



Original Article

Insights for Contemporary Hunting from Ancient Hellenic Culture

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ABSTRACT Urbanization and other threats to hunting culture have inspired growth in research that addresses the role of hunting in western society today. This literature addresses the juxtaposition of non-subsistence hunting and modern western models of wildlife management associated with either the public trust doctrine or market economics. Insights for understanding this juxtaposition can be drawn from the historical efforts to frame hunting as a symbolic, versus subsistence, activity in ancient Hellenic (Greek) culture. For the ancient Hellenes, hunting offered the opportunity to acquire edification, test skills, and to enjoy a feeling of freedom, and did so for all citizens, even for women. Edification meant more than knowledge about hunting to the ancient Hellenes. It referred to respect for the purity of nature and a hunting ethic, and strict adherence to hunting norms. Testing skills dictated fair chase, where tools and techniques used should not eliminate the need for physical and mental dexterity. Feeling of freedom meant that hunters became useful for themselves and for society through skills acquired by hunting; a modern society might define this as self-sufficiency or independence, which contributes to a greater societal good. These symbolic dimensions of hunting developed in ancient Hellas could provide guidelines for the social identity that hunters hope to develop in our modern world by improving hunting education, promotion, and management. © 2014 The Wildlife Society.

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Social issues are at the root of most wildlife management challenges (Bellrose and Low 1978), and issues surrounding hunting are not exceptions. In recent decades public acceptance of hunting has decreased in many developed countries (Manfredo and Zinn 1996, Peterson 2004). At the same time traditional justifications for allowing regulated hunting (e.g., animal population regulation) are becoming less resonant with non-hunters, and even among wildlife professionals (Woolf and Roseberry 1998, Brown et al. 2000, Peterson 2004).

Difficulties justifying hunting to the public are compounded by difficulties associated with maintaining a broad and growing constituency of hunters. In many nations, participation in hunting is declining and is projected to decline for at least the next 2 decades (Duda 1993, Enck et al. 2000, Tsachalidis 2003, Winkler and Warnke 2012). DiCamillo and Schaefer (2000) suggested there is a need for wildlife managers to promote hunting; and according to the draft of the Millennium Accord on North America's

Hunting Heritage of 2000, creation of a shared philosophical grounding for hunting can facilitate development of hunting-related programs, strategies, and initiatives. As modern society becomes progressively more isolated from nature, it will become progressively more difficult to situate hunting comfortably within society (Holsman 2000, Peterson et al. 2010).

We suggest the efforts to promote appreciation for hunting heritage (DiCamillo and Schaefer 2000), situate hunting in modern society (Peterson et al. 2010), and understand the establishment of hunter identity (Hasanagas et al. 2006) would benefit from understanding the heritage and philosophy of hunting in ancient Hellenic culture. Traditionally, hunter recruitment efforts by wildlife agencies and non-governmental hunting associations often focus on encouraging young people to begin or continue hunting (Mangun et al. 1996). However, focusing on factors that influence the development of a hunter's self-perception will help agencies and facilitate public understanding of the broader perspective on what it means to be a hunter (Enck et al. 2000).

Madson and Kozicky (1963:16) argue that, "hunting is a complex affair with roots too deep to be pulled up and examined." We, however, consider examination of the roots

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of hunting to be both critical and essential if hunting heritage programs are to be legitimate. Ancient Hellas (8th century BC to the end of antiquity—approximately 600 AD) provides an interesting place and historical period to begin examining the meaning of hunting because it provides one of the first cases where hunting transitioned from a subsistence activity to a primarily symbolic activity and relevant literature has been preserved from this historical period, which is important for western civilization (Thornton 2000).

ANCIENT HELLENES AND NATURE

Understanding the symbolic meaning of hunting among the ancient Hellenes requires understanding Hellenic thought on human–nature relationships in general. The Mediterranean region has been the place of birth of many religions and cultures in parallel with over-exploitation of nature (Runnels 1995). As early as 6th millennium BC, inhabitants of Hellas experienced several crises wrought by overexploitation of nature, natural-resource depletion and environmental degradation due to farming intensity, overgrazing, deforestation, and forest fires accompanied by climatological changes and earthquakes (Runnels 1995; Bouratinos 1997; Chew 2001, 2005; Bintliff 2002; Tsoumis 2007).

