

κτίσις IN ROMANS 8:18–23 IN LIGHT OF ANCIENT GREEK AND ROMAN ENVIRONMENTAL CONCERNS: A SUGGESTION

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Despite a great deal of study on the meaning of the word κτίσις in Romans 8:18–23, there is no consensus as to the meaning Paul ascribed to the word in this passage. There are three main views: that κτίσις may be referring to humanity only; that κτίσις may be referring to both human and non-human creation; that κτίσις may be referring to non-human creation only. In addition to reviewing the arguments set forth in favor of each view, this article seeks to bring to light pertinent factors drawn from the field of historical environmentalism, hitherto ignored by scholarship, which may lend added weight to the view that κτίσις refers to non-human creation.

Key Words: creation, Epistle to the Romans, Rom 8:18–23, historical environmentalism, nature, environment

1. Introduction

In Romans 8:18–23 Paul says:

The creation waits in eager expectation for the sons of God to be revealed. For the creation was subjected to frustration, not by its own choice, but by the will of the one who subjected it, in hope that the creation itself will be liberated from its bondage to decay and brought into the glorious freedom of the children of God. We know that the whole creation has been groaning as in the pains of childbirth right up to the present time.¹

Some of the key data concerning the use and meaning of the term found in *TDNT* can be summarized in the following way:

κτίσις (creation), a feminine noun, may indicate any one of the following meanings: the act of founding, establishing, or building; creation as the act of creating, creation; creation as the thing created (individual things or beings); a converted person (after a rabbinical usage referring to a

¹ All biblical quotations cited in this study are from the NIV, unless otherwise indicated.

man converted from idolatry to Judaism); the sum or aggregate of things created; or institution, ordinance.²

We may ask the question, What did Paul mean when he used the word κτίσις here? Three main answers to this question have been suggested: that κτίσις may refer to humanity only; that κτίσις may refer to both human and non-human creation; or that κτίσις may refer to non-human creation only.

This article seeks to briefly review the arguments presented in favor of each of these views. In addition, it will focus particularly on the hitherto ignored historical-environmental context of the biblical author, in order to discover possible influences from Paul's physical and intellectual environment upon his use of the term κτίσις.³

2. κτίσις as a Reference to Humanity Only

In support of the view that κτίσις is used by Paul in this passage to refer to man only, Hildebrecht Hommel points out similarities between Rom 1 and the passage under scrutiny. Both Rom 1 and Rom 8 have a subject which is relegated to ματαιότης "vanity." In Rom 1 it is a consequence of the Gentiles' rejection of God, while Rom 8 only mentions the state of subjection, not the reason. Another similarity is that in both passages God is the actor who brings about the subjection. Hommel argues that οὐχ ἔκουσα "not willing" in 8:20 is the counterstatement of παρέδωκεν αὐτοὺς ὁ θεός "God gave them over" in Rom 1:24, 26, and 28. Based on these parallels between Rom 1 and Rom 8, τὸν ὑποτάξαντα "the one who subjected" in 8:20 is therefore considered to be God and κτίσις should at least include humanity.

To strengthen his argument, Hommel shows the use Paul makes of Virgil's 4th *Eclogues*. He suggests that Virgil (as well as Paul) knew and possibly borrowed from, or were influenced by, the Jewish Sibylline Oracles. Hommel and John Gager in fact regard Virgil's passage as the "key" to the meaning of κτίσις in Rom 8.⁴ In *Ecl.* 4.50–52 the entire creation is shown to be participating in the joyful expectation of the new generation which will soon descend from heaven: "Behold the world bowing with its massive dome-earth and the expanse of sea and heaven's depth! Behold how all

² Werner Foerster, "κτίζω, κτίσις," *TDNT* 3:1027–28; cf. also Joseph Henry Thayer, *Thayer's Greek-English Lexicon of the New Testament* (Grand Rapids: Baker, 1977), 363.

³ This article is based upon a M.A. in Religion thesis of the same title, completed by the author in October 2006 at the Theological Seminary of the Adventist International Institute of Advanced Studies, Philippines.

⁴ Hildebrecht Hommel, *Schöpfer und Erhalter: Studien zum Problem Christentum und Antike* (Berlin: Lettner, 1956), 17–21. Compare also John G. Gager, Jr., "Functional Diversity in Paul's Use of End-Time Language," *JBL* 89 (1970): 325–37.

things exult in the age that is at hand!"⁵ However, Gager and Hommel point out that it is clear that Virgil is actually referring primarily to "the people of his own generation." They insist that the context of the passage shows that human beings, including the author, had to experience this longing as creatures first. They argue that in this passage of Virgil, and nowhere else, is the longing of a non-Christian for a new era of the whole cosmos so well shown.⁶ Hommel⁷ as well as Gager conclude that the word κτίσις refers to non-believing humans.⁸

To further support the view as to why κτίσις should refer to man only is a discussion of how the word is used in the NT. The New Testament uses κτίσις to primarily refer to humanity (see 2 Cor 5:17 and Gal 6:15), thus leading to the conclusion that everything Paul says in our passage when using the word "creation" should be applied to man. For Karl Barth, creation in the New Testament refers to man in general and therefore Rom 8:18–23 is using the word in the same way. He does admit that a secondary meaning can refer to sub-human life, but first and foremost the word should refer to man.⁹ Also, because of Paul's interpretation of κτίσις with slavery—the opposite of the free sons of God—Hommel believes that Paul is referring to humanity here, especially in light of 2 Cor 5:17: "Therefore, if anyone is in Christ, he is a new creation; the old has gone, the new has come!"

