

Commoditization of Nature:
Conservation, Preservation and International Regimes

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Abstract

Nature policy typically involves a struggle with the market, which over time tends to extend commoditization to virtually everything; regulatory logic limiting market dynamics has been a mainstay of environmental protection. Once "nature" becomes conceptually commoditized as "natural resources," conservation competes with development as a frame for defining interests in the biophysical world. The science of ecology later adds the more demanding concept of preservation as a third competing interest. In international negotiations addressed to global commons issues, nation-states represent themselves as agents of societies and as holders of rights in nature. Both claims are typically problematic. States' capacity to assume such obligations is a function of the tenuous and contested nature of their domestic claims. Attempts to exert power through command-and-control systems often further delegitimize the state vis-a-vis users of natural systems and reduce the possibility of governance. This paper considers three elements of the international nature regime - the Convention on International Trade in Endangered Species, the International Tropical Timber Agreement and the World Heritage Convention - and their dynamics in India.

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Nature and Property

The fundamental political-economic project for societies is sorting out rules for using and distributing scarce things in the face of conflicting interests. Human interests in nature¹ are most evident in a nature appropriated for human use; appropriated nature generates livelihoods and use values, as conceptualized in both mainstream and Marxian economic logic. Appropriation and alteration of nature for purposes of increasing human wealth and welfare are not entirely modern projects,² though modern means have enhanced the scope for intervention just as prior successes have increased the fragility of systems. To the extent that nature is perceived as "abundant" or dangerous – as through most of human history – rigorous regimes for its protection are subjectively unnecessary.

Political conflicts over nature begin with definition of the telos of human intervention and control: preservation, conservation or accumulation. The collective objective (and increasingly subjective) human interest in nature for itself posits imperatives of ecological integrity as a public good, threatened by depletion, independent of use values. This perception introduces a conflict between a conservationist agenda and a preservationist agenda. Internationally, the latter has been identified with rich nations, whereas the public good itself (less degraded nature) is spatially concentrated in poorer nations. Regime development at the international level increasingly asserts the reality of a global [ecological] commons, and ideational commitment to its preservation. In political reality, the accumulation and growth imperatives of dominant classes and the developmentalist state are more likely to drive property relations and environmental change. Therefore, addressing global environmental degradation has meant soft regimes around the edges of hard property rights-- peripheral strands of the "bundle of rights" we call ownership.

Commoditization of nature itself comes relatively late relative to agricultural land and domesticated animals, the value of which is more immediately self-evident. Individuated and state-guaranteed property rights almost certainly increase the probability that land will be "developed," as Douglas North argues most persuasively. Changes in property relations in the direction of greater conduciveness to development simultaneously increase the likelihood of resistance from losers. The literature on "defensive reactions" derives from unresolved conflicts in what Karl Polanyi called "the great transformation." Polanyi noted (1957:71):

"But land and labor are no other than the human beings themselves of which every society consists and the natural surroundings in which it exists. To include

them in the market mechanism is to subordinate the substance of society to the laws of the market."

When Polanyi conceptualized the commoditization of nature a central element in the "great transformation" to market society, he had in mind a process much broader than mere enclosures of the classic form: "What we call land is an element of nature inextricably interwoven with man's institutions. To isolate it and form a market out of it was perhaps the weirdest of all undertakings of our ancestors (Polanyi 1957:178)." In his formulation, pre-market economic relations, norms and outcomes were "embedded" or "submerged" in social relations generally; the extraction and elevation of market-driven dynamics from their social mooring produces significant social conflicts and centrally involves the state (compare Neale 1988). There is nothing "natural" about the market as arbiter of allocative decisions; challenges to market allocative rules evoked the use rights established by custom and common law as bases for opposition (e.g. K.S. Singh 1986; Guha 1989).

The making of market society entails the long historical process of collapsing differentiated use rights into a system of ownership in which individual private property rights are generally bounded only by the prior claims of the state.³ Much of the conflict over "the commons" (see below) is ideologically a conflict between alternative meanings of property and the rights of states to impose (novel?) proprietary claims.⁴ An appropriate appreciation of indigenous conceptualizations of property entails recognition of a socially defined (and disputed) "bundle of rights" (Baden-Powell 1892:V.I, p216, passim; Herring 1983: Ch 2) to patches of the physical surface of the planet.

The effect of colonial law in the Indian subcontinent was to simplify, collapse and locate concretely the bundle of rights in land with the objective of creating property rights in the sense of market property (e.g., Logan 1887:1, 670-696; Neale 1988). Simultaneously, vast tracts were "reserved" for the state on the claim that unused "waste" land had traditionally been "the property of the state" (Baden-Powell 1892: I, 236). Whether this transformation represents a qualitative shift or merely a linear projection of pre-colonial policy is a matter of dispute, given the weakness of pre-colonial environmental historiography (Guha 1995). But the transformation was extensive; as the use rights of subordinate strata inhabiting newly protected nature were nominally curtailed, a complex game of bargaining, cat-and-mouse evasion and outright confrontation resulted. Defensive reactions were set in motion by attempts of the state to claim and manage terrains previously defined by local usage (eg. Guha 1985; 1989; K.S. Singh 1986; Omvedt 1987).

Though internally disputed in vigorous policy debates within

he colonial state (cf. Presler 1987; Tucker 1984), the marriage of revenue/developmental imperatives (timbering, plantations, mining) with an emerging scientific discourse of forest management intensified confrontation with local societies' definitions of commons rights. This conflict continues, perhaps most sharply in the resistance of upstream forest communities to the state's claim to develop hydroelectric and irrigation potential through dam construction (CSE 1986: 99-120). The scope for conflict is large; the Forest Department alone administers 23% of the Indian surface area (Madsen 1995: 3).

Much modern discourse on environmental degradation and property systems takes place under the shadow of the "tragedy of the commons," a simple and influential model that explained why maximization of individual interests in resource use could result in catastrophe. The logic of that metaphor has been used by states as legitimation for seizing control of local commons on grounds of conservation; Leviathan may not be popular, but it putatively acts in the general interest when individuals cannot generate the collective action necessary to provide public goods. This construction has perhaps been so successful because it resonates with a common-sensical aphorism ([wrongly] attributed to Aristotle "that which is everyone's concern is in practice no one's concern."

Perhaps the "tragedy of the commons" is old hat by now. And yet it seems important to consider because of the increasing theoretical and political arguments for the superiority of local commons over state Leviathan in managing natural resources.⁵

In a deceptively simple and influential analytical move in the "tragedy" logic, maximization of individual material interests was held to produce sub-optimal, perhaps disastrous, consequences for that terrain: "the tragedy of the commons" (Hardin 1968; cf. Feeny et al. 1990; Ostrom 1986; Shiva 1986). But "tragedy" is only a part of the puzzles surrounding the commons.⁶ Robert Wade's formulation (1988:184) distinguishes between commons situations and commons dilemmas:

"The exploitation of a common-pool resource is always a commons situation, in the sense that any resource characterized by joint use and subtractive benefits is potentially subject to crowding, depletion and degradation. But only some commons situations become commons dilemmas: those where joint use and subtractive benefits are combined with scarcity, and where in consequence joint users start to interfere with each other's use."

Properties of scarcity and subtractive benefits are largely properties of particular ecologies, given exogenous human demand. Prevention of escalation from commons situation to dilemma to tragedy is a function of property systems: institutionalized patterns of rights and obligations. Hardin's tragedy resulted not from a failure of common property, but rather a failure to preserve open access pool resources precisely because no common property arrangements to limit use evolved.