After the fall of the Mycenaean civilization (Hellenic Dark Ages, 1100–800 BC), the economic and ecological crises of the past helped promote an environmental consciousness among some ancient Hellenes (Hughes 1975, Bouratinos 1997). It is characteristic that in Hellenic mythology and literature the Hellenes referred routinely to mistakes and weaknesses of their kings and the punishment for their actions (Bouratinos 1997). For example, in the myth of Erysikhthon (or Erysichthon), a Thessalian king felled the sacred grove of the goddess Demeter in order to build a feast-hall; as punishment, the goddess inflicted upon him voracious hunger that drove him to exhaust his riches and finally, in poverty, to devour his own flesh (Bouratinos 1997). In the real world, Plato (428–348 BC) described the soil erosion and drying of springs of Attica due to deforestation (Hughes 1975). Moreover, Plato and Aristotle (384–322 BC), often warned their readers of dangers posed by overpopulation and were strong advocates of the stationary state—one committed to zero population growth (Feen 1996).

In the Hellenistic Period (336–146 BC), Epicureans attributed intrinsic worth to nature and promoted a lifestyle that would have minimal impacts on the environment. In the same period, Stoics maintained that there was no covenant of justice between humans and animals, but defended an ecological stance that attempted to balance promoting the human standard of living with protecting nature (Westra and Robinson 1997).

HELLENIC PARTICIPATION IN HUNTING

Manfredo (2008) suggested human–wildlife relationships can be explored through both utilitarian and symbolic relationships. Popular quarry for ancient Hellenes included hare, wild boar, deer, wild goat, bear, leopard, lion, and bird species (Hull 1964, Fox 1996); but farming, fishing, and

animal husbandry were well-developed in ancient Hellas and provided most food supplies (Lonsdale 1979, Isager and Skydsgaard 1992, Papanastasis et al. 2011). According to Ober (2010), the ancient Hellenes had a standard of living similar to the most advanced pre-modern economies of Holland and England in the 15th to 18th centuries AD. Thus, hunting lost its primarily utilitarian value early in Hellenic life when food supplies from hunting lost their importance (Fox 1996, Hamilakis 2003). By the time Xenophon (430–354 BC) wrote potentially the first book exclusively dedicated to hunting, *Cynegeticus*, the utilitarian value of venison was so minor that it was never mentioned.

The symbolic meaning of hunting in ancient Hellas was established initially through artistic expression. This art depicted hunting as a pursuit of rural pleasures by all classes of ancient Hellenic society (White et al. 1995, Barringer 2001, Kapusuz 2009). Hunting became a prominent aspect of Hellenic literature from the time of Homer in the 8th century BC (White et al. 1995, Barringer 2001). The entire Hellenic world held hunting in high esteem (Barringer 2001, Kapusuz 2009). For ancients, hunting was divine in origin and was used widely as an educational tool; it also served as a way for men to achieve promotion within society (Kapusuz 2009).

Moreover, hunting in ancient Hellas was practiced liberally by all free citizens irrespective of social status (Hull 1964, Hobusch 1980, Kapusuz 2009). This characteristic of equal hunting opportunities differentiated Hellas from the other ancient cultures (e.g., Persian, Egyptian) where key hunting rights belonged to a few wealthy and noble persons (Decker 1992, Kapusuz 2009).

Expectations for Hunters—Lessons From Artemis

The cultural and emotional importance of hunting for ancient Hellenes is represented by the deity Artemis, the Olympian goddess of hunting. Artemis was identified by her short tunic with flat-heeled sandals and a bag of arrows on her back. She was associated with many wild animals, including the bear, the boar, the stag, the goat, and packs of dogs (Harris and Platzner 1995). She was celibate and was not identified as a god's wife (as Hera was to Zeus), as a lover (as Aphrodite was to Mars), or as a mother (as Demeter was to Persephone; Harris and Platzner 1995).

Artemis shunned men (Downing 1981) and was a symbol of the purity of nature; she went to great lengths to keep her innocence and virginity intact. This can be seen in the myth of Actaeon. After a long day of hunting, Actaeon accidentally discovered Artemis bathing. Fearing that Actaeon would boast of seeing her in the nude and lacking access to her arrows, Artemis transformed Actaeon into a stag. Actaeon fled in fear, pursued by his own pack of dogs. After a long chase, the dogs caught their master, tore him to shreds, and devoured his flesh (Leeming 1990). This myth is regarded as a warning against harboring disrespect for the purity of nature, which is protected by the rules governing hunting (Bouratinos 1997).

Other lessons from Artemis, according to Xenophon, include the suggestion that one should not hunt animals that

are too young; these creatures Hellenes regarded as dedicated to Artemis (Hull 1964). Hunting also was forbidden on certain days or during certain periods (*anagria*: time when hunting was not allowed) because these days were dedicated to the gods. The state also proclaimed areas as sacred precincts (temples) that served as nature reserves (Hull 1964, Shipley and Salmon 1996).