James Coffman cites Mark 16:15 ("Go into all the world and preach the good news to all creation") and Col 1:23b (This is the gospel that you heard and that has been proclaimed to every creature under heaven . . .) where κτίσις is used in both cases to refer to humans only and has no reference whatsoever to animals or inanimate portions of creation. He argues that there is no reason why Paul should suddenly use this word in a way not used before.¹⁰ Again, there is an admission that a secondary meaning can refer to sub-human life, but first and foremost the word should refer to man.¹¹

⁵ *Virgil in Two Volumes: I. Eclogues, Georgics, Aeneid II–VI* (transl. H. R. Fairclough; LCL; Suffolk: Richard Clay, 1986), 4:33.

⁶ Gager, Jr., "Functional Diversity in Paul's Use of End-Time Language," 328–29.

⁷ Hommel, *Schöpfer und Erhalter*, 17–21.

⁸ Gager, "Functional Diversity in Paul's Use of End-Time Language," 328–29.

⁹ Karl Barth, *A Shorter Commentary on Romans* (London: Oxford University Press, 1968), 99.

¹⁰ James Burton Coffman, "Commentary on Romans 8," n.p. [cited 10 January 2008]. Online: <http://www.studydrive.org/com/bcc/view.cgi?book=ro&chapter=008>.

¹¹ Barth, *A Shorter Commentary on Romans*, 99.

Also supporting the interpretation that κτίσις in Rom 8 is referring exclusively to humanity, but following a different tack, William H. Bell Jr. argues against the use of personification to support the interpretation of κτίσις as referring to the environment. He believes that κτίσις is referring exclusively to humanity because this chapter is thus far dealing exclusively with the state of humanity. He therefore asserts that κτίσις refers rather to "rational, intelligent mankind" in need of deliverance from sin and death.¹² Likewise, Rich Deem asks the question as to why Paul would suddenly begin using allegory in a passage which is entirely focused on the role of the Holy Spirit in the lives of people. He therefore concludes that Paul must be referring to humans only in this passage.¹³

3. κτίσις as a Reference to both Human and Non-human Creation

Supporting a more moderate view that κτίσις is referring to both man (either saved and/or unsaved) and non-human creation, Geoffrey Lampe and Leon Morris assert that κτίσις here focuses on how non-human creation forms the backdrop for the redemption of humanity. Lampe says that man, having a body, is also part of that creation and that the created world is inexorably connected with man.¹⁴

This view relies on the clear reference to Gen 3:17 which does not seem to deal only with man, but with the entire creation. In agreement with Lampe and Morris, John Gibbs points out that this verse is indicating solidarity between man and creation. He also believes that this view is based on the precedent found in Jewish literature indicating an understanding of solidarity between man and non-human creation.¹⁵ Apocalyptic and Old Testament prophecy indicate that creation suffers because of humanity's sin and then appeals to God. Gibbs therefore asserts that "the creation may be

¹² William H. Bell, Jr., "The Illusion of the Conclusion: Another Look at Romans 8:18–23," n.p. [cited 10 January 2008]. Online: http://www.preteristarchive.com/Preterism/bell-william_p_07.html.

¹³ Rich Deem, "Does Romans 8:19–22 Refer to the Cursed Creation?," paragraph 8 [cited 27 January 2004]. Online: <http://www.godandscience.org/youngearth/romans8html>.

¹⁴ G. W. H. Lampe, "The New Testament Doctrine of κτίσις," *SJT* 17 (1964): 455; Henry M. Morris, *The Biblical Basis for Modern Science* (Grand Rapids: Baker, 1988), 212.

¹⁵ John G. Gibbs, *Creation and Redemption: A Study in Pauline Theology* (Leiden: Brill, 1971), 40. See especially Isa 24:5; 34:4, 9; Ezek 38:19b–23; Joel 3:15; Zech 14:12–17; 4 Ezra 6:55; 7:11; 1 Enoch 1:6–7; 2–5:3; 7:5–6; 41:8; 54:7–10, 65, 83–90, 101; *Sibylline Oracles III; Assumption of Moses* 1:12; 10; Mark 13:19; Rev 1:6, 13, 19; 8:5–12; 9:3–6; 16:3–4, 17–19; 18:8; *Apocalypse of Peter; Apocalypse of Paul* 3–6, and the *Apocalypse of Thomas*.

taken to mean the entire creation"¹⁶ which includes both man and non-human creation.

Franz Leenhardt says that this passage is dealing with the "realization of the redemptive plan." Κρίσις therefore indicates "the world in so far as it is distinct from the church, the world as the sphere in which the saving action embodied in Christ and believers is exercised."¹⁷

Believing that Paul teaches a "redemption that affects God's entire creation," Peter Stuhlmacher directs our attention to passages such as Isa 11:1–9 and Rev 22 which he believes imply that "creation is not to be limited to humanity, but includes the entire world created by God, which encircles and influences mankind."¹⁸

Susan Eastman also believes that κρίσις is referring to both man and creation and supports her view with three arguments, the first being that the wording of v. 23 does not exclude *non*-believing humanity in the term κρίσις. Second, she argues that humanity was not subject to futility "willingly" since this is contradictory to Paul's thoughts as expressed in Rom 1:18–32 and Rom 9–11. She suggests that Paul is inferring the futility spoken of is a result of "being delivered over to sinful behavior and shut up into disobedience, in order to become an object of mercy."¹⁹ Third, she cites other passages where birth pangs are associated with the "woes of Israel."²⁰ She believes that ὠδίνω from συνὠδίνω "to be in birth pangs," when used in the LXX, refers most often to the woes of the daughter of Zion (see Mic 4:10; Isa 26:17; 66:8–9; Jer 4:31; 6:24). The fate of both Israel and all creation are intertwined with one another. As a result, it is believed that κρίσις in this passage should be interpreted as including both the natural world, as well as humanity.²¹

4. ΚΡΙΣΙΣ as a Reference to Non-Human Creation Only

Proponents of the view that κρίσις is being used to refer to non-human creation only, that is, the environment, often point to the use of κρίσις in the Septuagint, the New Testament, and Paul. κρίσις is used sixteen times in the

¹⁶ Gibbs, *Creation and Redemption*, 40.

