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Strategic tradeoffs for wildlife-friendly eco-labels

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Labels on products are meant to influence consumer behavior. Consumers buying products labeled as eco-friendly may hope to help conserve the environment, but eco-labels vary in their claims and credibility. We define three types of wildlife-friendly eco-labels, according to their potential to conserve wildlife, and describe barriers to convincing consumers of their claims. Eco-labels we term “Supportive” donate revenues to conservation organizations and are, at best, indirect interventions, opaque to consumer scrutiny. “Persuasive” eco-labels certify manufacturing/collection practices, under the assumption that wildlife will benefit as a result. “Protective” eco-labels certify wildlife conservation, which can gain the highest level of credibility, but require the greatest verification effort. Proving that producers conserved wildlife is costly, time-consuming, and technically challenging, because wild animals ignore property boundaries and experience mortality and dispersal irrespective of people, but their population dynamics often obscure the role of human activities and economic practices. Nevertheless, wild animals are among the most inspiring and marketable components of the environment.

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Environmental conservation organizations have long sought the “holy grail” of market-based financing for the protection of nature. Ecotourism, hunting fees, and conservation banking are among the many examples of market-driven efforts to conserve wildlife and protect wildlands from destructive activities (Ferraro and Kiss 2002). More recently, the biodiversity conservation sector has sought consumer financing for conservation incentives. Among these efforts are various product-labeling and certification schemes (eco-labels), meant to offer a price premium or enhanced market access to producers who support wildlife conservation (van Amstel *et al.* 2007a,b). Given the growing interest in eco-labels for biodiversity conservation, here we focus on the reliability of claims that prod-

ucts are wildlife friendly. Because this paper specifically looks at wild animal conservation, our use of the term “wildlife” refers to animal life, unless otherwise noted.

■ Connecting conservation-minded consumers with wildlife-conserving producers

Uniting consumers and producers in attempts to conserve wildlife depends on two things: (1) a direct incentive for producers to conserve wild animals that have meaning to consumers; and (2) an explicit and common-sense link between a preferred system of production (manufacture or collection) and the conservation of specific wildlife, either on land or in the oceans (Searle *et al.* 2004; Fischer *et al.* 2008). These requirements may rule out several conservation approaches that could effectively conserve wildlife but do not meet the expectations of consumers or producers; for instance, reimbursing producers for the costs of coexistence with wildlife (eg compensation for wildlife damage to property) can generate perverse incentives, such as negligent defense of property by producers or retaliation against individuals of the species that caused the damage (Naughton-Treves *et al.* 2003; Bulte and Rondeau 2005). By contrast, linking revenues directly to successful reproduction or survival of wildlife is thought to foster pro-wildlife attitudes among commercial producers (Mishra *et al.* 2003; Schwerdtner and Gruber 2007; Zabel and Holm-Muller 2008). “Pay for living wildlife rather than dead livestock” is one common way of articulating the latter strategy and its link to conservation. Recruiting consumers to a particular wildlife conservation strategy demands different approaches from those used with producers. For example, sustainable har-

In a nutshell:

- Eco-labels claim that purchases contribute to environmental protection; wildlife-friendly eco-labels claim to conserve wildlife
- We distinguish three types of wildlife-friendly eco-labels by how they certify products and what steps are taken to verify that wild animals were conserved
- The most credible but costly are “Protective” labels that must verify wildlife conservation in the vicinity of certified businesses
- Wildlife conservation poses special challenges for certifiers, because wild animal populations fluctuate naturally, and field verification of producers’ impacts is slow, complex, and costly

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vest of wildlife has long been a tool in conserving certain species (Jackson 1996; Loveridge *et al.* 2007), but many consumers in wealthy nations view hunting as inhumane or anti-conservation (Holsman 2000; Peterson 2004). Thus, market approaches to wildlife conservation such as eco-labels will be most effective when they can be understood as wildlife-friendly by the widest possible set of consumers. The communication role of eco-labels is therefore critical to consumer recruitment.