In classical mythology, Artemis punished hunters who hunted sacred animals, killed too many animals, or hunted in sacred places (Leeming 1990). Agamemnon was forced to sacrifice his daughter after angering Artemis by hunting a deer in a sacred grove and boasting of the hunt. Artemis would not permit favorable winds to blow until she had been compensated with human blood (Leeming 1990). She also was armed, and was therefore able to punish those who broke the rules. The armed Artemis represented the efficacy of nature's processes, which punish those who violated the norms and rules of hunting. Hunters, having more responsibility than animal predators, were expected to respect and abide by the rules, or else face fair, but unrelenting, punishment. These myths highlight the importance of rule-following among hunters in "modern" societies, where hunting has primarily symbolic meaning.

It is apparent that the fact that metaphysical protector of hunting—Artemis—was a goddess and not a god was no coincidence because femininity was associated with unpredictability and mystery in ancient Hellenic society (Burkert 1983, Kypridemos 2003). Artemis was portrayed as a young woman in order to represent liveliness, vigor, and longing for nature and wildlife (Downing 1981). As a beautiful woman, Artemis represented the beauty and perfection in wildlife and nature (Downing 1981). Her virginity represented the contumacy and elusiveness or unapproachability of wildlife (Kypridemos 2003), which seems to be a key to ancient Hellenic hunting. Artemis loved her quarry as spiritual entities that contributed to the experience of the hunt, and not as physical entities (Bevan 1987).

Opportunities Created by Hunting Among the Ancient Hellenes

Hunting was a way for Hellenic men to improve their social status and was viewed as a rite of passage. Apprenticeship to the Centaur Chiron, the teacher of hunters, was seen as pivotal in the education of heroes, including Odysseus and Achilles. The heroic nature of the hunt exalted the quotidian male to higher status (Barringer 2001). According to Athineos (2nd–3rd century AD), Macedonians were not permitted to lie in bed during the symposium (a socially important drinking party) unless they had successfully hunted male wild boar without a hunting net (Gulick 1969). Spartan boys could not participate in the symposium in honor of Artemis without having hunted (Barringer 2001). This role of hunting as a rite of passage into larger society is also emulated by modern hunting communities (Chitwood et al. 2011).

Ancient Hellenes saw hunting as more than a rite of passage. They also believed hunting contributed to education in fields such as warfare, the arts, and citizenship. In his book

Cynegeticus, Xenophon described hunting as central in the education of youths:

One who is just emerging from childhood should first take up the practice of hunting... I recommend to the young not to scorn hunting or other education, for from such things they became skilled in the arts of war and other arts by means of which they think, speak, and act well (Hull 1964:112). These will be good also to their parents and to the entire city and to their friends and fellow citizens (Hull 1964:140).

Although Xenophon noted the danger and excitement of hunting, he focused on how hunting promoted virtue and health among participants. Xenophon believed hunting promoted virtues by forcing participants to overcome challenges and hunting saved men from urban vices and made them more inclined to love virtue. He argued that the hunter keeps strong and young longer than other men, is braver, and even more trustworthy:

Those who are diligent in hunting will be benefited in many ways, for it provides health for their bodies, better sight and hearing, and keeps them from growing old, it also educates, especially in things useful for war... For those who are fit in body and sound in mind can always be close to success (Hull 1964:136).

Similarly, Xenophon and Plato promoted what sounds like "fair chase" (not giving hunters an unfair advantage over animals: http://www.boone-crockett.org/huntingEthics/ethics_fairchase.asp?area=huntingEthics) by arguing that hunting must be challenging in order to promote the virtues traditionally identified with it. Plato's book *Laws* criticized the use of nets and traps because they brought effortless capture of animals (Jowett 2004). Plato opposed such methods because their relative ease did not contribute to any bodily training. Further, he suggested they had no pedagogic influence on hunters, because they did not promote "esteem" for successful hunts or for value of the quarry (only difficulty creates value in hunting). Plato also argued that a strong hunting ethic, rather than laws and punishment, should drive ethical hunting:

Now the legislator, in laying down laws about hunting, can neither abstain from noting these things, nor can he make threatening ordinances which will assign rules and penalties about all of them. What is he to do? He will have to praise hunting with a view to the exercise and pursuits of youth. And, on the other hand, the young man must listen obediently; neither pleasure nor pain should hinder him, and he should regard as his standard of action the praises and injunctions of the legislator rather than the punishments which he imposes by law (Jowett 2004:386).

The book *Onomasticon* by Polydeuces, written toward the end of the 2nd century AD, provides another source of

information about Hellenic hunting. Five centuries after Xenophon and Plato, Polydeuces again highlighted that mental and physical skills are tested and strengthened through hunting:

Hunting... this heroic and royal practice makes for a healthy body and a healthy spirit and is an exercise both in peacetime patience and in war time courage, leads to manliness, and trains one to be strong, swift, skilled in riding, shrewd and industrious if one intends to conquer by strength that which opposes, and by speed that which runs away, and by riding that which draws off, and by wisdom that which is intelligent, and by reflection that which escapes notice, and by time that which is hidden, staying awake at night, and laboring by day (Hull 1964:144).