¹⁷ Franz J. Leenhardt, *The Epistle to the Romans* (Grand Rapids: Eerdmans, 1988), 219.

¹⁸ Peter Stuhlmacher, *Paul's Letter to the Romans: A Commentary* (Louisville: Westminster/John Knox, 1994), 134.

¹⁹ Susan Eastman, "Whose Apocalypse? The Identity of the Sons of God in Romans 8:19," *JBL* 121 (2002): 263.

²⁰ *Ibid.*

²¹ *Ibid.*

Septuagint²² and usually it indicates “that which has been brought into being: the universe.”²³ In three of the occurrences it refers to humanity only (Ps 73[74]:18; Wis 5:17; Sir 16:17) and six times it means non-human creation (Tob 8:15; Ps 103[104]:24; Wis 2:6; 16:24; 19:6; Sir 43:25). The remaining seven times κτίσις may be referring to both human and non-human creation, excluding the possibility of reference to non-human creation only (Tob 8:15; Jdt 9:12; 16:14; Sir 49:16; 3 Macc 2:2, 7; 6:2). In Tob 8:15; Wis 19:6; Sir 43:25 and Jdt 16:14 we find that πᾶσα ἡ κτίσις, the exact phrase found in Rom 8:22, is used to refer exclusively to animals,²⁴ except in the case of Jdt 16:14 which may refer to both but does not exclude the possibility reference to non-human creation only.²⁵

Κτίσις occurs nineteen times in the New Testament, thirteen of those by Paul, with four of these occurring in our passage (Mark 10:6; 13:19; 16:15; Rom 1:20, 25; 8:19, 20, 21, 22, 39; 2 Cor 5:17; Gal 6:15; Col 1:15, 23; Heb 4:13; 9:11; 1 Pet 2:13; 2 Pet 3:4; Rev 3:14).²⁶ Depending on the context, κτίσις can be translated as “creation” or “creature.”²⁷ Examples of its use with the meaning “creation” are Heb 4:13, Col 1:15, and Rom 1:25²⁸ as well as the passage under study.²⁹ Examples of its use with the meaning of “creature,” referring to non-believers, are found in Mark 16:15, Col 1:23, and Heb 4:13.³⁰

- ²² Edwin Hatch and Henry A. Redpath, *A Concordance to the Septuagint and the Other Greek Versions of the Old Testament (including the Apocryphal Books)* (2nd ed.; Grand Rapids: Baker, 1998), 795–96.
- ²³ Takamitsu Muraoka, *A Greek-English Lexicon of the Septuagint, Chiefly of the Pentateuch and the Twelve Prophets* (Louvain: Peeters, 2002), 334.
- ²⁴ Harry H. Hahne, “The Birth Pangs of Creation: The Eschatological Transformation of the Natural World in Romans 8:19–22,” 2 [cited 10 January 2008]. Online: <http://www.balboa.software.com/hahne/BirthPangs/pdf>.
- ²⁵ Since κτίσις is rare in the LXX, the apocrypha have been included without necessarily implying that Paul gave special attention to those books.
- ²⁶ *Computer Concordance to the Novum Testamentum Graece* (ed. Institute for New Testament Textual Research and the Computer Center of Münster University with the collaboration of H. Bachmann and W. A. Slaby; 2nd ed.; Berlin: Walter de Gruyter, 1985), 1071.
- ²⁷ Henry George Liddell and Robert Scott, *Greek-English Lexicon with a Revised Supplement* (Oxford: Clarendon, 1996), 1003.
- ²⁸ Frederick William Danker, *A Greek-English Lexicon of the New Testament and Other Early Christian Literature* (based on the 6th edition of Walter Bauer’s *Griechisch-Deutsches Wörterbuch*; 3rd ed.; Chicago: University of Chicago Press, 2000), 573.
- ²⁹ G. Abbott-Smith, *A Manual Greek Lexicon of the New Testament* (Edinburgh: T. & T. Clark, 1981), 260; J. B. Smith, *Greek-English Concordance to the New Testament: A Tabular and Statistical Greek-English Concordance Based on the King James Version with the English to Greek Index* (Scottsdale: Herald, 1981), 209; Danker, *A Greek-English Lexicon*, 573.
- ³⁰ W. E. Vine, “κτίσις,” in *An Expository Dictionary of New Testament Words with Their Precise Meanings for English Readers* (London: Oliphants, 1961), 255.

The phrase πᾶσα ἡ κτίσις, apart from its use in the Septuagint to refer to non-human creatures, occurs only twice more in the New Testament (Mark 16:15 and Col 1:23), both times referring to unbelievers.³¹ Paul, outside of our passage never uses the word κτίσις to refer to sub-human creation alone. It seems, however, that the frequent use of κτίσις in the LXX as a reference to non-human creation is a strong indicator that κτίσις in Rom 8:18–23 may very possibly be used to refer to the natural world alone, rather than to humanity or a combination of the two.

A method of elimination is often used to determine what is included in the term κτίσις as used by Paul in this passage. We know that good angels and heaven are not included here for they are not subject to corruption.³² The demons and unbelievers are not included because they do not “long for the revealing of the sons of God.”³³ Besides this, if Paul meant to include unbelievers, it would mean that he believed that all people will one day be exempted from the consequences of sin, which, in the larger context of the NT, is not the case (John 5:29). Those living outside of the will of God do not have a “joyful anticipation” of Christ’s second coming, but instead anticipate it with fear and trembling (Isa 33:14; Heb 10:27).³⁴ Even Christians must be excluded because Paul contrasts v. 23 “not only so but we ourselves also,” with v. 19 in which the creation “waits ... for the sons of God to be revealed,” and v. 21 in which the creation benefits from the freedom gained by the “children of God.”³⁵ What remains then? Only the non-human creation.³⁶ Thus, by a process of elimination, the view that κτίσις here refers only to non-human creation is firmly supported.