Eco-labels are intended to signal to consumers that purchases help nature. Signal theory suggests that senders will try to manipulate receiver behavior (Alcock 1999), in the same way that product labels attempt to influence purchasing behavior (Ottman *et al.* 2006). The theory also suggests that receivers will discriminate against unreliable, inaccurate signals because poor choices have negative consequences for receivers. Although human communication is more complex, choosy consumers in a crowded marketplace do confront an array of different signals, with varying information content and reliability (van Amstel *et al.* 2007a). When the interests of both signaler and receiver align – as with conservation-minded producers and consumers – a reliable message can more effectively change receiver behavior (Dunwoody 2007). Many eco-label schemes embrace transparency, explicit standards, and third-party verification to convey their reliability and the accuracy of their information content (van Amstel *et al.* 2007a). These steps may build a bond with some consumers, but do not ensure market success.

Eco-labels face three challenges that are common to many environmentally preferable, product-marketing efforts (Ottman *et al.* 2006). Following Ottman and colleagues (2006), we call these the three C's: consumer value, credibility of claims, and calibration of marketing messages to reduce confusion.

(1) Consumer value

Most people buy products based on perceived quality or convenience, not the nebulous benefits of positive environmental outcomes (Oosterhous *et al.* 2005). Environmentally preferable products must therefore also surpass the competition in one or more other dimensions. Eco-labels may enjoy an advantage, if they can credibly certify producers or clearly show evidence of wildlife conservation. This advantage might give producers access to dedicated markets and insulate them from competition with more mainstream producers.

(2) Credibility of claims

Creators and users of eco-labels may be the subject of consumer skepticism as well as environmental watchdogs, consumer interest groups, competitors, and a free press investigating the veracity of their claims. This scrutiny has led to the disappearance of eco-labeled products when producers were unable to prove their claims

(Ottman *et al.* 2006). Agrobiodiversity conservation claims associated with sustainable agriculture are beginning to face such scrutiny in Europe (Oosterhous *et al.* 2005; van Amstel *et al.* 2007a).

(3) Calibration of marketing messages to reduce confusion

Consumers face dozens of competing claims about products, but without the time or ability to evaluate the labels. Producers and distributors must therefore communicate the benefits of their goods quickly and easily to their target consumers. In the following section, we explore reliability, consumer confidence, and producer incentives as they relate to the wildlife conservation claims made on eco-labels.

■ Framework for understanding wildlife conservation claims of eco-labels

Wildlife creates particular challenges for producers who wish to use eco-labels, because verifying conservation successes and failures is complex, technical, and costly (van Amstel *et al.* 2007b; Salafsky *et al.* 2008). First, verifying whether a business has been instrumental in conserving wildlife is particularly challenging, because wildlife ignore jurisdictional property boundaries (Naughton and Sanderson 1996; Woodroffe and Ginsburg 1998). Second, wild animal populations experience complex, stochastic, long-term demographic changes that obscure the putative influences of humans (Adams *et al.* 2008; Robinson *et al.* 2008; Vucetich and Peterson 2009). Third, many species of conservation concern are wary of humans, due to past persecution (van Schaik and Griffiths 1996), which makes monitoring them expensive and difficult. Fourth, a number of wildlife species do damage property or pose a threat to people, so incentives must at least offset losses, to prevent retaliatory killing (Woodroffe and Frank 2005; Long *et al.* 2007; Treves 2008; Zabel and Holm-Muller 2008). Finally, wild animals share complex ecosystems with other, interdependent organisms that may be adversely affected by human activities, making efforts for one focal species dependent on the conservation of others as well (Estes *et al.* 1998; Terborgh *et al.* 2002; Rooney and Anderson 2009). Credibly linking one producer to the success or failure of particular wild animals may therefore not always be possible. Nevertheless, many charismatic species are iconic in wealthy countries and may act as attractive marketing emblems.

Given the variables summarized above, it is not surprising that wildlife conservation eco-labels vary widely in their claims and their certification standards. In this paper, we use the term “verification” to mean gathering information specific to a product or business for systematic comparison with explicit standards, and we use the term “certification” to mean the decision by an authorized body to permit or prohibit use of an eco-label, based on



Figure 1. Examples of the three types of eco-labels: (a) Supportive; (b) Persuasive; and (c) Protective.

comparison of data collected during verification against a consistent set of pre-existing criteria (ie standards).