States are supposed to solve failures of collective action, just as they are to solve more classic forms of market failure. The argument for state authority over nature hinges on this understanding of difficulty in spontaneous provision of public goods. It is true that our models of collective action often lack utility in dealing with real cases and are ambiguous even at the level of theory.⁷ Wade shows that collective action in agricultural villages to preserve common resources and increase production varies directly with material benefits realized by individuals; definition of a public good follows from the aggregation of individual material interests.⁸ Commons dilemmas in nature are the worst-case scenario for collective action: contested notions of the public good prevail, numbers of actors are very large, monitoring is difficult, benefits to individuals are tenuous, indirect and/or distant in time and space. The real tragedy of the natural commons is that the same logic of interests, short time horizons and instrumental values that make local commons protection problematic apply to states themselves.

Nature for Itself

State authority over nature almost inevitably involves a struggle with the market as arbiter of value, as Polanyi asserted. The logic in the tragedy-of-the-commons literature assumes that the value of the commons is instrumental. This notion carries over in the dominant policy language of "common property resources;" the natural is valuable insofar as it constitutes a resource, something to be exploited. Grazing lands in the original paradigm have value because they form the foundation for livelihoods. This instrumental view of nature in market economics is shared by the Marxian tradition.⁹ When Blaikie and Brookfield (1987: 1-7) discuss land "degradation," they use the Latin etymology of "rank," as though assigning ranks to capacities of the physical surface of the planet were unproblematic; they (knowingly) reduce "land" to soil.¹⁰ If ecology means anything, it is the irreducible interdependence of elements within systems. An ecological frame necessitates an alternative value frame.

The tragedy of the meta-commons is the failure of collective action to preserve the integrity of nature itself: the common bio-physical systems which support and depend on a full

complement of species and not merely our own. Even the most "rational," conserving use of pastures for sheep would be ruinous to the global commons if all forests were converted to pastures. As Blaikie and Brookfield (1987) understand, one person's environmental degradation is another's bonanza; wetlands regularly turn into meadows over time, which is good for agriculturalists, bad for biodiversity. Richard Eaton's (1990; 1993) study of the expanding frontier of cultivation at the expense of wetland forests in Bengal circa 1200-1760 illustrates this process: Islamic "saint-entrepreneurs" made use of symbolic appeals, underwritten by the space provided by superior authorities, to mobilize for collective action which achieved some collective good for participants (additional agricultural land) but simultaneously destroyed the mangrove wetlands in a piece-meal fashion at the margins.

The perception, policy and politics of conservation of a usable resource as a collective good is not nearly so problematic as that of preservation of eco-systems as a public good independently of their utility as resources. This is the classic Pinchot-Muir controversy of American historical experience, representing the struggle between meaning systems privileging conservation in opposition to those centered on preservation, or the conflict between social ecology and "deep" ecology (Herring 1991). At the level of politics, the "ecological consciousness" attributed to environmental movements in India has arguably remained more in the realm of defensive reactions than in the realm of recognition of ecological imperatives as collective goods (compare Raghunandan 1987; Baviskar 1993).

The political argument for conservation depends on the commercial value of that which is to be conserved; conservation law in colonial India was generated by the imperatives of long-term access to forest products for export, military uses and construction of rail nets (e.g. Guha 1989: 37-61). The politics of preservation must be rooted in more tenuous values of aesthetics, risk, or species ethics (derived from the reality of species mastery). Responding collectively to the meta-commons dilemma requires recognition of interests which are temporally removed, collective in the broadest sense (species-wide), and embedded in the uncertainty of a technical discourse which can be evaluated only by a tiny elite.

The tension between an instrumentalist view of nature and an idealist argument for the value of nature per se shadows the tension between the commoditization of market society and pre-market or extra-market sources of values. When value is measured by use, priced in markets, nature depends for its preservation on extra-market valuation in the "moral-economy"¹¹ tradition. In the absence of market power, preservationist values can become actualized only through a political process which bounds and

limits markets. A common means of attaining this end is to remove elements of nature from the market in favor of management as de facto or de jure state property.

Real States and Meta-Commons Dilemmas

One solution to original tragedy-of-the-commons model was commoditized land as private property.¹² No rational shepherd would degrade his/her own land by overgrazing; to do so would decrease the value of the commodity. Therefore the division of common pasture into individually owned plots could be expected to avert destruction of a common resource (cf. Ostrom 1986:8).

Market solutions to environmental problems are currently popular, and in the case of patented biota may be ecologically friendly. But in general, individuated property rights are useful only so long as the level of exploitation does not measurably degrade the resource any further than the value of the short-term benefits of exploitation in the perception of a knowledgeable and rational rights holder. Conservation will, even in the best-case scenario, be limited to the very loose constraint that degradation does not interfere with market rationality. Market rationality, in turn, will only incidentally coincide with ecological rationality (compare Singh 1976; Desai 1987; Nadkarni 1987). Ecosystems are large and complex; individually rational behaviors (diversion of surface water, draining of wetlands, clearing of forests, etc.) still offer the likelihood of counter-finality in a context which is extra-local and extended in time. As importantly, human lives are short in terms of the evolution of ecosystems; it is difficult to imagine a fit between short-term interests and intergenerational "rationality," or justice, being generated by the market (Nadkarni 1987: 360-61 et passim).

As a consequence, one solution is that of both Thomas Hobbes and the earlier Indian political philosopher Kautilya¹³): a powerful state which could impose its will on subjects for their own (common) good. As early as the **Laws of Manu**, it was recognized in Indic political thought that local commons overlap; an ecological understanding makes it clear that even effectively regulated commons need an overarching constitution if not state. This legitimation is commonly used to support the privileging of state property claims over those of individuals or communities for conservation or preservation.

State-centric developmental processes accentuated the critical proprietary role of the state. State-led economic change in India was accelerated by proprietary claims of colonial rule but was presaged by vedic, puranic and state-craft literature of India long before colonial rule (Ragunandan 1987:545). Much of the debate at the intellectual and regime level (e.g. Guha 1990) centered on how much can be assumed about local capacity to

manage local commons dilemmas, preventing their escalation to tragedy. The dominant understanding for a very long time has been that "villages" (and "villagers") need Leviathan."

The problem with the Leviathan solution in political theory is the absence of a guarantee, or even a likelihood, that the state will not behave in the same self-seeking, social-disregarding manner as individuals (cf. Ostrom 1986). The developmentalist state in particular derives its legitimacy from leveraging growth, producing many of the same motives, instrumentalities and outcomes of the private owner but on a vast scale.

Leviathan as metaphor conveniently links will and implementation in one (resolute) actor. Yet states of the subcontinental region are indeed (selectively) "soft" (in Gunnar Myrdal's [1968] memorable formulation). Real states in the subcontinental region demonstrate not only the permeability and bureaucratic pathologies which generate "softness," but also both vertical and horizontal incoherence; as lower levels of the state ramify into society, they become less and less distinguishable from society, much as blood vessels ramify into capillaries and finally disappear into tissue. Neither political will at the top, nor transmission capacity through the system can be assumed. More importantly, real implementation must take place on the ground, where the local state exhibits the permeability, incapacity and embeddedness characteristics in extreme form.

....The permeability of (especially) the local state to powerful interests bent on exploitation or evasion of regulation is a pervasive phenomenon in South Asia and the source of significant environmental degradation (e.g. CSE 1986: 353-382). And even assuming, relative autonomy and capacity, structural pressures for taxation revenue and hard currency earnings have abetted environmental degradation throughout the subcontinent (e.g. Agarwal 1985: 363-366). But most importantly, Leviathan is not a stable configuration; exclusion and control evoke the politics of opposition and evasion, reducing state capacity. The conflict between the Bodos and the state over control of Manas, one of India's five natural sites protected under the international World Heritage Convention (see below) is illustrative.