Because nature is often referred to with personifying language (e.g., Isa 24:4–7; Jer 12:4), proponents of the view that κτίσις refers to non-human creation in Rom 8:18–23 emphasize the use of personification in Scripture.³⁷

³¹ Adam Clarke, *Romans-Revelation* (Clarke’s Commentary; New York: Abingdon, 1977), 6:98.

³² Charles Ernest Burland Cranfield, *Romans* (ICC 1; Edinburgh: T. & T. Clark, 1985), 411–12.

³³ William Newell, “Romans 8: Expository Notes Verse by Verse,” paragraph 3 [cited 10 January 2008]. Online: <http://preceptaustin.org/romans8:18-39.htm>.

³⁴ Mark Dunagan, “Romans Chapter 8:19–23,” n.p. [cited 10 January 2008]. Online: <http://www.ch-of-christ.beaverton.or.us/Romans82.htm>.

³⁵ Cranfield, *Romans*, 408; Hahne, “Birth Pangs,” 2; Dunagan, “Romans Chapter 8:19–23,” paragraph 10.

³⁶ Cranfield, *Romans*, 408; John Albert Bengel, *New Testament Word Studies* (3 vols.; Grand Rapids: Kregel, 1971), 2:94; Robert Murray, *Epistle to the Romans*, 130; Thayer, *Thayer’s Greek-English Lexicon*, 363; Kenneth Barker and Douglas Moo, *Romans 1–8* (The Wycliffe Exegetical Commentary; Chicago: Moody, 1991), 552.

³⁷ Cranfield, *Romans*, 408; Eastman, “Whose Apocalypse?,” 263.

The various parts of nature are often described as having emotions, a will, intellect and capable of feeling pain or sorrow because of sin. Nature can cry in pain and sorrow (Gen 4:11; Isa 24:4, 7; Jer 4:28; 12:4), joy (Pss 65:12–13; 98:4, 7–9; Isa 14:7–8; 1 Enoch 7:6; 9:2; 87:1; 88:2; 4 Ezra 6:14–16; 7:55–56; 8:2–3; 10:9; 11:46; 12:43; *Apocalypse of Moses* 29:14), can experience fear in God's presence (Pss 77:16; 97:4–5; 114:3–8), have fear about eschatological disasters (1 Enoch 1:6; 4 Ezra 6:14–16), feel joy when the righteous are in the messianic kingdom (Isa 55:12), have consciousness and intellectual understanding (Isa 1:2), experience hope of eschatological deliverance (4 Ezra 11:46), and be obedient to God (1 Enoch 5:2–3; 75:2; 101:6–7; 2 Baruch 21:4; 48:8–10, 46). The Old Testament refers to how nature suffers because of sin (Gen 3:17; Isa 24:4–7; 33:9; Jer 4:4, 11, 26–28), and also to its eschatological renewal (Isa 11:6–9; 65:17–25; 66:22–23).³⁸

Regarding the argument that Paul was influenced by Virgil's 4th *Eclogue*³⁹ (4.50–52), there is no reason for insisting that such influence indicates that Paul is using κτίσις to refer to humanity alone. In *Ecl.* 4.50 the entire creation is shown participating in the joyful expectation of the new generation which will soon descend from heaven: "Behold the world bowing with its massive dome-earth and expanse of sea and heaven's depth! Behold, how all things exult in the age that is at hand!"⁴⁰ This passage may clearly be regarded as yet another example of personification of non-human creation, which indeed, instead of negating the view that κτίσις in Rom 8:18–23 refers to non-human creation only, in fact, supports it.

None of the verses which use personification, however, can support a restoration of the environment at the return of Christ. As it will be completely destroyed and recreated at the second coming (Matt 24:35; 2 Pet 3:1–13; Rev 21:1) and that there will be no eternal reward for the animals (2 Pet 2:12).

To argue that personification is out of place in this passage would be to deny Paul's intimate knowledge of the Old Testament and other sources which would naturally have influenced him when thinking of and writing about the natural world, sources which so often referred to the natural world in the language of personification.

To further establish Paul's use of κτίσις as referring to non-human creation only, we may explore the relationship between Rom 8:18–23 and Gen 3:17. The language of subjection and futility (τῆ γὰρ ματαιότητι ἣ κτίσις ὑπετάγη) combined with the qualification οὐκ ἔκούσα "not willingly" indi-

³⁸ Hahne, "Birth Pangs," 2.

³⁹ Hommel, *Schöpfer und Erhalter*, 17–21.

⁴⁰ *Virgil in Two Volumes*, 4:48.

cates a connection to Gen 3:17⁴¹ which shows that Adam's sin corrupted not only his own nature, but also that of the environment because, as a result, God cursed the ground. It cannot be said that humanity was subjected not of its own will, since Adam made the choice to act contrary to God's will, something the environment did not do.⁴²

Genesis 3:17 shows that not only man but also the world in which man lives is subject to the curse and to death. Adam's sin dragged the creation down into corruption. Just as man must be redeemed because of the fall, so creation must be redeemed because, through the fall of man, it was subjected to futility and frustration.⁴³

Those opposed to the idea that κτίσις in this passage refers to non-human creation only⁴⁴ emphasize this solidarity between humans and creation, insisting that κτίσις here refers to *both* humanity and non-human creation, not to non-human creation only. It is clear, however, that, throughout Scripture, non-human creation has formed a backdrop to the history of salvation involving humanity and humanity's relationship with God. In Rom 8:18–23 we see again the role of non-human creation in salvific history. Because of man's sin and subsequent behavior, non-human creation suffers and "groans" as it waits for the culmination of the story of salvation. There is no reason to insist that κτίσις in Rom 8:18–23 refers to both humanity and non-human creation. Non-human creation and humanity are mentioned separately, without denying the solidarity between them.