The various claims made on labels have different implications for wildlife conservation. Our review of company websites, as well as the academic and gray literature, suggested three functional types of eco-label: “Supportive”, “Persuasive”, and “Protective” (Figure 1). Each functional type has a different relationship to wildlife, threats, and the indirect factors contributing to those threats (sensu Salafsky *et al.* 2008; Treves *et al.* 2009). Products that claim to donate money to conservation organizations (Supportive eco-labels) ostensibly provide funds to remote actors who may be conserving wildlife. However, the verification process is complicated by the transfer of funds to a third-party recipient, who is usually not accountable to consumers. As a result, verification can-

not go far beyond financial audits of the intermediary donor. Persuasive eco-labels claim to change manufacture, collection, or producer behavior in some way. These certify improved methods of production, but not actual wildlife conservation. Verification can vary from affidavits to third-party inspection of the production sites. Finally, Protective eco-labels claim to help conserve particular species or the ecosystems on which they depend. Verification rests on evidence that wildlife survived or reproduced successfully in and around the certified businesses and could range from producer reports of wildlife sightings to systematic, third-party monitoring of survival or reproduction among focal wildlife. Some eco-labels bridge the Persuasive and Protective categories by requiring that producers protect habitat and verifying such habitat conservation through site inspections (Table 1). We discuss the use of habitat as a proxy for wildlife conservation below. In summary, eco-labels can be viewed as interventions that affect conservation groups (Supportive), producers (Persuasive), or wildlife (Protective).

The functional differences between these three categories of eco-labels have important implications for consumer confidence and producer recruitment. By “consumer”, we mean both the end-user of a product and consumer advocates. By “producer”, we mean the manufacturer(s) or collector(s) responsible for assembly or production of an eco-labeled product.

Consumer confidence may not align or rise in parallel with producer incentives because of a fundamental trade-off in verification effort (Figure 2). The short-term effort needed to satisfy certifiers and verify applicants’ claims will reduce producer participation and recruitment, despite the resulting potential long-term increase in con-

Table 1. Eco-labels evaluated and classified

Label	Type	Products	Habitat protection*	Website
Marine Stewardship Council	Protective	Fish	Mandatory	www.msc.org
Tiger Friendly	Protective	Herbs	Mandatory	www.tigerfriendly.org
Certified Wildlife Friendly	Persuasive/ Protective	Food, apparel, toys	Mandatory	www.wildlifefriendly.org
FairWild	Persuasive/ Protective	Wild plants	Mandatory	www.fairwild.org
Snow Leopard Enterprises	Persuasive/ Protective	Wool products	Voluntary	www.snowleopard.org
Rainforest Alliance Certified	Persuasive/ Protective	Food products	Mandatory	www.rainforest-alliance.org
FishWise	Persuasive/ Protective	Fish	Ambiguous	www.fishwise.org
Aurora Certified Organic	Persuasive	Food products	Mandatory	http://demeter-usa.org/get-certified
Baystate Certified Organic	Persuasive	Food products	Voluntary	www.baystateorganic.org
Bird-Friendly Coffee	Persuasive	Coffee	Mandatory	http://nationalzoo.si.edu/ConservationAndScience/MigratoryBirds/Coffee/roaster.cfm
Various Certified Organic: CCOF, COFA, and CO State Department of Agriculture	Persuasive	Food products	Voluntary	www.ccof.org, www.cofa.net, www.certifiedorganic.org, and www.colorado.gov/cs/Satellite/Agriculture-Main/CDAG/1167928162828
Demeter Certified Biodynamic	Persuasive	Food products	Mandatory	www.demeter-usa.org
Dolphin Safe	Persuasive	Tuna	Ambiguous	www.earthisland.org/dolphinSafeTuna
Fair Trade Certified	Persuasive	Food products	Voluntary	www.transfairusa.org
Food Alliance Certified	Persuasive	Food products	Mandatory	www.foodalliance.org
Forest Stewardship Council	Persuasive	Wood products	Mandatory	www.fsc.org
Global GAP	Persuasive	Food products	Mandatory	www.globalgap.org
Green Seal	Persuasive	Manufactured goods, hotels, lodging	Voluntary	www.greenseal.org
Predator Friendly	Persuasive	Honey, wool products, meat, and eggs	Voluntary	www.predatorfriendly.org
Protected Harvest	Persuasive	Food products	Mandatory	www.protectedharvest.org
Salmon Safe	Persuasive	Food products; also urban areas, parks, natural areas	Voluntary	www.salmonsafe.org
VeriFlora	Persuasive	Cut flowers, potted plants	Mandatory	www.veriflora.com
Organic Bouquet Wildlife Conservation Roses	Persuasive/ Supportive	Cut flowers	–	www.organicbouquet.com
Endangered Species Chocolate	Supportive	Candy	–	www.chocolatebar.com
MyLipStuff Charitabalsms	Supportive	Lip balm	–	www.mylipstuff.com/charitabalsms.html