Because of these political conditions, the tragedy of the commons in South Asia is a more serious case of "counter-finality" than even Hardin's pessimism implied. This is true because the theoretically possible solutions present severe difficulties in the concrete social settings of the region - extraordinary levels of destitution, state incapacity -- and because one must distinguish common property resources from the environment generally as a meta-commons. The politics of the environment in the region represent variable levels of intensity,

but it is clear that the state in general cannot play the Leviathan role effectively. Indeed, having the state weigh in on the side of preservation may prove counter-productive, so deeply is it compromised in local political perceptions. In the case of "Silent Valley" in South India, the Center's intervention on the side of preservation aided in transforming political dynamics in the direction of local people vs. the state, periphery vs. center and, in a curious twist, Bharat vs. India.

A species-level learning process has dramatically expanded not only the scale over which control of environmental processes had to proceed, but the breadth of implications for economic life. Patents on biotic materials and processes is becoming big business. Just as the embeddedness of local commons logically necessitated a larger scale of authority, only cooperation at the international level would address the potentially global tragedy of the meta-commons. States would have to cede some sovereignty, some of which they had only recently forced their societies to cede to them. The residuals of pre-transformation systems of property - its contested nature in particular - leave compromised the state's establishment of its own property rights in nature.

Creation of "public" property then resolves little. New political conflicts around the issue of defining the public and determining its collective "interests" are structurally inevitable. Reserved forest lands are not "private" property, but de jure prohibited use rights are often for sale (illegally) in practice. Legal definition of reservation for a public purpose merely introduces a conflict between the state's historically contingent claims on monopoly of definition of the public good and those of inhabitants and users of forests, as well as conflicts between the relative values of hard currency earnings, employment, international competitiveness, and ecological integrity. With the globalization of environmental policy, the definition of public goods moved even further from the proximate users of nature.

Disaggregating the State

Political authority over nature in India is parcelled out through a very complicated structure. The political system is federal; much that happens at the centre is of little importance in the States, or at least cannot be assumed to effect policy in the States. The form of federalism itself is under continuous renegotiation. This is especially true with regard to environmental affairs, since the Centre has had an environmental ministry only since 1985; Centre-State negotiations of environmental policy are not fully worked out. Most issues of environmental importance - water, land, forests, fisheries, public health, agriculture, wildlife - were constitutionally

subjects reserved to the States before recent legislation added some to the concurrent list of joint centre-state responsibility.¹⁵ Centre-State conflicts on the goals of managing state property in nature are endemic.¹⁶ The MOEF report for the World Bank on Environmental Action Programmes (November 1992:24) stated:

There is a reluctance in most states to strengthen their departments of environment, despite the ever-increasing role that such a department is being called upon to play. Many states also want the decentralization of environmental powers from the Central Government...but are not willing to correspondingly strengthen their departments. This reluctance symptomizes the low priority that many states give to the conservation of the environment. Even the outlays suggested in the annual and five year plans, for environment, by the Planning Commission are invariably cut down.

Moreover, the centre's political complexion has undergone significant alteration, moving from single-party dominance in the first two decades of Independence to considerable instability in recent decades. An unstable centre in turn means that bargaining with the States becomes more decisive; the centre has to reserve its political capital for issues of great urgency (such as maintaining a fragile majority government at the Centre). During the past three years a very weak Centre capitulated to State demands for weakening Environmental Impact Statement requirements and delegating more power to the States. Likewise, the No-Development Zones around national parks and reserve forests were compressed (by 80%) and State demands that "non-polluting" industries be allowed even within the NDZs were met.¹⁷

In a number of Indian languages, there is an aphorism which runs roughly: "above there is god, and below the keeper of land records." The implication is that no one in between matters much.¹⁸ Local keepers of records of rights in land have always been, in theory, part of "the state." In fact, they are very much embedded in local society. One's rights in land depend on what the record says, on who can pressure or intimidate the recordkeeper, on the courts' interpretation of both statutory law and rival evidentiary claims, the differential staying power of parties to the dispute, perhaps the Supreme Court's decision, and ultimately on the local state's will and capacity to implement the courts' decision. Just as "all politics is local," all rights are ultimately local. All state claims to property in the last instance depend on someone at the level of the keeper of records.

But governments can hardly go to international conferences and plead complexity and incapacity; international negotiations

are displays of stateness. International treaties assume real capacity on the ground. I will discuss three international treaties to demonstrate the reasons for fragility in the state's claim to authority over nature. These treaties are linked through natural resource issues in which state capacity is limited and local populations have a strong normative and political claim against enforcement.

Rigging **the Market for Internationally Traded Species**

The Convention on International Trade in Endangered Species of Flora and Fauna (CITES) addresses the global biodiversity interest by imposing constraints on trade. It applies to those discrete pieces of nature already commoditized through international channels of supply and demand. India has been especially important in the operation of CITES, ratifying the treaty early (20th July 1976) and being elected Chairman of the Standing Committee for an unprecedented three consecutive terms, beginning in 1983 (S. Singh 1986: 199).

India's implementation of CITES is stricter than CITES. Primary mechanisms are the Wildlife (Protection) Act of 1972, the Customs Act of 1962 and the Import-Export Policy; the Director of Wildlife Conservation is the Management Authority. Wildlife was moved from the State List to the Concurrent List by constitutional amendment in 1976, giving the Centre more control. Chapter XVI of the Import-Export Policy (1993), under the Foreign Trade (Development and Regulation) Act of 1992, prohibits exports of "all forms of wildlife including parts and products [p 74]." Wildlife is defined as "all plants and animals." India's CITES Annual Report of 1993 (1) notes: "With the domestic trade in wild animals already banned and virtually a complete ban of export of all forms of wildlife, there is hardly any room left for unscrupulous elements to export wildlife ... in the garb of permissible items..." The legal framework is unusually comprehensive; compliance is difficult to monitor and enforce.

Import of both animals and plants is allowed on recommendation of the Chief Wildlife Warden of a State government subject to the provisions of CITES.¹⁹ Permission is essentially limited to zoological or scientific purposes. India is not a major importer; in 1993 the total number of animals, mostly for zoos, was 71. Imports of flora are likewise minimal.

Legal exports of animals have for years been very small, mostly to zoos. CITES-certified exports of flora are increasing rapidly; in 1993, listing of exports took 37 pages of the Annual Report. All exports were certified "cultivated," and without exception for purposes of trade (as opposed to scientific uses). This increase seems to be evidence both of increased international trade in exotic plants and increased awareness of

CITES regulations. Not all "cultivated" certifications are authentic, but traders are increasingly aware that they must have them. Only a Legal Procurement Certificate (or No-Objection Certificate) is required, obtained from Divisional Forest Officers (very junior officials) who find them difficult to verify. Distinguishing species and origins of plants is even more demanding than for animals. The threat to endangered flora from trade seems to be growing but is little researched.²⁰ Moreover, the community censure that often attaches to killing of animals - and some trees - is not so easily activated for plants in general.

Illegal export of plants is a relatively new concern; animals have dominated compliance efforts. The range is great: ivory, rhino horn, tiger bone, furs of lesser cats, musk, peacock feathers, reptile skins, tortoises and many others; the scale is impossible to estimate.²¹ This international trade indicates the existence of an internal market for animal products which is illegal under the Wildlife Act.