5. ΚΤΙΣΙΣ and Paul's Physical Milieu

No theologian, in discussing the interpretation of κτίσις, has gone into any depth concerning the influence Paul's physical and intellectual environment may have had on his writing, though slight allusions have been made.⁴⁵ This section will attempt to show that Paul very possibly could have seen, in the natural events and environmental trends of his day, the confirmation of God's expression of inspiration.

⁴¹ Cranfield, *Romans*, 408.

⁴² *Ibid.*; Eastman, "Whose Apocalypse?," 263; Bengel, *New Testament Word Studies*, 2:94.

⁴³ F. F. Bruce, *The Epistle of Paul to the Romans: An Introduction and Commentary* (TNTC 6; Grand Rapids: Eerdmans, 1976), 169; J. A. Fitzmyer, *Romans* (AB 33; Garden City: Doubleday, 1987), 505–6; K. S. Wuest, *Romans in the Greek New Testament for the English Reader: Wuest's Word Studies* (Grand Rapids: Eerdmans, 1976), 137.

⁴⁴ Lampe, "The New Testament Doctrine of κτίσις," 455; Morris, *The Biblical Basis for Modern Science*, 212.

⁴⁵ Fitzmyer, *Romans*, 505, 507.

The word *Ecology* is taken from the Greek roots οἶκος "home" or "house" (and by extension the whole inhabited earth) and λόγος "reason" or "study." Ecology is therefore "a rational study of how mankind interrelates with the home of the human species, the earth; with its soil and mineral resources; with its water, both fresh and salt; with its air, climates, and weather; with its many living things, animals and plants, from the simplest to the most complex; and with the energy received ultimately from the sun."⁴⁶

It is often incorrectly assumed that serious environmental degradation did not begin until the industrial revolution. The field of environmental history has shown especially in the Middle East, that a great deal of environmental degradation took place in the centuries leading up to and during the time of Paul.⁴⁷

Until approximately 4,000 years ago, most land was in a natural or semi-natural condition. Since that time populations grew and agricultural activities increased and diversified into lands previously untouched and/or which were vulnerable to damage from such activities. Often coastal forests were cleared in the interests of ship building, pottery kilns, and ore smelting. These activities, especially in times of drought, exploitation of vulnerable land, and population movements during the Roman period, easily led to land degradation.⁴⁸ In fact, the destructive effects of human activity covered large parts of the Roman Empire, many of which may have been noticed by Paul. Some of the factors which led to this environmental degradation will be discussed in detail in what follows.

Population Increases. After approximately 500 B.C., the population in the Greek colonies which had been established in the northern and southern coasts of the Mediterranean increased. With the onset of Roman power, this growth continued with more and more marginal land coming under cultivation. Along with this cultivation came environmental modifications such as drainage, the damming of rivers, and water transfer. An increasing number of highland people moved down to the lowlands, intensifying populations in these areas and placing greater stress on the land.⁴⁹

⁴⁶ J. Donald Hughes, *Ecology in Ancient Civilizations* (Baltimore: The Johns Hopkins University Press, 1994), 3.

⁴⁷ George Perkins Marsh, *Man and Nature, or, Physical Geography as Modified by Human Action* (New York: C. Scribner, 1869), 9.

⁴⁸ N. J. Yassoglou, "History of Desertification in the European Mediterranean," n.p. [cited 15 July 2005]. Online: <http://www.desertification.it/doc/ASINARA%20WEB/03yassoglou.htm>.

⁴⁹ *Ibid.*

Agriculture. About the time of Christ, land settlements were moving from the hardier “bottomland” to the more vulnerable hilly lands which were more susceptible to erosion.⁵⁰ The coastal areas of ancient Greece suffered as a result, with most of the soil horizons being severely eroded. Irrigation agriculture was practiced in the Euphrates and Tigris basins, bringing about soil erosion and salinization (i.e., a high concentration of toxic salt in the soil because of evaporation), which both contributed to desertification in the area.⁵¹ The agriculturalist Columella (who was born around the start of the first millennium and died ca. A.D. 70) remarked that the growing infertility of the land was due to poor husbandry.⁵²

Deforestation. Plato (427–347 B.C.), Theophrastus (c. 370–280 B.C.), Eratosthenes (276–194 B.C.), and Pliny the Elder (A.D. 23–79) all described desert-like conditions. Deforestation of coastal areas led to accelerated erosion on the limestone slopes which in turn led to desertification. Plato wrote in *Critias* (360 B.C.):

What now remains compared with what then existed is like the skeleton of a sick man, all the fat and soft earth having wasted away, and only the bare framework of the land being left. But at that epoch the country was unimpaired, and for its mountains it had high arable hills, and in place of the “moorlands,” as they are now called, it contained plains full of rich soil; and it had much forest-land in its mountains, of which there are visible signs even to this day; for there are some mountains which now have nothing but food for bees, but they had trees not very long ago, and the rafters from those felled there to roof the largest buildings are still sound. And besides, there were many lofty trees of cultivated species; and it produced boundless pasturage for flocks. Moreover, it was enriched by the yearly rains from Zeus, which were not lost to it, as now, by flowing from the bare land into the sea; but the soil it had was deep, and therein it received the water, storing it up in the retentive loamy soil; and by drawing off into the hollows from the heights the water that was there absorbed, it provided all the various districts with abundant supplies of spring waters and streams, whereof the shrines which still re-

⁵⁰ Bottomland is “low-lying, level land, usually highly fertile. The term signifies a grassy lowland formed by the deposition of alluvium along the margin of a watercourse; an alluvial plain or a flood plain; the floor of a valley.” Alberta Government, “Canada-Alberta Environmentally Sustainable Agriculture Agreement (CAESA): Soil Inventory Project Procedures Manual-Data Dictionary,” paragraph 8 [cited 20 December 2007]. Online: [http://www.agric.gov.ab.ca/\\$department/deptdocs.nsf/all/sag6175](http://www.agric.gov.ab.ca/$department/deptdocs.nsf/all/sag6175).