Hunting in ancient Hellas may have been less gender-specific than it is now in most nations (Mills 1994). Xenophon advocated hunting as an activity for men and women alike (Hull 1964) and wrote about how women loved to hunt (Scripta Minora, XIII 18; Mills 1994). Lycurgus, the legendary lawgiver of Sparta, ruled that hunting by women was good for the state of Sparta, and the Roman Propertius sang about beautiful Spartan women hunting in the 1st century BC (Sobol 1972). In addition to Artemis, eminent female hunters such as Atalanti and Prokris are mentioned in Hellenic mythology.

Ancient Hellenic art corroborates the descriptions that recommend shunning an unfair advantage in historical texts (Fig. 1). Specifically, hunters never hunt from chariots (as do their Near Eastern counterparts from Assyria, Persia, and Egypt). Rather, Hellenic hunters are depicted primarily on foot and occasionally on horseback (Kapusuz 2009). In Hellenic art, hunters are typically not accompanied by a royal entourage; rather, they are depicted as a group of men, attired and armed as Hellenes (Barringer 2001, Kapusuz 2009).

Hunting Through the Centuries

Hunting was recommended to soldiers as a good form of exercise (Koukoules 1948) during the Byzantine epoch (330–1453 AD). During the occupation of Hellas by the Turks (1453–1821 AD), hunting remained a constant right and value of enslaved Hellenes, who often left their homes and attempted to survive in the countryside while avoiding the conquerors (Grispos 1973). In fact, hunting was regarded by Hellenes as a pathway to freedom, and Hellenic revolutionaries used hunting as a test for the appointment of their leaders (Kabolis 1991).

This approach to hunting articulated by the ancient Hellenes was not recast until 1932 at the 1st Pan-Hellenic Hunting Congress, where the contemporary Hunting Law of Hellenic State was first drafted. This law vested the right to hunt in all licensed hunters rather than in landowners (equal opportunities for hunting), and wildlife was legally established as “*res communis*” or “*res publica*” (community or public property) until harvested, when it became property of the licensed hunter (FACE 1995). The hunting right was



Figure 1. Ancient Hellenic depictions of hunting: 1) The goddess of hunting, Artemis, feeds a heron or swan from her hand (attributed to the Pan Painter, 500–459 BC); 2) The teacher of hunters, Centaur Chiron, holds the boy Achilles and a branch with a hare (attributed to Oltos, approx. 520 BC); 3) An anonymous hunter is shown returning from hunting running with his dog and his quarry, a hare and a fox (Tleson Painter, 550–540 BC); 4) The youthful hunter Actaeon is transformed into a stag by the goddess Artemis as punishment for spying upon her bath. Actaeon’s own dogs, mistaking him for prey, tear into his flesh (unknown painter, 400–350 BC). Source: www.theoi.com; accessed 2 Nov 2013.

acquired via a hunting license, which was valid for a prefecture, for a hunting region, or for the whole country; the license cost from 100 to 150 euro (in 2013) depending on the geographic scope of the license. The Hellenic hunting system is arguably the most liberal in Europe (FACE 1995) given the relatively low cost for licenses and the presumed right to hunt without permission from the landowner (Bubeník 1989, Sokos and Birtsas 2005, Birtsas et al. 2009).

Most of the book of *Xenophon* is dedicated to the brown hare (*Lepus europaeus*), which remains the most popular quarry for modern Hellenic hunters. Hares in Hellas are hunted by small groups of hunters (usually 2–4) and a small pack of dogs (largely reflecting practices described in *Xenophon*), and with a daily harvest limit of 1 hare/hunter/day. Hunting is still viewed by many Hellenes as a way to create and sustain mental and physical skills while promoting civic virtue and freedom (Hasanagas et al. 2011). Further, initiation of children, including daughters, into hunting is important to many Hellenes (Hasanagas et al. 2011).

DISCUSSION

Depictions of hunting in ancient Hellas offer many interesting parallels to modern hunting, and potentially insights into the role of hunting in modern society. Hunting

was a matter of course for ancient Hellenic society, and thus no ancient Hellenic writers attempted to rationalize it. Myths, religion, philosophy, and art therefore become key tools for understanding the social meaning of hunting. From these sources, we see important parallels with the “modern” ideas of a fair chase, equal hunting opportunities, and inclusion of females among hunters. The role of hunting in ancient Hellenic society was more similar to the role of hunting today than one might expect. For instance, despite occurring >2,500 years ago, there is no mention of food-provisioning or justification of hunting based on need or ability to provide meat for oneself or one’s companions. Thus, the most important roles for hunting in ancient Hellas, similar to today, were symbolic; hunting was associated with hunter identity (Hasanagas et al. 2006, Chitwood et al. 2011) and with strengthening ties between society and nature (Peterson et al. 2010), rather than with provision of meat.