Exports of wild animal skins and garments were banned in 1979, along with indigenous ivory. Strengthened efforts against poaching were triggered by evidence of increased killing of the flagship species, tigers, in the 1980s. India's wildlife conservation efforts were symbolized by Project Tiger from 1973 onwards. Though it is now fashionable to downplay glamorous megafauna, the world has lost probably 95% of its tiger population this century; India remains the last best hope for avoiding extinction of this majestic animal. The Central Government inaugurated the Control of Poaching and Illegal Trade in Wildlife scheme in 1986; included were improvement of telecommunications through a network of wireless stations and walkie-talkie sets, more vehicles for enhanced mobility, arms for protection staff, establishing check-posts and rewards for information or apprehension of offenders - in effect creating slush funds for encouraging intelligence and diligence (LSQ 4776;4781 26 August 1987). Nevertheless, Government officials both at the Centre and in the States have been alarmed by subsequent escalation of trade in tiger bone.²²

Believing that smuggling would be diminished if internal trade were more strictly controlled, on November 20, 1986, the government prohibited carrying on business or trade in articles made from listed animals under Chapter VA of the Wildlife Act. Enforcement was disrupted by a legal challenge. Traders of furs and skins argued that Chapter VA violated their rights under Article 19g of the Constitution, the right to earn a livelihood. Traders tried to sell legal stocks in the interim; the Government claimed that "stocks" were a cover for continual purchases. The Delhi High Court ruled on January 23, 1987 that the Government must buy the stocks at market value, which the Government argued

it could not do except by legitimizing the commoditization of illegal commodities.

The Ivory Traders and Manufacturers Association raised a similar challenge. A stay granted by the Court was used by nearly 300 petitioners along with the cottage industries association. India has the largest number of ivory workers in the world. Ivory craftsmen and dealers mobilized; a long court battle ensued (Chengappa 1993; Panjwani 1994). Effective May 23, 1992, a total ban on import and domestic sale, transfer or display in any commercial place of African elephant ivory was enacted. The intent was to protect endangered Asian elephants by preventing laundering of Asian ivory as African ivory. By 1992, both stays had been vacated and the right to livelihood protection had been finally dismissed by the Supreme Court's refusal to hear the case. WWF-I was prominent in these, and other, legal battles to enforce both CITES and Indian law.²³

Smuggling routes are difficult to monitor because of India's very long borders, many in inaccessible areas. Major CITES enforcement efforts are concentrated in the four metropolises; smugglers avoid these points, in favor of small ports such as Tuticorn, though a surprising number of seizures are made in Delhi (TRAFFIC-India 1994). Tiger bones and parts move through Bhutan and Bangladesh to Southeast and East Asia; tiger pelts and birds move west to the Persian Gulf. Monkeys and a variety of pets go to the United States. Furs and snake skins move through Nepal to Europe. Kashmir, where military conflict reduces the reach of the state, is a major fur-trading center. Calcutta has been the major bird export nexus. Traders use the posts, rails, pack animals into Tibet and Bangladesh, ships to the Persian Gulf, luggage aboard commercial aircraft and many other vectors. The variety of routes and techniques creates severe jurisdictional and tactical difficulties for enforcers.

Though illegal consignments are regularly seized, penalties on kingpins are extremely rare. Cases drag on for years; seized stocks remain the subject of long legal battles. It is difficult to know whether enforcement efforts are reducing smuggling. Certainly the seizures are increasing in volume and value - especially in 1994 - which may indicate more traffic or better enforcement. The most knowledgeable people think it is both: more traffic because of international price movements, and somewhat better enforcement. Enforcement is improved by the small sums available to officers to buy intelligence; an improvement would be to match the customs' practice of 10% of the haul as a reward, but seized stocks are assigned no monetary value and destroyed. It is now harder to forge CITES certificates, but not impossible. Co-ordination among police, customs, wildlife wardens and at least nine other agencies involved in enforcement is improving in part because of efforts initiated by WWF-I and the MOEF with

support from the CITES Secretariat.²⁴

The CITES regulatory regime is limited by its commodity-denying and counter-market nature. High value products will find markets; borders are porous, enforcement personnel are spread thinly, often outnumbered and/or outgunned, and corruption is always possible in a high-value game.²⁵ Better administration will not stop trade when stakes are high, as we have learned universally from narcotics. The importance of CITES is the recognition that simultaneous work on both demand and supply sides of the equation through international cooperation is necessary for improving survival chances of species threatened by commoditization. The global commons interest in biodiversity is at odds with the power of international markets and the state's fragmented and contested authority over its claimed property in nature.

Trade in Tropical Timber

The International Tropical Timber Agreement (ITTA) began as a means of promoting a stable market for tropical timber commodities. Overtime, conservationist exhortations were added. As with CITES, Indian law is stricter than the conservationist exhortations of ITTA; Indian policy rejects its commodity-promoting intent. Chapter XVI of the Import-Export Policy (1993) [section 7] prohibits export of "wood and wood products in the form of logs, timber, stumps, roots, barks, chips, powder, flakes, dust, pulp and charcoal." The only explicit exception to this very thorough cataloging is sandalwood handicrafts [section 9]. Restriction of exports, and a liberal policy toward timber imports, are meant to prevent further deforestation.²⁶

Signing the ITTA did not directly influence India's forest policy. The treaty imposes no environmental claims on India not only because of its commodity-promoting nature, but also because India does not (legally) export timber, with rare exceptions,²⁸ but only value-added products. Nevertheless, objectives of India's forest policy have long been consonant with those of ITTA Article 1, Paragraph h: "sustainable utilization and conservation" and "ecological balance." India now has 639,182 sq.km., or 75.01 million hectares, of "forests" - 19.44 percent of geographical area.²⁹ Major threats to forests are stated succinctly in the National Conservation Strategy (1992: 3):

"Our forest wealth is dwindling due to over-grazing, over-exploitation both for commercial and house-hold needs, encroachments, unsustainable practices including certain practices of shifting cultivation and developmental activities such as roads, buildings, irrigation and power projects."

Forest policy evokes intense controversy in India. In the pre-colonial period, forests were not conceptualized as limited or threatened, but rather a resource to be converted to human use values; forest-clearing for settlement and agriculture was honored (Raghunandan 1987). The modern policy logic of forest conservation begins in the late nineteenth century as an outgrowth of European "scientific forestry" organized for sustained yield for extraction (which increased dramatically with the demands of empire ([see, e.g. Guha 1985; 1989])). Forests essentially became state property, with different functions. Reserved Forests were used by the government for timber production; Protected Forests permitted limited extraction by local people for their traditional subsistence needs: fuel, fodder, and non-wood products. Continuation of this colonial system is increasingly attacked as ineffective, unjust and undemocratic (Hiremath, Kanwalli, and Kulkarni 1994).

The National Forest Policy of 1952 set a goal of 33% forest cover for the country; States enacted their own legislation. In 1976, forests were moved from the State List of the Constitution to the Concurrent List, giving Delhi more control. Social forestry programmes for afforestation began in 1976 on recommendations from the National Commission on Agriculture.³⁰ In 1980, the Forest (Conservation) Act was passed to prevent deforestation and protect habitat for wildlife conservation. This controversial act prohibited conversion of any forest area to non-forest use without Central approval. Approved diversions for development projects had to be compensated by an equal area of afforestation. The Act spawned substantial Centre-State conflict; a typical representation in Parliament taps difficult issues:

"There is an urgent need to provide employment to the people in Maharashtra, especially in the district Nasik, but due to the Forest Conservation Act, 1980 ... all the development works in the area have been held up. Many development works which were started earlier have become stalled. Crores of rupees have already been spent on them...I would request that a little relaxation would be provided ... so that employment could be generated and the people may not have to starve (LSO M/R 377 March 26, 1990)."