⁵¹ Yassoglou, “History of Desertification in the European Mediterranean.”

⁵² J. Donald Hughes, *Pan's Travail: Environmental Problems of the Ancient Greeks and Romans* (Baltimore: Johns Hopkins University Press, 1996), 99.

main even now, at the spots where the fountains formerly existed, are signs which testify that our present description of the land is true.⁵³

Eratosthenes accused the copper and silver smelting industries of causing the reduction of Cyprian coastal forests.⁵⁴

Gods and goddesses supposedly lived in mountainous and wooded areas and so places of special beauty were selected for the location of temples and holy places. Such places were protected from human and animal activities such as agriculture, hunting, grazing, and sometimes even fishing. These sacred groves were protected by the resident priests who may even have acted as forest rangers.⁵⁵

Although both the Greeks and the Romans kept these sacred groves of trees from being cut down, that is where their conservation of timber stopped. The great forests of Babylon, Greece, Lebanon (Phoenicia) and Italy were stripped. Due to this deforestation, some coastal cities, such as Leptis Magna in Libya with a population of 100,000,⁵⁶ became landlocked with siltation filling in the bays and mouths of rivers.⁵⁷ Large marshes and swamplands formed allowing mosquitoes to breed and entrance of the related disease of malaria into Greece in the fourth century B.C.⁵⁸

Wood was needed in abundance for almost every conceivable activity, from the construction of buildings, carts, and chariots, to works of art, not to mention the constant use of wood for fuel. Homer (eighth century B.C.) wrote of the forests resounding with the sounds of the iron axes of Greek loggers, with no tree, no matter how tall or broad, able to escape them.⁵⁹

Evidence of a wood energy crisis can be found in the way the Greeks used passive solar energy by orienting their homes and cities toward the sun. The Romans, however, simply imported wood over greater distances, even from as far away as the Black Sea,⁶⁰ Macedonia, and Chalcidice.⁶¹

Before human settlement began to significantly affect the landscape of ancient Israel, it used to be extensively forested. By ca. 1200 B.C., the begin-

⁵³ Plato, *Timaeus, Critia, Cleitophon, Menexenus, Epistles* (trans. R. G. Bury; LCL; Cambridge: Harvard University Press, 1989), 273, 275.

⁵⁴ Peter Coates, *Nature: Western Attitudes since Ancient Times* (Berkeley: University of California Press, 1998), 28.

⁵⁵ *Ibid.*, 31.

⁵⁶ Marsh, *Man and Nature*, 9.

⁵⁷ Environmental History Timeline, "Ancient Civilizations," n.p. [cited 10 January 2008]. Online: <http://www.radford.edu/~wkovarik/hist1/1ancient.html>.

⁵⁸ Hughes, *Ecology in Ancient Civilizations*, 70.

⁵⁹ *Ibid.*, 68.

⁶⁰ Environmental History Timeline, "Ancient Civilizations."

⁶¹ Hughes, *Ecology in Ancient Civilizations*, 71.

ning of the biblical period, forests had begun to give way to human activities, with "hills becoming bare of soil, or terraced for the purposes of agriculture, or covered with bushes and scrub."⁶² Before deforestation took place, the heavy rainfall from October to April was cushioned by the roots of trees and much of the moisture was retained. After deforestation, however, erosion ensued.

Destruction of Wildlife. Hunting was the pastime of the Greek nobility. There were also professional hunters who supplied markets with wild meat for food and skins for clothing. Often, wild animals were killed to protect domesticated ones. The larger predators such as lions and leopards were decimated and wolves and jackals were confined to the mountains.⁶³

The Roman games or *ludi* were the cause of a large-scale destruction of wild animals. In a series of twenty-six bouts, a total of 3,500 animals were killed under the auspices of Augustus (31 B.C.–A.D. 14). Nero (A.D. 54–68) once flooded an arena with salt water and filled this "sea" with polar bears and seals. In honor of Titus' dedication of the Colosseum (A.D. 80), 9,000 animals were killed in 100 days, 5,000 in one day alone.⁶⁴ The Roman military often was used to collect these animals from the far reaches of the empire, leading to the disappearance of the zebra, hippopotamus, rhinoceros, elephant, and lion from North Africa, as well as the tiger and lion from the Near East.⁶⁵

Herd Animals. Shepherds, in an attempt to create larger grazing areas for their flocks, set forest fires and left them to burn uncontrolled. Trees were often girdled to allow grass to grow easier. Regeneration of the forest was retarded by indiscriminate grazing habits. Pigs, goats, and even sheep and cattle which do not ordinarily eat leaves and twigs were pastured in the forests. Goats did the greatest damage by eating any new saplings and climbing into large trees to eat their foliage.⁶⁶ With the disappearance of the forests, the heavy seasonal rains washed away the soil causing erosion and destroying any chance for the regrowth of trees. It can be said that this grazing of domesticated animals was the "most consistent and widespread force of environmental degradation in ancient Greece."⁶⁷

Air Pollution. Contrary to what is commonly believed, air pollution did exist before the industrial revolution. In fact, the sight of smoke indicated to

⁶² John William Rogerson, *Atlas of the Bible* (New York: Facts on File, 1985), 63.

⁶³ *Ibid.*, 72.

⁶⁴ Coates, *Nature: Western Attitudes since Ancient Times*, 37.

⁶⁵ *Ibid.*

⁶⁶ Hughes, *Ecology in Ancient Civilizations*, 69.

⁶⁷ *Ibid.*, 75.