Notes: *Mandatory = habitat protection required for certification; Voluntary = habitat protection recommended.

sumer confidence. If the certifier and producer attempt to defray the costs of certification and verification, consumers may have to pay higher prices for the labeled products. In short, increasing the verification effort will cut into profits but will raise consumer confidence, creating a conflict of interest between producers and consumers (Figure 2). The certifier is caught in the middle and will be under pressure to dilute standards or cultivate a niche market of dedicated consumers willing to pay premium prices.

Consumer confidence depends in part on how claims are verified and in part on who is communicating with the consumer. Recent research suggests consumers do not generally make extensive efforts to compare eco-labels before purchasing (Oosterhous *et al.* 2005). Third-party infor-

mants – such as retailers, brands, and consumer advocates – may enjoy more consumer trust than the producers themselves, unknown brands, or unfamiliar messengers (Dunwoody 2007). Communication with consumers is beyond the scope of this work. Instead, we examine how the different conservation claims of eco-labels may be verified and the implications for consumer confidence.

■ Verification of eco-labels

The effort invested in verification should be optimized to match the standards for certification and the target level of consumer confidence. Certification standards range from trust in producer testimonials (affidavits from certi-

fied businesses) through independent (third-party) field verification, using approved scientific methods. We apply our three eco-label categories – Supportive, Persuasive, and Protective – to examine these different methods of verification and the meaning of certification. Indeed, Supportive, Persuasive, and Protective eco-labels experience different functional limits to credibility because of inherent constraints on the verification methods they can apply (Figure 2).

The funds generated by Supportive eco-labels can be audited, but it is practically impossible to go beyond this because there is no legal obligation for the recipient to report precisely how it used funds. For example, Endangered Species Chocolate is a Supportive eco-label because it claims that “10% of net profits [are] donated to help support species, habitat, and humanity” (Endangered Species Chocolate 2009). Their website indicates that the company donates to various causes, including wildlife

conservation. Organizations seeking support from Endangered Species Chocolate must apply for funds, and the website refers interested readers to recipients’ websites for more information. The consumer must therefore be satisfied with the reputations and philanthropic messages of recipient organizations. Although an auditor can account for use of the funds, the skeptic will wonder if they are being well spent.

Persuasive eco-labels address production and its possible impacts on wildlife and habitats (Table 1). As a result, these tend to enjoy more credibility than Supportive eco-labels. Some Persuasive eco-labels rely on producers’ affidavits to demonstrate adherence to conservation practices (eg Predator Friendly 2009). Other Persuasive eco-labels use site inspections to verify producer behavior (Searle *et al.* 2004; van Amstel *et al.* 2007a). For example, Salmon Safe is a Persuasive eco-label because it certifies various businesses, based on their pollution, land use, and other practices that may affect salmon watersheds. Use of the label is not contingent on verification of salmon survival or reproduction within the sphere of influence of each business (Salmon Safe 2009). Similarly, Dolphin Safe tuna certifies fishers who adopt practices that reduce bycatch of dolphins during tuna fishing (eg no encirclement of dolphins during a fishing trip or use of drift gill nets; Dolphin Safe 2009). Dolphin Safe is verging on being included in the Protective category, because its monitoring collaborator collects and publishes statistics on reduced dolphin bycatch worldwide (International Marine Mammal Project 2009), as evidence of wildlife conservation. However, the consumer may retain some doubt that a given shipment of tuna entailed no harm to dolphins. The doubt persists because the Persuasive eco-label depends on aggregate data from vast areas and not