The myths associated with Artemis also help modern hunters explain the seemingly ironic juxtaposition of advocating conservation of animals while attempting to kill them. Similar to Artemis, modern hunters can love the animals they hunt, and view them as symbolic entities contributing to the hunt rather than as physical entities. Incidentally, this attitude toward wildlife is more consistent with wildlife management, wherein individual animals might be killed in efforts to attain population- or species-scale management goals and perpetuate opportunities (including hunting) for use of wildlife in the future.

The ancient Hellenic philosophers advocated teaching hunting in ways that promoted sportsmanship, avoided tools that made hunting too easy and encouraged obedience to hunting norms driven by moral responsibility rather than fear of retribution from the law. Hellenic philosophy bears directly on modern hunting debates about increased commodification of hunting and wildlife, high fences, “put and take” operations, canned hunting, and hunting preserves (Leopold 1943, The Wildlife Society 2001, Sokos et al. 2008). The spiritual connection between the hunter and the quarry personified in Artemis is strained by such trends in modernity.

Hunting in ancient Hellas was practiced liberally by all free citizens. The equal opportunities to hunt differentiated Hellenic culture from the other ancient cultures, and may have contributed to the “democracy of hunting” concept (Kyriazis and Economou 2012). This concept shaped the current hunting system in Hellas, and is associated with the North American Model of wildlife management (Geist et al. 2001), just as it contributed to the North American model of democracy itself.

Ancient Hellenes treated hunting as a means to promote physical and mental health, connections to nature and civic virtue. Recent research proves the benefits of hunting highlighted by the ancient Hellenes can apply today. For instance, the case of Innu from northern Labrador, Canada, provides evidence that hunting can promote physical and mental health for hunters (Samson and Pretty 2006). The cultural passage from permanent nomadic hunting, gathering, and trapping in “the country” (nutshimit) to sedentary

village life (known as “sedentarisation”) has been associated with a marked decline in physical and mental health (Samson and Pretty 2006).

Further, hunting effectively bridges social and generational gaps (Kapusuz 2009). Older hunters train younger ones and they hunt together (Langenau and Mellon 1980, Kapusuz 2009); intergenerational communication and cooperation is thereby supported. The hunting philosophy also favors the sociability between the genders. In Hellenic mythology, eminent female hunters such as Atalanti and Prokris are mentioned, in addition to the goddess Artemis. Thus, for the ancient Hellenic philosophers, the social benefits attributed to hunting were gender-neutral (or at least more gender-neutral) than they are perceived today in many societies. For the ancient Hellenes, if appropriate forms of hunting promoted physical fitness and good citizenship among men, they also did so among women.

The benefits of hunting accompany hunters for the rest of their lives. According to Xenophon, hunting contributes to a feeling of freedom (or what a modern society might define as self-sufficiency or independence) by making hunters feel younger, fit, wise, awake, and prepared for war. Thus, according to Xenophon, Hellenic hunters become useful for themselves and for society. Today, many hunting clubs organize hunters in emergency teams for purpose of responding to natural disasters. In this sense, hunting seems to promote volunteerism and prepare volunteers to be able to fight against natural disasters, and therefore have a sense of security and freedom. Moreover, obtaining your own food from nature can provide a basic feeling of freedom (Sen 1987).

In conclusion, ancient Hellenes developed a hunting perspective with which they established respect for wildlife through religion and myths and improved and tested their physical and mental skills through hunting practice. Hunters become useful for themselves and for society, and thus they can assure their freedom. Therefore, a certain hunting philosophy based on the triptych of edification, skill-testing, and freedom, is outlined (Fig. 2). These 3 aspects can be seen as 3 consecutive stages of hunting. Firstly, the hunters try to acquire edification in habits of animals, hunting grounds, methods, ethics, rules, etc. Next, hunters test their skills to see if they are capable hunters and to compare themselves

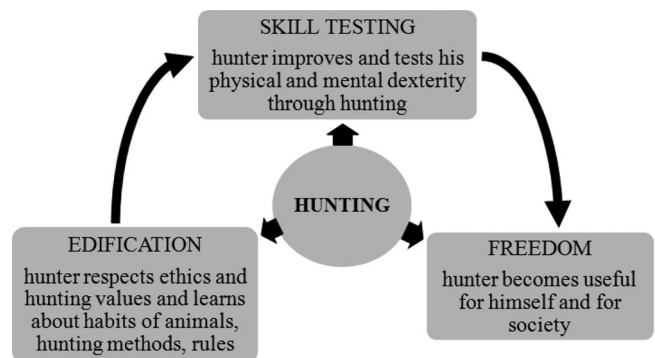


Figure 2. The 3 dimensions of ancient Hellenic hunting philosophy, showing how hunters progressed through the dimensions in 3 stages, starting with edification and ending with increased freedom.

with others. Finally, because they have attained the status of a hunter, they will be more capable to attain or maintain their freedom, which could be a type of liberation from the urbanized and stressful life. This sequential triptych defined by the ancient Hellenes offers an alternative to the 5 stages of hunter development outlined in every hunter's education manual in the United States: shooting, limiting out, trophy, method, and sportsman.