Greek authors the presence of human habitation.⁶⁸ Large towns were commonly plagued with pollution from dust, wood smoke, animal manure, and tanneries.⁶⁹ The Roman poet Quintus Horatius Flaccus, or Horace (65–68 B.C.), spoke of “the smoke, the wealth, the noise of Rome . . .,” as did others of his contemporaries. Romans, living in the largest city in the world at the time, called the air pollution *gravioris caeli* “heavy heaven” or *infamis aer* “infamous air.” The air was fouled by the odors from garbage and sewage runoff and industries such as smelting and tanning.⁷⁰

Water Pollution. Although water pollution was not as severe in some areas, such as in Jewish and Hindu cities because of their strict religious codes concerning cleanliness, ancient Rome (as well as other major ancient cities from Babylon to Athens) was infamous for its sewage-filled streets.⁷¹ Human waste and garbage was thrown out into the city streets and rivers.

Occupational Disease, Metals, and Mining. Herodotus (484–425 B.C.) once said that an entire mountain had been thrown upside down because of mining. Even today, scars from Greek mines are visible on the landscape. Slaves were used, their life span predictably short due to poisonous substances like mercury and lead and extremely poor working conditions.⁷² Quarrying, a major activity in Greece, also led to a great deal of environmental destruction. Limestone, marble, conglomerate, and granite were used for temples and other buildings. The scarring of the landscape and the resultant erosion are still noticeable today.⁷³

Ancient Rome was well acquainted with occupational disease. According to the Roman engineer Vitruvius (70–25 B.C.), the lead and mercury mines and smelters caused many of the workers to suffer from exposures to the metals.⁷⁴ The Greek physicians Hippocrates (460–377 B.C.) and Galen (A.D. 131–201) noted the effect of the occupation on health. Galen specifically mentions the dangers to copper miners of acid mists. The mines also affected many parts of the Mediterranean by contaminating the water courses with mercury, lead, and arsenic.⁷⁵ Nicander (197–130 B.C.), a Greek physician and poet, condemned “deadly white lead” used for paint and cosmetics.⁷⁶ Lead was used also for water pipes, tableware, medications,

⁶⁸ Ibid., 84.

⁶⁹ Environmental History Timeline, “Ancient Civilizations.”

⁷⁰ Ibid.

⁷¹ Ibid.

⁷² Hughes, *Ecology in Ancient Civilizations*, 74.

⁷³ Ibid., 75.

⁷⁴ Environmental History Timeline, “Ancient Civilizations.”

⁷⁵ Coates, *Nature: Western Attitudes since Ancient Times*, 25.

⁷⁶ Environmental History Timeline, “Ancient Civilizations.”

cosmetics, and in wine, causing stillbirths, sterility, and mental degeneracy.⁷⁷

Climate Changes. Aristotle (384–322 B.C.) already had observed climate changes, but his student Theophrastus (371–286 B.C.) actually gathered information pointing to the cause of these changes, such as the draining of marshes, deforestation, and changing the course of a river.⁷⁸

War. War had a devastating impact on the environment. War was not merely waged against the enemies' army, but also against his homes, resources, and crops.⁷⁹ Theophrastus (ca. 371 B.C.) observed that, after an army had marched over a piece of land, nothing was left and that the following year crops would be stunted. Where the actual battle took place, however, crops the following year might be unusually good due to the spilled blood. Invading armies would burn forests, chop down olive orchards, and burn all vegetation in the area.⁸⁰ As Tacitus, the first century A.D. Roman historian, quoted a British chieftain as saying: "They make a desert and call it peace."⁸¹

6. κρίσις and Paul's Intellectual Milieu

A discussion of Paul and his intellectual milieu is necessary to show that he was intelligent, scholarly, well traveled, and sensitive to his physical milieu. Without the possibility of his exposure to the writings and thoughts of the philosophers and authors mentioned earlier in this study and a sensitivity to the environmental degradation prevalent before and during his lifetime, the basic premise of this study would be invalid. Herewith follows a discussion of some factors which may have led Paul toward a greater sensitivity to the "groaning" of creation.

⁷⁷ Jerome O. Nriagu, *Lead and Lead Poisoning in Antiquity* (New York: John Wiley, 1983), viii, 253, 262, 318–78, 399–415.

⁷⁸ Hughes, *Ecology in Ancient Civilizations*, 66.

⁷⁹ This was not a new development of the Roman period. Ancient Near Eastern cultures generally considered warfare as a means for the complete destruction of the enemy's infrastructure, including wells, fields, and cities. Cf., most recently, Michael G. Hasel, *Military Practice and Polemic. Israel's Laws of Warfare in Near Eastern Perspective* (Berrien Springs: Andrews University Press, 2005); Thomas M. Bolin, "Warfare," in *The Biblical World* (2 vols.; ed. John Barton; London: Routledge, 2002), 2:33–52; Michael G. Hasel, "The Destruction of Trees in the Moabite Campaign of 2 Kings 3:4–27: A Study in the Laws of Warfare," *AUSS* 40 (2002): 197–206; and idem, "A Textual and Iconographic Note on *pṛt* and *mnt* in Egyptian Military Accounts," *Göttinger Miszellen. Beiträge zur ägyptologischen Diskussion* 167 (1998): 61–72.

⁸⁰ Hughes, *Ecology in Ancient Civilizations*, 86.

⁸¹ *Ibid.*, 126.