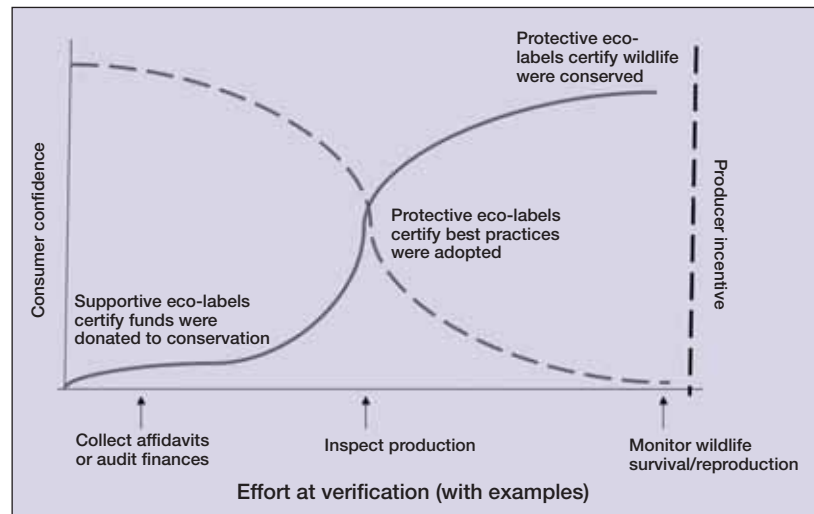


Figure 2. The theoretical relationship between effort at verification (horizontal axis), consumer confidence in eco-label claims (solid vertical axis at left), and producer incentives to participate (dashed vertical axis at right). Examples of verification procedures are arrayed under the horizontal axis and line up with our three types of eco-labels within the graph. The pair of curves depict hypothetical producer incentives (dashed gray) and consumer confidence (solid gray).

on verification of the individual tuna fisher’s impact on dolphins or the tuna industry’s indirect impact on dolphin prey and ecosystems.

Protective eco-labels certify that wildlife survived or reproduced in and around the participating producers’ properties. Most wildlife conservation eco-labels aspire to reach this level of certainty (eg Certified Wildlife Friendly 2009; Figure 3). Verification of improved survival of individuals of key wildlife species or upward trends in threatened species’ population indices could earn higher credibility than other types of eco-labels. However, verification will involve time-consuming site visits to monitor wildlife, which may require trained staff and sophisticated methods. As a result, thorough verification of Protective eco-labels may be prohibitively expensive. The producer’s incentive to participate is therefore likely to drop more quickly (Figure 2).

■ Relating credibility to consumer confidence and producer incentives

If one assumes that the profit curve in Figure 2 correlates strongly and positively with the incentive for producers to undergo certification, and that the confidence curve correlates well with the number of conservation-minded consumers who purchase the eco-labeled products, then it is possible to see two distinct strategies. To the left of the intersection of the two curves (Figure 2) are inexpensive products with eco-labels whose claims are opaque or unverifiable (low consumer confidence), but are produced in high volumes at low prices (many producers on-board). By contrast, to the right of the cross-over point there are lower volume, more costly products with verifiable claims that garner high consumer confidence and demand pre-



Figure 3. Domestic alpaca from All Things Alpaca Ecuador – a Certified Wildlife-Friendly business.

mium pricing to offset the costs of field verification. A number of industry-specific and local variables will determine the precise shape of the curvilinear relationships and the optimal point for verification effort; for example, new monitoring or production technologies (Figure 4) may enhance consumer confidence without costing producers more.