Amendment of the Forest (Conservation) Act in 1988 coincided with a new National Forest Policy. Noting that the 1952 Forest Policy's goal of restoring forest coverage to 33% had failed and that destruction of "genetic diversity" had been extensive, the policy envisioned joint-management, power sharing between villagers and forestry officials, compensatory afforestation for developmental diversions of forests, and eco-restoration with joint usufruct. The biodiversity function was stressed as the expense of revenue production as the public good provided by forests. In theory, the inadequacy of the command-and-control

logic of colonial forestry was appreciated, though working out new institutional arrangements in the face of suspicious subjects and recalcitrant officials will take dogged commitment and creativity (on which, see Guha 1994)- Experiments in process attempt to disentangle the property-rights bundle in favor of local communities.

Despite official gestures toward participatory forest management, policy to ensure sustainable use remains controversial. Politically, the contradiction is between centralized bureaucratic control and devolution to States and communities. Normatively, there is conflict over conceptualization of forest dwellers' daily practices as "concessions and privileges" (granted by the state) as opposed to rights inherently vested in local people. Environmentally, the conflict is between preservationist "deep ecology" and the social ecology of development favored by most activist NGOs (Herring 1991). Empirically, in terms of forest conservation, there are no easy conclusions and deep disagreements.³¹ Conflicting claims to resource stewardship, conservation values, employment and social justice are no easier to resolve in India than in the old growth forests of the United States. Whatever the resolution at the level of policy, state proprietary claims to forests will remain contested and contingent.

Constraining Markets in Fragile Ecosystems

The World Heritage Convention (WHC) recognizes a global public good in the preservation of biologically important spaces of national terrain. It achieves this function via rigging of land markets. States are expected to remove ecologically rich and sensitive areas from their highest use value in market terms. There has been conflict surrounding the justice of different ratios of land removed; India reserves just under 5% of its land area for environmental protection - on paper. India's WHC natural sites are a subset of its national parks.³² Of India's five natural heritage sites, two have been seriously threatened in recent years - Manas and Kaziranga; the Northeast is rich in hotspots of both biodiversity and political rebellion.

Manas is one of India's largest (2,837 sq. km.) and richest protected-areas, containing 22 known endangered species; it became a WHC site in 1986. Agitation by the Bodos for a separate state began March 2, 1987; in addition to autonomy, their demands included an end to plantation monoculture in the area, prohibition of foreign liquor, preventing exploitation by middlemen in forest products, expulsion of Assamese and withdrawal of the paramilitary Central Reserve Police. Guerrillas of the Bodo Security Force found sanctuary in the park. Structures were burned and field officers were evacuated after a number were killed; much of the area was in effect surrendered to

guerrillas. As staff departed, the "wildlife and timber mafia" moved in without restraint. Wildlife were destroyed, including threatened species such as the swamp deer. The grasslands, which are the last refuge of the floricans, hisped hare, pygmy hog, and other species, were extensively burned; timber was felled. In response, a typical developmentalist program was announced in 1990, funded by WWF-I, to defuse tensions: development of the buffer zone with cooperatives, apiculture, pisciculture, and so on. A Memorandum of Settlement creating a Bodo Autonomous Council, covering 2000 villages, was signed in 1993.³³ Nevertheless, the conflict is not resolved; guerrillas remain active, but increased staff with more fire power re-established tenuous state control over most of the park.

Kaziranga has been threatened by both large-scale poaching and development. As in Manas, gangs of poachers outgunned forest guards. The State government blamed the Centre for inadequate funding; the Centre countered that allocated funds were under-utilized. In 1990 Kaziranga was placed on the threatened list of the International Union for Conservation of Nature; Manas was already on the list. Kaziranga had been listed previously because of poaching and plans for rail connections; it was removed from the list and then placed on it again as plans for an oil refinery nearby were announced.³⁴ As in Manas, there have been cycles of threat and response, Centre-State conflicts over responsibility, and speculation among wildlife activists that timber and poaching gangs could not thrive without political connections.

All protected areas are susceptible to people-wildlife conflicts; in the Sunderbans WHC site, these involve tigers that kill people. The widely publicized "tiger widows" of the area demand compensation from the state for depredations of animals which the state has in effect declared its property.³⁵ In the Bharatpur WHC site (Keoladeo National Park), a ban on grazing of domestic buffaloes in 1982 led to conflict between officials and villagers, shooting deaths and an unanticipated biological outcome. Bharatpur presents a paradox of the preservationist mission in biological terms: its globally important biological function as a migratory bird breeding ground resulted from anthropogenic landscaped changes for the hunting pleasures of the aristocracy. Banning grazing in national parks in some sense preserves their natural integrity, but in Bharatpur the ungrazed wetland became choked with weeds and paspallum grass previously kept in check by grazing. The transition from ecologically sensitive wetland to emergent grassland (a natural process) creates suboptimal habitat for avifauna (many migratory, some endangered, and thus a global concern) for which the area was made a WHC site. Compromises with militant villagers have allowed human removal of grasses. International threats to delist Bharatpur have been resisted by the Government of India.³⁶

World Heritage Convention "natural" sites represent a thin claim of global property in nature. The criteria for what counts as preservation are unclear. [If smuggling threatens the status of Manas, does commercial tourism threaten Yosemite, a WHC site in the United States?] In India, they receive no more legal and administrative protection than other national parks. Their very richness in biological terms is in part a function of being inhospitable in terms of human developmentalism. Isolation and remoteness in turn render the state's proprietary claims more difficult to assert.

Regulating **Nature and Global Commons Protection**

Unlike treaties such as the Montreal Protocol, which require novel innovations by states, global nature-treaties are congruent with, and in some respects lag behind, Indian legal development. Compared to many nations on the periphery, India has developed significant capacity to comply with the treaties it signs and has imposed significant limits on markets in nature and its commoditization.

Nevertheless, regulating nature severely tests state. CITES, ITTA and WHC are linked through issues in which local populations have strong normative and political claims against state restrictions; livelihoods are at stake. The ability of states to enforce claims on nature hinges on governance - that elusive mix of authority, transparency, representation, participation, resonance with local norms and cooperation. Institutional capability variables (how many officers, with how many vehicles, walkie-talkies, weapons, with how much organizational coherence, etc.) constitute necessary but not sufficient conditions for enforcement after some threshold capability is reached. More important are variable relationships between bearers of state power. Power capacity in and of itself is not only insufficient to enforce rights in nature, but may, in the typical command-and-control routines, undermine capacity for governance.

Protection of natural areas creates conflict with the use-rights, property and often safety of surrounding populations in a land-scarce economy. Jagan, Sarpanch of Kailashpuri, a village removed from Ranthambore National Park, where there was resistance to "resettlement" said: "Our sacrifice to the cause of the tiger was a joke. The Forest Department could not **take** care of us, the animals or the forest, so what right do they have to be employed? They left the tiger in the hands of the poacher and left us in the hands of God (IT 15-8-92)." All protected areas are susceptible **to** people-wildlife conflicts; in the Sunderbans WHC **site**, widely publicized "tiger widows" of the area demand compensation **from** the state for depredations of animals which the state has in effect declared its property.³⁷

"Buffer zones" between people and protected nature have not generally been an effective strategy for both technical and administrative reasons. As the ecology of the "core" area is difficult to predict or control, success in raising predator populations or degradation of forage for herbivores causes animals to leave the core and destroy livestock, crops and sometimes people. These dilemmas are serious in a political democracy; the MP from Almora said in the Lok Sabha: "due to the increase in ... tigers in the Corbett National Park ... and non-availability of adequate food for them, the tigers come in the areas adjacent to this park and it creates a terror in the neighboring villages... In my constituency about 200 people have been either killed or injured by tigers during the last three years. There is terror in the villages ... Sillour and Silt villages are gripped in terror." He asked for more guards, barbed wire fence, and victim compensation "as it is being paid to the persons killed or injured in rail or air accidents (LSO M/R 377 (I) April 27, 1990)." Furious at the state's callousness in compensating loss, and incapacity to control its marauding property, villagers predictably defend themselves by killing predators.

