE
 - B. TEND TO AGREE
 - C. UNDECIDED
 - D. TEND TO DISAGREE
 - E. DISAGREE
10. When I find litter in public places, I pick it up and dispose of it.
- A. AGREE
 - B. TEND TO AGREE
 - C. UNDECIDED
 - D. TEND TO DISAGREE
 - E. DISAGREE
11. I would be willing to pay an additional 10% on the purchase of a new house for the developer to provide safeguards for the environment.
- A. AGREE
 - B. TEND TO AGREE

- C. UNDECIDED
- D. TEND TO DISAGREE
- E. DISAGREE

12. I favor using detergents that are less polluting even though they may be more expensive.

- A. AGREE
- B. TEND TO AGREE
- C. UNDECIDED
- D. TEND TO DISAGREE
- E. DISAGREE

13. Fuel efficiency is important to me in deciding which car to purchase.

- A. AGREE
- B. TEND TO AGREE
- C. UNDECIDED
- D. TEND TO DISAGREE
- E. DISAGREE

14. I do not purchase items that I feel are harmful to the environment.

- A. AGREE
- B. TEND TO AGREE
- C. UNDECIDED
- D. TEND TO DISAGREE
- E. DISAGREE

15. If I lived 15 minutes or more from work, I would probably try to form a car-pool.

- A. AGREE
- B. TEND TO AGREE
- C. UNDECIDED
- D. TEND TO DISAGREE
- E. DISAGREE

16. I try to take public transportation whenever possible.

- A. AGREE
- B. TEND TO AGREE
- C. UNDECIDED
- D. TEND TO DISAGREE
- E. DISAGREE

17. I believe that it is important to use non-leaded gasoline even though it is more expensive than leaded gasoline.

- A. AGREE
- B. TEND TO AGREE
- C. UNDECIDED
- D. TEND TO DISAGREE
- E. DISAGREE

18. Even though swamps and marshes filter our water and provide homes for wildlife, I favor draining them to create building sites in areas experiencing rapid growth.

- A. AGREE
- B. TEND TO AGREE
- C. UNDECIDED
- D. TEND TO DISAGREE
- E. DISAGREE

19. In order to conserve fuel, I favor retaining the maximum highway speed at 55 mph.

- A. AGREE
- B. TEND TO AGREE
- C. UNDECIDED
- D. TEND TO DISAGREE
- E. DISAGREE

20. Most companies can police themselves and, therefore, environmental regulations are unnecessary.

- A. AGREE
- B. TEND TO AGREE
- C. UNDECIDED
- D. TEND TO DISAGREE
- E. DISAGREE

21. Business and industry should bear the cost of treating their wastes.

- A. AGREE
- B. TEND TO AGREE
- C. UNDECIDED
- D. TEND TO DISAGREE
- E. DISAGREE

22. I favor stricter legislation on auto exhaust emissions.

- A. AGREE
- B. TEND TO AGREE
- C. UNDECIDED
- D. TEND TO DISAGREE
- E. DISAGREE

23. I favor a returnable soft drink bottle bill.

- A. AGREE
- B. TEND TO AGREE
- C. UNDECIDED
- D. TEND TO DISAGREE
- E. DISAGREE

24. I would favor more bicycle paths on city streets.

- A. AGREE
- B. TEND TO AGREE
- C. UNDECIDED
- D. TEND TO DISAGREE
- E. DISAGREE

25. If I were selecting landscape plants for my yard, I would choose plants that are native to the area.

- A. AGREE
- B. TEND TO AGREE
- C. UNDECIDED
- D. TEND TO DISAGREE
- E. DISAGREE

26. Population control requires some kind of government incentives.

- A. AGREE
- B. TEND TO AGREE
- C. UNDECIDED
- D. TEND TO DISAGREE
- E. DISAGREE

27. At the present time, there is a limited supply of available energy. Therefore, it is urgent that activities such as strip mining of coal continue, even though strip mining may be environmentally harmful.

- A. AGREE
- B. TEND TO AGREE
- C. UNDECIDED
- D. TEND TO DISAGREE
- E. DISAGREE

28. Conservation of remaining forests in the United States is of utmost importance.

- A. AGREE
- B. TEND TO AGREE
- C. UNDECIDED

- D. TEND TO DISAGREE
- E. DISAGREE

29. I would be willing to return to a simpler, less mechanized style of life in order to protect the environment.

- A. AGREE
- B. TEND TO AGREE
- C. UNDECIDED
- D. TEND TO DISAGREE
- E. DISAGREE

30. I see myself as committed to preserving and protecting the environment.

- A. AGREE
- B. TEND TO AGREE
- C. UNDECIDED
- D. TEND TO DISAGREE
- E. DISAGREE

Now would you please respond to a few questions about your religious beliefs. Remember, this is completely anonymous. Indicate the extent to which you agree or disagree with the following statements. (Circle the letter of your answer.)