The effort invested in verification to assess compliance with certification standards depends critically on what is measured, and by whom. Verification by a third party offers consumers the most confidence, but incurs the highest costs. Conservation and biodiversity scientists have long debated how to choose appropriate indicators of successful conservation (Groves 2003; Salafsky and Margoluis 2003; Roberge and Angelstam 2004; Salafsky et

al. 2008). Several conclusions have emerged. When attempting to protect most or all of the biodiversity on a business property, the use of a single surrogate as an index of condition is unlikely to succeed. Current recommendations are to use multiple surrogates with diverse environmental tolerances and different sensitivities to human activities. By choosing the set of indicators carefully, the odds of an unmeasured species vanishing are expected to diminish. For Persuasive eco-labels that focus on one species (eg Dolphin Safe 2009), the indicator must be the most severe and urgent threat to that species. Indirect measures of the threat are unlikely to serve as good proxies. For example, measuring dolphin bycatch back in harbor may not be sensitive enough to detect if fishers dump bycatch out at sea. For Protective eco-labels – particularly those with a single focal species of concern (eg Tiger Friendly 2009) – one needs to focus on the key indicators of reproductive performance or survival to be confident that the population is being protected. There is no acceptable surrogate species, and thus the measures of condition must be chosen well to confirm conservation success.

The diversity of products under an eco-label will also affect the methods of verification. Many – if not most – eco-labels are tied to one or a few products or commodities (Table 1). Such “narrow scope” eco-labels include sustainably harvested fish (Fishwise 2009) and sustainably grown nursery plants (eg VeriFlora 2009). In contrast, some certification standards apply to a wide variety of commodities, connected by a desired environmental outcome. Among the “broad scope” eco-labels, we find Salmon Safe and Certified Wildlife Friendly, because very different businesses (foods, urban and natural areas, and foods, apparel, and toys, respectively) are being certified. The breadth of products covered by an eco-label will also determine how many producers will seek, or qualify for, certification.

Regarding producers, analysts debate how to balance the stringency of standards against recruitment of many producers. Some argue that expanding the producer pool dilutes environmental standards and serves bigger business interests rather than small producers (Guthman 1998). In an assessment of Marine Stewardship Council-certified fisheries, Searle *et al.* (2004) advocated low initial standards to recruit more producers, while attaching requirements that such producers continually improve their production processes. Properly executed, such compromises may allow fledgling certification efforts to survive and recruit many producers, as



Figure 4. A wild Andean (or spectacled) bear (*Tremarctos ornatus*) photographed by a motion-activated camera on the property of All Things Alpaca Ecuador.

well as helping to spread more sustainable practices throughout an industry. Indeed, several environmental certification efforts are credited with raising consumer awareness of threats to the environment and of promoting less-damaging manufacturing practices (Bartley 2003; Oosterhous *et al.* 2005; Ottman *et al.* 2006).

■ Novel alliances for certification

Eco-labeled products must compete in a crowded market with hundreds of brands and labels touting any number of benefits to the consumer. The obstacles to success in the marketplace go beyond branding and include trade regulations, quality and volume demands of retailers, and many other impediments to swift sales (Aquino and Falk 2001). Wildlife conservation organizations tend to be unprepared for this arena. Those attempting eco-labeling would do well to collaborate with business experts to design effective marketing campaigns and organize collectively, so expertise in verifying wildlife conservation is connected to expertise in reaching retail and wholesale outlets and persuading consumers. Wildlife conservation organizations and new graduates with expertise in environmental monitoring may find new niches as verifiers of eco-friendly manufacturing.

■ Conclusions

There is a fundamental, strategic tradeoff in the design and marketing of eco-labels, which is epitomized by wildlife-friendly eco-labels: transparent and effective verification increases consumer confidence, but lowers the incentive for producers to change practices and apply for certification. This conflict between producer and consumer puts pressure on certifiers to relax standards or cut the costs of verification, or alternatively to raise the costs of eco-labeled products. The former dilutes the meaning and value of the label, but expands market access, whereas the latter creates a niche market populated by only a few, dedicated consumers.

Supportive eco-labels – those donating profits to conservation – will never attain the highest level of credibility, because improvements in the environment are indirect and opaque to consumers. By contrast, eco-labels that encourage businesses to change production processes (Persuasive eco-labels) and those that demonstrably conserve the environment (Protective eco-labels) can gain higher credibility. However, they face obstacles to success because of the costs of field verification. Indeed, widespread profitability for Persuasive and Protective certification schemes may not be a realistic goal (Searle *et al.* 2004). Successful wildlife conservation through eco-labeling schemes demands the careful planning of wildlife-friendly production – balancing producers' needs, wildlife needs (Fischer *et al.* 2008), and consumer needs (Ottman *et al.* 2006).

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