When the state is more enemy than public trust, confrontation and evasion are more likely than cooperation; governance gives way to coercion. The famous poacher and smuggler Veerappan for more than a decade smuggled ivory from South India, and, when tuskers became rare, turned to sandalwood. Efforts to track and capture Veerappan led to police personnel being killed in ambushes and encounters, six individuals in 1993 alone, including senior officers. He knew the terrain, had kinship connections among then Padiyachi Gounder community, and moved easily among the villages, where police were feared and distrusted. In 1993, the job of catching Veerappan was transferred from the police to the paramilitary Border Security Force. Their tactics have treated all villagers as potential supporters of Veerappan; those suspected of withholding information or aiding Veerappan's gang were tortured.³⁸ The state's claim that certain stretches of terrain and certain components of ecosystems are state property, to be neither commoditized nor encroached, little deterred his livelihood but made new enemies for the state.

The very remoteness of "natural" reserves, necessary for their biodiversity function, makes them attractive to anyone who wishes to avoid the state, undermining their biodiversity function. State incapacity to control smugglers, socially ensconced bandits, kidnappers, insurgents and drug dealers³⁹ merely reflects the larger phenomenon of parallel power beyond the reach of state authority and pervasive antagonistic relations of rural people to the state. Just as rural rebellion often begins in "banditry" in remote areas, challenges to state

authority often begin in, or are legitimated by, disputes over claims to natural resources, frequently connected to demands for autonomous political space. MS Pal, MP for Nanital, argued that the Forest Conservation Act (1980) had stopped development work in the Uttarakhand region of Uttar Pradesh. As a result, "resentment among the people is growing and the feeling of a separate state is gaining momentum (LSO 066, M/R 377 March 22, 1990)." This connection between subnationalism and natural-resource use, one step more radical than the "sagebrush rebellion" over federal control of land use in the western United States, may be used instrumentally by politicians, but, constitutes a predictable outcome of intrusive state power that is not locally sanctioned or leavened with participation.

Micro-Macro Governance

States have had, and will continue to have, mixed motives in declaring authority over segments of nature; the net effect on environments is determined by a very situationally contingent mix of motives, capacity and will. The argument for a capable and activist state to enforce preservationist norms presupposes a legitimate state. In a hierarchical world economic system, legitimacy may well presuppose precisely that form of development which has devastated so much of the global environment. The growth-legitimized state cannot easily demand sacrifices to preserve as nature space demanded by the poor for livelihoods or the rich for accumulation.

Inferior position in an unequal world system constrains both will and capacity for state-led environmental solutions. At the White House conference on global warming in 1990, India's greenest environment minister, Ms. Maneka Gandhi, argued that poor nations necessarily put development before environment; democratic institutions ensured that "legitimate aspirations" of the poor to catch up as soon as possible to rich-nation standards could not be denied (HT 19-04-90).

International regimes create a difficult tension. The international systems simultaneously urges economic liberalization and environmental management; the magic of the market and the specter of externalities both require urgent attention and sacrifices in the periphery. The former necessitates disengaging an intrusive state; the latter requires an activist, interventionist state. Contraction of the state's regulation of industry is counterposed to expansion of state control of nature. It is not difficult to construct the North's prescriptions on both scores as a hypocritical "do as we say, not as we did." In a fairly typical response from the South, India's representative to the 1993 ITTA conference said to me: "having killed all their forests, they now presume to tell us how to manage ours."

There is contradiction in the demand that the international system become more a market, absent state meddling, and the simultaneous demand that market failures and externalities (of which ecological integrity is perhaps the most egregious) be considered in global terms. Emergence of global regulatory regimes with state-like properties attempts to solve the planetary commons problem by constructing a soft global Leviathan. Of these two tendencies, global neo-liberalism is dominant, legitimated by growth, not justice or ecological integrity. Globalization of markets and market reforms in the former socialist bloc have had a perverse effect on CITES in India, for example. Eastern European and Russian entry into the market operating with hard currency and fewer constraints on trade has accelerated depletion of endangered species in India.⁴⁰ Truly free global trade, as Polanyi noted, is chimerical; politics determines what will be included in and excluded from market arbitration.

The late 20th century witnessed a sea-change in the valence attached by mass publics and intellectuals to state intervention. States are increasingly seen as more a part of the problem (any problem) than of the solution. State authority in nature is not immune from this intellectual reversal. Yet the character of meta-commons dilemmas makes a strong case for nested authority, certainly larger than local, despite the litany of failures. Globally, states remain the actors among whom agreements are made. The environmentally engaged nation-state becomes Janus-faced - looking to a global system of international pressures, bribes and censure that presuppose its competence, and simultaneously to local societies that distrust its effects and contest its claims. As some developments in international soft law reinforce the state's obligations to manage nature, others reassert the rights of indigenous peoples to "environmental rights" and local control.⁴¹

Given powerful forces of economic integration and growth pressures on states, centralized control is no guarantee of even conservation, much less preservation. Simultaneously, the "great transformation" produces intense pressures for the commoditization of everything and the further individuation of interests.⁴² This statement does not presume the romanticized notion that the ancients and locals were incapable of environmental error or destruction, which is clearly wrong,⁴³ but does suppose that social learning at a very local level has cybernetic advantages over centralized bureaucracy.

Global governance of the natural commons presupposes local governance. Expansion of state claims reduces the institutional and cultural diversity of local arrangements - a perceived precondition for administrative rationality.⁴⁴ The state's pernicious effect on local accommodations to natural systems is

both structural and cultural; centralized states reduce both the political space within which local communities can work institutional solutions to perceived problems and the authority of existing institutions. Just as reduction of biodiversity precludes options, traditional state control of nature reduces the richness of institutional and cultural diversity from which governance can be constructed.

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Abbreviations

AST: Assam Tribune (Guwahati)
ET: Economic Times (Delhi)
DH: Deccan Herald (Pune)
HT: Hindustan Times (Delhi)
IT: India Today
LSQ: Lok Sabha Questions
MH: Maharashtra Herald (Pune)
PIO: Pioneer (New Delhi)
RSQ: Rajya Sabha Questions
TEL: Telegraph (Calcutta)
TOI: Times of India

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ENDNOTES

1. For the purposes of this paper, "nature" will be essentialized and uninterrogated. Nature will take on its meaning in ordinary discourse. Presumably everyone is aware by now that, in the words of Lukacs (1923:234): "Nature is a societal category...whatever is held to be natural at any given stage of social development, however this nature is related to man [sic] and whatever form his involvement with it takes, i.e. nature's form, its content, its range and its objectivity are all socially conditioned."

2. See Raghunandan 1989; Eaton 1990; 1993; S. Guha 1995 and below.

3. The near universality of village commons, and pressures for their privatization, is documented by Schenk-Sandbergen (1988:1.2), based on her own research and secondary analysis of classic anthropological studies. N. S. Jodha, in a path-breaking empirical analysis, has documented the importance of "common property resources" to the village poor in India (Jodha 1986). His survey found that the economic benefits of using the commons were greater for the village poor than were the benefits of government programs targeted for their welfare. Privatization of village commons in India has simply constricted further the survival options of the poorest villagers.

4. The hegemonic literature on Indian ecological history tends to view the claims of the colonial state as novel, and therefore productive of resistance. Sumit Guha's (1995) work on medieval Maharashtra suggests that this is not the case.