MANAGEMENT IMPLICATIONS

The hunting philosophy of the ancient Hellenes has much to offer contemporary advocates of hunting in addition to simply providing a better historical grounding for the practice of hunting. We suggest 4 principles that ancient Hellenic philosophy offers to modern hunters and hunting advocates: 1) forms and practices of hunting that promote physical fitness, mental acuity, and social cohesion should be preferred over others; 2) both the philosophy and practice of hunting should be approached in a more gender-neutral fashion; 3) hunting should be rooted in a profound respect for nature; and 4) hunters should self-regulate their behavior based on social norms with higher standards than local laws. Such guidelines provide a place to begin forging a social identity for hunting in our changing modern world.

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LITERATURE CITED

- Barringer, J. M. 2001. *The hunt in ancient Greece*. The Johns Hopkins University Press, Baltimore, Maryland, USA.
- Bellrose, F. C., and J. B. Low. 1978. Advances in waterfowl management research. *Wildlife Society Bulletin* 6:63–72.
- Bevan, E. 1987. The goddess Artemis, and the dedication of bears in sanctuaries. *The Annual of the British School at Athens* 82:17–21.
- Bintliff, J. 2002. Time, process and catastrophism in the study of Mediterranean alluvial history: a review. *World Archaeology* 33:417–435.
- Birtsas, P., C. Sokos, N. Hasanagas, and C. Billinis. 2009. The hunting activity in Hellas. Pages 52–53 in L. Esposito, editor. *Proceedings of VIth international symposium on Wild Fauna*. Organized by Wild Animal Vigilance Euromediterranean Society, 21–24 May 2009 Paris, France. <<http://www.panida.gr/site/2013/11/02/hunting-hellas/>>. Accessed 5 Nov 2013.
- Bouratinos, E. 1997. *Environment and conscience in ancient Hellas*. Arsenidis, Athens, Greece [In Greek.].
- Brown, T. L., D. J. Decker, S. J. Riley, J. W. Enck, T. B. Lauber, P. D. Curtis, and G. F. Mattfeld. 2000. The future of hunting as a mechanism to control white-tailed deer populations. *Wildlife Society Bulletin* 28:797–807.
- Bubenik, A. B. 1989. Sport hunting in continental Europe. Pages 115–133 in R. J. Hudson, K. R. Drew, and L. M. Baskin, editors. *Wildlife production systems: economic utilisation of wild ungulates*. Cambridge University Press, Cambridge, England, United Kingdom.
- Burkert, W. 1983. *Homo Necans: the anthropology of ancient Greek sacrificial ritual and myth*. Translated from the German (1972) by P. Bing. University of California Press, Berkeley, USA.
- Chew, S. 2001. *World ecological degradation: accumulation, urbanization, and deforestation 3000 B.C.–A.D.* 2000. AltaMira Press, Walnut Creek, California, USA.
- Chew, S. 2005. From Harappa to Mesopotamia and Egypt to Mycenae: Dark Ages, political-economic declines, and environmental/climatic changes 2200 B.C.–700 B.C. Pages 52–74 in C. Chase-Dunn, and E. N. Anderson, editors. *The historical evolution of world-systems*. Palgrave MacMillan, New York, New York, USA.
- Chitwood, M. C., M. N. Peterson, and C. S. DePerno. 2011. Assessing dog hunter identity in coastal North Carolina. *Human Dimensions of Wildlife* 16:128–141.
- Decker, W. 1992. *Sports and games of Ancient Egypt*. Yale University Press, New Haven, Connecticut, USA.
- DiCamillo, J. A., and J. M. Schaefer. 2000. Internet program impacts youth interest in hunting. *Wildlife Society Bulletin* 28:1077–1085.
- Downing, C. 1981. *The goddess: mythological images of the feminine*. Crossroad, New York, New York, USA.
- Duda, M. D. 1993. Factors related to hunting and fishing in the U.S. Phase I: literature review. U.S. Fish and Wildlife Service, Harrisonburg, Virginia, USA.