Tarsus. Paul grew up in and was the citizen of Tarsus—a great city typical of Greco-Roman civilization. Tarsus was the metropolis of Cilicia and “distinguished for the culture of Greek literature and philosophy, so that at one time, in its schools and in the number of its learned men, it was the rival of Athens and Alexandria.”⁸² Strabo (ca. 63/64 B.C.–A.D. 24), a Greek historian, geographer, and philosopher, said that “Tarsus was the metropolis of Cilicia and a center of educational and cultural institutions.”⁸³ Paul was proud of being a citizen of Tarsus (Acts 21:39). We do not know whether Paul actually studied at the university⁸⁴ but there was certainly opportunity for it, either after completing his studies with Gamaliel or during the years after his conversion, and for him to become better equipped for his mission to the Gentiles. His writings do show some influence from other thinkers such as Menander (1 Cor 15:33), Cleanthes repeated by Aratus, a native of Tarsus (Acts 17:28), Epimenides (Titus 1:12), Plato (the expression τὰ διὰ τοῦ σώματος in 2 Cor 5:10), stoicism and cynicism (ἀντάρκειαν in 2 Cor 9:8), Seneca, and others. Whether or not Paul studied in Tarsus, he was an intelligent man from a prominent family living in a city infused with Greek learning and history.⁸⁵ At the very least, he would have picked up what any Jew in his position, living in such a city, would have gained of Greek literature.⁸⁶

Jewish Environmental Perspectives. Yet, no matter how much Paul may have known of Greek and Roman ideas, he remained a Jew through and through. In Phil 3:5 he proudly describes his lineage, claiming to be a Hebrew of the Hebrews. He was the son of a Pharisee and studied with Gamaliel (Acts 23:6).⁸⁷

Being a Pharisee, Paul would have been intimately acquainted with what Scripture said concerning the environment. The Hebrew Bible abounds with such references. Jews related differently to the environment than did the Greeks and the Romans. One of the most important laws relating to the environment prohibits needless destruction. There are also laws which prohibit causing animals pain and which command giving the land sabbatical and jubilee years, both of which guard against erosion and exhaustion of the land. The grazing of sheep and goats in Israel was discour-

⁸² Harold Weiss, *Paul of Tarsus: His Gospel and Life* (Berrien Springs: Andrews University Press, 1986), 3.

⁸³ *The Geography of Strabo VI* (transl. H. L. Jones; LCL; Cambridge: Harvard University Press, 1989), 347.

⁸⁴ W. Ward Gasque, “Tarsus,” *ABD* 6:333, calls it explicitly a “university.”

⁸⁵ Hans Dieter Betz, “Paul (Person),” *ABD* 5:187.

⁸⁶ Weiss, *Paul of Tarsus*, 3.

⁸⁷ *Ibid.*

aged because of the destruction the animals caused.⁸⁸ Josephus mentions that the Jews were offended by the pitting of wild animals against one another for public entertainment.

Paul's acquaintance with Scripture would also have helped him understand that God has compassion on the environment. The book of Jonah describes how the animals of the city of Nineveh are also included in the fast of repentance ordered by the king and draped in sackcloth (Jonah 3:7–9). The actions of man affect the animals under their control. At the end of the book of Jonah, God indicates his compassion on the people as well as on the animals of the city by expressing his concern for the many animals there (Jonah 4:11).⁸⁹

Paul was definitely well acquainted also with Scriptures pointing to the restoration of the natural environment such as Isa 35:1–2, 6–7: "The arid desert shall be glad, the wilderness shall rejoice and shall blossom like a rose. It shall blossom abundantly, it shall also exult and shout. It shall receive the glory of Lebanon, the splendor of Carmel and Sharon," "for waters shall burst forth in the desert, streams in the wilderness. Torrid earth shall become a pool; parched land, fountains of water; the home of jackals, a pasture; the abode of ostriches, reeds and rushes."⁹⁰

Extensive Travel. Besides all the learning which he may have acquired in Tarsus, as well as at the feet of Gamaliel, Paul traveled extensively, visiting many of the major cities of the Mediterranean including Athens and Rome. Throughout all his travels he surely would have noticed the environmental degradation that had occurred and was occurring and possibly heard anecdotes from friends and church members of environmental changes which were taking place or were causing increased hardship of some kind as outlined above.

7. Conclusion

In order to add greater weight to arguments already presented in favor of the view that κτίσις in Rom 8:18–23 refers to non-human creation only, we have turned to the field of historical environmentalism to gain greater in-

⁸⁸ This is based on the data presented and discussed in Manfred Gerstenfeld, "Jewish Environmental Perspectives No. 1: A New Field," n.p. [cited 25 August 2005]. Online: <http://www.jcpa.org/art/jep1.htm>.

⁸⁹ Elmer A. Martens, "Yahweh's Compassion and Ecotheology," in *Problems in Biblical Theology. Essays in Honor of Rolf Knierim* (ed. H. T. C. Sun, L. L. Eades, J. M. Robinson and G. I. Moller; Grand Rapids: Eerdmans, 1997), 237.

⁹⁰ Manfred Gerstenfeld, "Jewish Environmental Perspectives: The Tanakh (Hebrew Bible) and the Environment, no. 3, Tevet 5762/January 2002," n.p. [cited 25 August 2005]. Online: <http://www.jcpa.org/art/jep3.htm>.

sight into the meaning Paul may have had in mind when using this word. Environmental factors which may have influenced Paul include: population increases, poor agricultural practices, deforestation, destruction of wildlife, the farming of herd animals, air pollution, occupational disease, metals and mining, climate changes, and war. We may also consider Paul's intellectual milieu as a factor, due to its possible relation to his understanding of his physical milieu during the time of writing. This includes the fact that he grew up in Tarsus, a major Greek city of learning, the perspectives held by Jews concerning the environment, and his extensive travel which enabled him to view firsthand the environmental degradation then occurring.

Although existing studies of Rom 8:18–23 are extensive and thorough, agreement on the meaning of κρίσις in this passage has not been reached. Arguments in favor of each of the three above-mentioned views are strong and valuable, but none takes into consideration the possible influence Paul's knowledge of environmental degradation may have had on his writing. When due consideration of this previously ignored aspect is made, the view that Paul is indeed referring to non-human creation when he uses the word κρίσις in Rom 8:18–23, comes to have greater weight and strength than previously.