5. "Our rule in our village" is the political expression of the current fascination with decentralization as solutions to the state-crisis, which in this worldview is responsible for multiple ills across many dimensions, from economic failure to environmental degradation. See for example Agarwal 1993; Kothari and Parajuli 1993.

6. Nor is the outcome limited to land-use dilemmas. The "tragedy" is simply another, though one of the most dramatic, of examples of what Sartre calls "counter-finality": the unintended negative consequences at the collective level of individually "rational" decisions (cf. Elster 1985:24).

7. The logic of collective action is ambiguous on "small" aggregates. Villages may have more potential for collective action than much smaller aggregates in industrial society because of a) the greater continuity of relationships over time; b) the greater information about the character of other individuals; c) the multidimensionality of relationships, such that "side-payments" and sanctions can be managed in spheres other than that to which collective action directly applies.

8. There is a small puzzle here, which we may note in passing: why do villages seem capable throughout India (and in much of the world) of collective action in cases where there are arguably no material benefits involved? That is, collective religious observances are organized even in villages which fail to act collectively for production bonuses. A materialist

explanation can be conjured, but it is clearly an act of conjuring: local belief systems hold that appeasing or pleasing some deity is likely to have greater material benefits than rationally using water.

9. Scattered exceptions may be found in the works of Marx, for example in the discussion of agriculture in Capital Vol I. Raghunandan (1987:546) points to exceptions in Engels' "Dialectics of Nature." Nevertheless, the weight of the Marxian tradition is clearly as indicated in the text.

10. Tellingly, they mention "invasion of weeds" as an indicator of land degradation (1987:5). To be fair, it is possible to describe a biological category congruent with "weed" (invasive, opportunistic, wide tolerance for conditions, etc.) but here I think they mean, as we usually do, a plant which is growing where a human being does not want it to grow.

11. The moral economy tradition is something of a totem in peasant studies. It opposes "moral" not to immoral but to amoral; that is, there exist social formations in which economic relations and outcomes are judged not by canons of markets, but by socially constructed notions of right and wrong, acceptable, unacceptable and optimal. The roots in Polanyi (1944) are clear; the term is usually associated with James Scott's early work. For the briefest possible summary, and a comparison to a leading critic's theoretical alternative, see Herring (1980).

12. There is nothing in logic which prevents privatization from meaning devolution to local corporate bodies rather than individuals; as Bromley and Chapagain (1984: 870) note, "the matter of private control over resources refers to the ability to exclude others, not to how many individuals share in the decision making by those not excluded." That extremely large and complex social organizations such as business corporations should be considered individual actors in theory and law whereas villages are a priori held to be incapable of rational action does seem bizarre.

13. Kautilya argues in the Artha Sastra that "the means of ensuring the pursuit of philosophy, the three Vedas and economics is the Rod [wielded by the King]; its administration constitutes the science of politics...On it is dependent the orderly maintenance of worldly life...If not used, it gives rise to the law of the fishes. For the stronger swallows the weak in the absence of the wielder of the Rod." (From Robinson 1988: preface). The doctrine of matsya-nyaya, which Robinson calls the "law of the fishes," implies that in a state of nature, anarchy prevails, providing the justification for a strong and interventionist state. So strongly is the state associated with "the Rod" (danda) that Kautilya calls the science of politics, or kingship, dandaniti (a useful corrective, more rooted in realism to the more usual rajniti).

14. In talking with lots of state managers on the reasons for success and failure in state control in preserving nature, I found a number of discrete, though sometimes co-mingling, themes. First there are the Incompetent Villagers. Robert Wade is certainly right in arguing that much has been assumed about the incapacity of Indian villages for collective action but

very little has been established empirically. Secondly, there are the Lamentably Desperate Villagers. Being against poverty is politically correct in India. In this view, congruent with the Maslovian hierarchy of needs and post-industrial society world view, pervasive destitution drives villagers to if not justifiable, at least understandable, acts of ecocide. Blaikie and Brookfield (1987:48) make the case more generically: "... poverty is the basic cause of poor management and the consequence of poor management is deepening poverty." In both scenarios, villagers need control from the Centre.

15. Forests were added to the concurrent list by the 42nd amendment to the Constitution in 1976 (India 1980: Entry 17A).

16. To give but one example, an appendix to the Tiwari Report which recommended the creation of a separate ministry of environment commented, for example, that "State governments are not interested in preserving wildlife (India 1980:91)." Conflicts on forest policy are discussed below.

17. (Financial Express 2-5-93). Variable commitment at the state level is important to the functioning of the WHC and CITES and ITTA, though not so much to compliance with Montreal, since concentration of production of ODS in a relatively few firms can be more easily controlled from the Centre.

18. Patwari, etc. For discussion, see Herring 1983: Ch 2.

19. Since 1980, the import of wild animals as pets is subject to the provisions of CITES. Regulated by the Ministry of Commerce's Public Notice no. 27-ITC (PN)/80. The one exception to the very strict trade prohibitions is shed anders and molted feathers.

20. Only six species of highly endangered flora are protected by the Wildlife (Protection) Act; very little is known about threats to specific species. TRAFFIC-India is researching endangered flora, but the task is daunting. It was a TRAFFIC study of trade in agarwood which facilitated CITES listing of Aquilaria malaccensis. Agar, worth Rs 3000 kg, is traded for incense, perfume, medicines, writing material, occult/ceremonial purposes, timber, fumigation and many other uses (Chakrabarty, Kumar, Menon, 1994; Chengappa 1993). Taxus baccata, from which taxol is made, Clochicum luteum, a medicinal plant, Paphio paedilium orchids and Gloreosa superba for allopathic drugs are among other illegal exports. WWF-India has produced a small handbook (WWF-I 1994) for enforcement personnel, and a more extensive looseleaf reference guide with indigenous names of controlled species in local languages as well as Hindi and English. Shekar Singh (1993: 14) argues that liberalization of export policy, "reportedly necessitated by the World Bank," have greatly increased the danger to plants, sandalwood forests and coastal areas among other resources.

21. When asked in parliament, the Finance Minister replied the obvious: "Smuggling being a clandestine activity, it is not feasible to estimate the value of snake skin smuggled out to the country" LSO 3764 19-8-87. The best data comes from TRAFFIC-India. One does not know whether increasingly large seizures indicate increased activity or better enforcement, but

seizures are increasing. In the first week of November 1994 the Indian government announced the largest ever seizure of skins and hides (in Kashmir), totalling over one-thousand. Included was the largest tiger skin ever seized, 14 feet from nose to tail. A listing that a TRAFFIC researcher says may represent 10% of the seizures in the country in 1993-94 covers 303 instances: Seizures in India (TRAFFIC-India, memo, 1994).

22. Though the issue was intensively discussed at the International Tiger Symposium in Delhi in 1993, no specific guidelines to reduce trade from India into China, including use of CITES, could be formulated. China, though invited, chose not to attend the Global Tiger Forum in India in 1994. The New York Times of November 20, 1994, reported new agreements of Asian nations to curb tiger trade at the recent meeting of CITES parties in Florida. A bilateral agreement between India and China is too new to be assessed.

23. See Traffic Bulletin 13:1 May/June 1993. On the cases, PAT 5-24-93; Panjwani 1994:26-42. Some residual problems with stocks remain. As late as February 1995, a public sector corporation was still petitioning the MOEF for special dispensation to sell stocks of reptile skins, pleading financial hardship (overheard by Ron Herring in the Ministry).

24. Customs, coast guard, navy, revenue intelligence, state wildlife officials, police, Border Security Force, Indo-Tibetan Police, Railway Protection Force, Department of Revenue Intelligence, Commerce Intelligence, Controller of Import and Export, and others have come together with NGOs and activist individuals. The multiplicity of agencies renders coordination and training more difficult and complicates data collection: offenders are not reported to any central monitoring center, but up through different administrative hierarchies.