- Enck, J. W., D. J. Decker, and T. L. Brown. 2000. Status of hunter recruitment and retention in the United States. *Wildlife Society Bulletin* 28:817–824.
- Fédération des Associations de Chasseurs de l' UE [FACE]. 1995. *Handbook of hunting in Europe*. Fédération des Associations de Chasseurs de l, UE, Brussels, Belgium.
- Feen, R. H. 1996. Keeping the balance: ancient Greek philosophical concerns with population and environment. *Population and Environment* 17:447–458.
- Fox, R. L. 1996. Ancient hunting: from Homer to Polybios. Pages 119–153 in G. Shipley, and J. Salmon, editors. *Human landscapes in classical antiquity*. Environment and Culture. Routledge, London, England, United Kingdom; and New York, New York, USA.
- Geist, V., S. P. Mahoney, and J. F. Organ. 2001. Why hunting has defined the North American Model of Wildlife Conservation. *Transactions of the North American Wildlife and Natural Resources Conference* 66:175–185.
- Grispos, P. 1973. *Forest history of modern Hellas*. Hellenic Ministry of Agriculture, General Directorate of Forestry, Athens, Greece [In Greek.].
- Gulick, C. B. 1969. *Athineos, 2nd–3rd AD – The deipnosophists*. Loeb Classical Library edition, Harvard University Press, Cambridge, Massachusetts, USA.
- Hamilakis, Y. 2003. The sacred geography of hunting: wild animals, social power and gender in early farming societies. Pages 239–247 in E. Kotjabopoulou, Y. Hamilakis, P. Halstead, C. Gamble, and P. Elefanti, editors. *Zooarchaeology in Greece: recent advances*. British School at Athens Studies 9, London, England, United Kingdom.
- Harris, S. L., and G. Platzner. 1995. *Classical mythology: images and insights*. Mayfield, Mountain View, California, USA.
- Hasanagas, N., P. Birtsas, and C. Sokos. 2006. Code of hunters' ethics and identity building: from state law to custom and ethos. Pages 131–138 in E. Manolas, editor. *Proceedings of the 2006 Naxos International Conference on Sustainable Management and Development of Mountainous and Island Areas, Volume I, 29 September–1 October 2006, Naxos, Greece*. <<http://www.panida.gr/site/wp-content/uploads/2006-Code-of-Hunters-ethics-and-identity-building.pdf>>. Accessed 4 Nov 2013.
- Hasanagas, N., P. Birtsas, and C. Sokos. 2011. Hunting as “way of life”, as “sport” and as “hobby.” *Proceedings of 15th Pan-Hellenic Forestry Congress*. Hellenic Forestry Society, 16–19 October 2011, Karditsa, Greece. <http://www.wfdt.teilar.gr/15_th_Panhellenic_Forestry_CON-FERENCE/Presentations/Xasanagas.pdf>. Accessed 3 Nov 2013. [In Greek with an English summary.].
- Hobusch, E. 1980. *Fair game: a history of hunting, shooting and animal conservation*. Arco, New York, New York, USA.
- Holsman, R. H. 2000. Goodwill hunting? Exploring the role of hunters as ecosystem stewards. *Wildlife Society Bulletin* 28:808–816.
- Hughes, D. J. 1975. Ecology in ancient Greece. *Inquiry* 18:115–125.
- Hull, D. B. 1964. *Hounds and hunting in ancient Greece*. University of Chicago Press, Chicago, Illinois, USA.
- Isager, S., and J. Skydsgaard. 1992. *Ancient Greek agriculture. An introduction*. Routledge, London, England, United Kingdom.
- Jowett, B. 2004. *Laws by Plato*. Kessinger, Whitefish, Montana, USA.
- Kabolis, V. 1991. *Hunting sextant*. Korfoú, Athens, Greece [In Greek.].
- Kapusuz, M. 2009. *Relief scenes of hunters and hunting in Greek art from the archaic period since the age of successors*. Thesis, Aristotle University of Thessaloniki, School of Philosophy, Department of History and Archaeology, Thessaloniki, Greece. <<http://invenio.lib.auth.gr/record/114189/files/KAPOUSOUZ.pdf>>. Accessed 5 Nov 2013. [In Greek.].
- Koukoules, P. 1948. *Life and culture of the Byzantines*. Vol. V. Papazisis, Athens, Greece [In Greek.].
- Kypridemos, N. 2003. Artemis: the goddess of hunting. Pages 210–213 in K. Skordas, and P. Birtsas, technical coordinators. *Pan-Thiras 2003*