31. I believe in God.

- A. AGREE
- B. TEND TO AGREE
- C. UNDECIDED
- D. TEND TO DISAGREE
- E. DISAGREE

32. I believe in the divinity of Christ.

- A. AGREE
- B. TEND TO AGREE
- C. UNDECIDED
- D. TEND TO DISAGREE
- E. DISAGREE

33. There is life after death.

- A. AGREE
- B. TEND TO AGREE
- C. UNDECIDED
- D. TEND TO DISAGREE
- E. DISAGREE

34. The Bible is the word of God.

- A. AGREE
- B. TEND TO AGREE
- C. UNDECIDED
- D. TEND TO DISAGREE
- E. DISAGREE

35. My relationship with the Lord is an important part of my life.

- A. AGREE
- B. TEND TO AGREE
- C. UNDECIDED
- D. TEND TO DISAGREE
- E. DISAGREE

36. The Holy Spirit is an important influence in my life.

- A. AGREE
- B. TEND TO AGREE
- C. UNDECIDED

- D. TEND TO DISAGREE
- E. DISAGREE

37. I love God with all my heart.

- A. AGREE
- B. TEND TO AGREE
- C. UNDECIDED
- D. TEND TO DISAGREE
- E. DISAGREE

38. Without religious faith my life would not have much meaning.

- A. AGREE
- B. TEND TO AGREE
- C. UNDECIDED
- D. TEND TO DISAGREE
- E. DISAGREE

39. I am willing to do whatever the Lord wants me to do.

- A. AGREE
- B. TEND TO AGREE
- C. UNDECIDED
- D. TEND TO DISAGREE
- E. DISAGREE

40. I encourage others to believe in Christ.

- A. AGREE
- B. TEND TO AGREE
- C. UNDECIDED
- D. TEND TO DISAGREE
- E. DISAGREE

41. I seek God's guidance when making important decisions in my life.

- A. AGREE
- B. TEND TO AGREE
- C. UNDECIDED
- D. TEND TO DISAGREE
- E. DISAGREE

42. I admit my sins to God and pray for forgiveness.

- A. AGREE
- B. TEND TO AGREE
- C. UNDECIDED
- D. TEND TO DISAGREE

E. DISAGREE

43. I pray frequently.

- A. AGREE
- B. TEND TO AGREE
- C. UNDECIDED
- D. TEND TO DISAGREE
- E. DISAGREE

44. I try to carry my religion over into all other dealings in my life.

- A. AGREE
- B. TEND TO AGREE
- C. UNDECIDED
- D. TEND TO DISAGREE
- E. DISAGREE

45. I share what I have with the poor.

- A. AGREE
- B. TEND TO AGREE
- C. UNDECIDED
- D. TEND TO DISAGREE
- E. DISAGREE

46. Are you a Christian?

- A. YES
- B. NO

47. If yes to question 46, what is your religious preference?

- A. PROTESTANT (specify denomination)_____
- B. CATHOLIC
- C. OTHER (specify)_____

48. How frequently did you attend religious services in a place of worship during the past year?

- A. REGULARLY (Once a week or more)
- B. OCCASIONALLY
- C. ONLY ON SPECIAL DAYS (Christmas, etc.)
- D. NOT AT ALL

Finally, we would like to ask a few questions to help interpret the results.(Circle the letter of your answer.)

49. Your sex.

- A. MALE
- B. FEMALE

50. What is your age?

- A. UNDER 25 YEARS
- B. 26-35 YEARS
- C. 36-45 YEARS
- D. 46-55 YEARS
- E. 56-65 YEARS
- F. OVER 65 YEARS

51. Which of the following categories best describes your total family income during 1985.

- A. LESS THAN \$9,999
- B. 10,000 TO 19,999
- C. 20,000 TO 29,999
- D. 30,000 TO 49,999
- E. OVER 50,000

52. What is the highest level of education that you have completed?

- A. NO FORMAL EDUCATION
- B. SOME GRADE SCHOOL
- C. COMPLETED GRADE SCHOOL
- D. SOME HIGH SCHOOL
- E. COMPLETED HIGH SCHOOL
- F. SOME COLLEGE
- G. COMPLETED COLLEGE
- H. SOME GRADUATE WORK
- I. GRADUATE DEGREE

53. Are you a member of a church?

- A. YES
- B. NO

Your contribution to this effort is very greatly appreciated. If you would like a summary of the results, please print your name and address on the back of the return envelope (NOT on this questionnaire). We will see that you get it.

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