- everything about hunting. Hunting Federation of Macedonia and Thrace, Greece [In Greek].
- Kyriazis, N., and E. M. L. Economou. 2012. Macroculture, sports and democracy in classical Greece. *European Journal of Law and Economics* 2012:1–25.
- Langenau, E. E., and P. M. Mellon. 1980. Characteristics and behaviours of Michigan 12- to 18-year-old hunters. *Journal of Wildlife Management* 44:69–78.
- Leeming, D. A. 1990. *The world of myth*. Oxford University Press, New York, New York, USA.
- Leopold, A. 1943. Wildlife in American culture. *Journal of Wildlife Management* 7:1–6.
- Lonsdale, S. H. 1979. Attitudes towards animals in Ancient Greece and Rome. *Greece and Rome* 26:146–159.
- Madson, J., and E. Kozicky. 1963. *For the young hunter*. Olin Mathieson Chemical, East Alton, Illinois, USA.
- Manfredo, M. J. 2008. *Who cares about wildlife? Social science concepts for exploring human–wildlife relationships and conservation issues*. Springer, New York, New York, USA.
- Manfredo, M. J., and H. C. Zinn. 1996. Population change and its implications for wildlife management in the new west: a case study of Colorado. *Human Dimensions of Wildlife* 1:62–74.
- Mangun, J. C., D. A. Hall, and J. T. O’Leary. 1996. Desertion in the ranks: recruitment and retention of sportsmen. *Transactions of the North American Wildlife and Natural Resources Conference* 61:161–167.
- Mills, B. D. 1994. *Women of ancient Greece. Participating in sport?* ERIC Clearinghouse. <<http://eric.ed.gov/PDFS/ED370951.pdf>>. Accessed 13 Oct 2013.
- Ober, J. 2010. Wealthy Hellas. *Transactions of the American Philological Association* 140:241–286.
- Papanastasis, P. V., M. Arianoutsou, and K. Papanastasis. 2011. Environmental conservation in classical Greece. *Journal of Biological Research-Thessaloniki* 14:123–135.
- Peterson, M. N. 2004. An approach for demonstrating the social legitimacy of hunting. *Wildlife Society Bulletin* 32:310–321.
- Peterson, M. N., H. P. Hansen, M. J. Peterson, and T. R. Peterson. 2010. How hunting strengthens social awareness of coupled human–natural systems. *Wildlife Biology in Practice* 6:127–143.
- Runnels, C. N. 1995. Environmental degradation in ancient Greece. *Scientific American* 272:96–99.
- Samson, C., and J. Pretty. 2006. Environmental and health benefits of hunting lifestyles and diets for the Innu of Labrador. *Food Policy* 31:528–553.
- Sen, A. 1987. *Food and freedom*. Sir John Crawford Memorial Lecture, Washington, D.C., USA: <<http://www.worldbank.org/html/cgiar/publications/crawford/craw3.pdf>>. Accessed 7 Aug 2013.
- Shipley, G., and J. Salmon. 1996. *Human landscapes in classical antiquity*. Environment and Culture, London, England, United Kingdom; and New York, New York, USA.
- Sobol, D. 1972. *The Amazons in Greek society*. Barns, London, England, United Kingdom.
- Sokos, C. K., and P. K. Birtsas. 2005. Hunting management of pheasant (*Phasianus colchicus*) in Hellas. Pages 361–372 in *Proceedings of 12th Pan-Hellenic Forestry Congress*. Hellenic Forestry Society, 2–5 October 2005, Drama, Greece. <<http://www.panida.gr/site/wp-content/uploads/2005-pheasant-hunting1.pdf>>. Accessed 5 Nov 2013. [In Greek with an English summary.]
- Sokos, C. K., P. K. Birtsas, and E. P. Tsachalidis. 2008. The aims of galliforms release and choice of techniques. *Wildlife Biology* 14:412–422.
- The Wildlife Society. 2001. Position statement on shooting wildlife enclosed by high fences. <http://www.agriculture.purdue.edu/fnr/twsw/docs/high_fence.pdf>. Accessed 5 Nov 2013.
- Thornton, B. 2000. *Greek ways: how the Greeks created western civilization*. Encounter, San Francisco, California, USA.
- Tsachalidis, E. P. 2003. Change in issue of hunting licenses in the areas of Macedonia and Thrace during the period 1975–2000. *Geotechnical Scientific Issues* 14:41–48. [In Greek with an English summary.]
- Tsoumis, G. T. 2007. *Forests and environment in ancient Hellas*. University Studio Press, Thessaloniki, Greece [In Greek].
- Westra, L., and T. M. Robinson. 1997. *The Greeks and the environment*. Rowman and Littlefield, Lanham, Maryland, USA.
- White, D., K. DeVries, I. B. Romano, and Y. Stolyarik. 1995. *The ancient Greek world*. The Rodney S. Young Gallery, University of Pennsylvania Museum, Philadelphia, USA.
- Winkler, R., and K. Warnke. 2012. The future of hunting: an age-period-cohort analysis of deer hunter decline. *Population and Environment* 33:1–21.
- Wolf, A., and J. L. Roseberry. 1998. Deer management: our profession’s symbol of success or failure. *Wildlife Society Bulletin* 26:515–521.

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