25. Elephant tusks worth Rs 4000-6000 a kilo in India - or 200 days of employment for a landless laborer — are sold in Bangkok for \$60,000 each. Leopard skins sell for \$10,000 each. Tiger bones costing \$90 kg in Delhi bring \$250 kg in China and East Asia. Tiger skins sell for \$15,000, a single bowl of tiger penis soup, \$320. Reports of payments to local people to kill tigers range from a the equivalent of \$5 to \$300 per animal; rural wages in tiger areas are less than \$1 per day. Between 1988 and 1992 tiger bones increased in price from \$150 kg to more than \$250 kg in 1992. Rhino horn which was worth in the 1970s \$3000 kg was up to \$10,000 kg by 1985 and \$17,500 in 1993. There is a saying along the Nepal border areas that you take a tiger to Nepal and come back on a motorbike. Price data is only representative, culled from a number of press accounts and TRAFFIC-India, CAT News, etc.

26. For example, LSO 1763: March 6, 1987: The Finance Minister said in a typical response: "Import of timber has been allowed with a view to conserve the country's depleting forest resources," on Open General License at a concessional rate of duty of 10%. Significant imports of timber (largely from Southeast Asia) began in the early-1980s; in 1982-83, the value was Rs 308.47 crores; in 1983-84, Rs 162.07 crores; in 1984-85, Rs 293.70 crores (data from Directorate General of Commercial Intelligence and Statistics). Though we do not have confidence in the data, imports for 1989-91 were somewhat higher, averaging Rs 411.95 crores annually, less than US \$137 million.

27. The Government of India has had little to do with the ITTO partly because the nodal authority was the Ministry of Commerce, which took no interest. Negligible impact on policy in India does not mean that ITTA has no impact at the normative level globally. A former member of the Planning Commission told us a remarkable story of an official in London calling him to ask about a particular individual log shipped from India. Such concern would have been inconceivable a few decades ago.

28. One hears unconfirmed reports of smuggling, primarily of sandalwood. Debra Calister, in Illegal Tropical Timber Trade: Asia-Pacific reports that "species banned from export from India in an unworked state are alleged to be available in retail trade in the United Kingdom..." Some exceptions are made for reasons of foreign policy, for example teak to the Gulf states for "luxury consumption," as the official who had to sanction the export said. The value-added concession is legitimated as a spur to "handicrafts" which are produced by "weaker sectors." By chance, a timber exporter shared our interview space with the official in charge of certifying exceptions. He explained to us (when the official stepped out) that the loophole was used by timber contractors to reduce sandalwood logs to dust and chips, claim these as by-products of handicraft production, then export same for extraction of oil. As the regulatory regime has been tightened, timber-exporting firms have virtually disappeared; the last active exporter spends much time in Delhi lobbying for exemptions.

29. The Ministry believes from its surveys that 385,000 square km. of this total represent "dense forest," 239,930 "open forest" and 59,640 "scrub." MOEF AR 1992-93: 35. As to ITTA classification, officials are puzzled that oaks and pines growing in India are more "tropical" than those growing in England or the United States. It was believed through the 1980s that forests were being destroyed at the rate of 0.3% per annum. Though recent satellite images show a small increase in forest cover, this could reflect a change in imaging techniques. See India 1991. Much of the dispute about extent of forest cover is biologically meaningless; threats to biodiversity are masked as monoculture biomass replaces endemic forest systems.

30. Social forestry schemes in the 6th Five Year Plan (1980-85) covered 4.65 million hectares; the 7th plan, 1985-90, planned for 9 million ha, and covered 7.14 million (MOEF data). On issues of forest policy generally, see Singh 1986: Ch 4 p 27ff.

31. In 1994, the Government proposed the "Conservation of Forests and Natural Ecosystems Bill," which became known to NGOs through leaks from the Ministry. This bill, meant to replace the 1927 colonial Forest Act, is widely perceived to represent a strengthening of the centralized command-and-control logic. NGO resistance prevented the Bill from going immediately to Parliament; an alternative NGO Bill is being circulated and discussed. For commentaries by leading activists and scholars, see Hiremath, Kanwalli, and Kulkarni 1994; the Government's draft bill is reproduced, pp 91-222; see also, Guha 1994; TOI 1-2-1995.

32. The WHC also lists "cultural" sites of international significance, but here we are concerned only with "natural" sites. There are now 75 National Parks, 421 Wildlife Sanctuaries and 19 Tiger Reserves in India. The aggregate protected area is similar to that of

the United States, just under 5%, one-fifth that of Costa Rica, but more than many nations. Much "protection" is tenuous or bogus. Current research seeks to identify "biodiversity hotspots" for special protection given limited resources and intense competition for space.

33. "Mafia" designation by Sanjay Deb Roy (1994:2), the lead conservation official in the area. Also, WWF-I 1992; Telegraph (Calcutta) 18-12-89; Assam Tribune 21-2-93; Statesman (Calcutta) 21-2-93; Economic Times 11-6-90; India Today 31-8-92; STM 18-10-90; TOI 12-08-89; PAT 22-01-90; AST 11-01-93; LED 9-5-89 and interviews in the MOEF and wildlife community.

34. Accounts in TOI 30-11-1990; AST 1-4-90; TEL 12-12-92; NEO 6-4-93; DH 6-8-89; NWT 27-5-91 and interviews. The Central Government's position was explained in 1991 RSO* 394 May 1991: a centrally sponsored scheme for rhino protection, with Rs 5 crores in the 7th Plan, for more protection staff, vehicles, arms and wireless sets in addition to the Centrally Sponsored Scheme for the Control of Poaching and Illegal Trade in Wildlife. These schemes allow 50% cost sharing for the State government of Assam.

35. For example, IPS 25-01-90. Wildlife officials who work in the area are convinced that press reports overstate the killings, but emphasize that recurrent deaths of people and livestock from wildlife are a large and intractable problem.

36. See BNHS 1988; Madsen 1995. Pioneer (11-2-95) carried a front-page story on the threatened delisting, citing WHC Secretariat concern that the endangered Siberian cranes no longer visit Bharatpur. The Ministry had been in contact with the BNHS and WWF-I to formulate a response.

37. For example, IPS 25-01-90. Wildlife officials who work in the area are convinced that press reports overstate the killings, but emphasize that recurrent deaths of people and livestock from wildlife are a large and intractable problem.

38. Police in Kamataka and Tamilnadu have arrested 97 people and killed 20 in "encounters" n 31-7-93: 24-26. This section is based on press reports, e.g. TOI 30-7-93; HT 5-8-93; 14-8-93 and interviews with officials in the Ministry of Environment and Forests.

39. Press reports (e.g. TOI 16-7-90) periodically mention the well-known phenomenon of drug production in protected areas. Cannabis sativa (marijuana) grows naturally in Corbett and Dudwa Tiger Reserves and is both cultivated and harvested wild for smuggling. When this issue was raised in Parliament (LSO 2896 27-8-90), the government responded with a Central scheme to assist the State in eradication. Tractors have been sent into protected areas for eradication. Drug smugglers also poach animals.

40. Infiltrators for TRAFFIC-India who are British nationals got only so far in investigating smuggling in Nepal as their accents were not Italian or Slavic. See Van Gruisen and Sinclair 1992.

41. For example, the ILO's Convention on Indigenous and Tribal Peoples in Independent Countries (ILO 169) of 1989 and debates around the UN Commission on Human Rights' Draft Declaration on the Rights of Indigenous Peoples. For discussion, see Madsen 1995: 4-7)

42. For an expanded treatment, and discussion of conference papers pointing in this direction, see Sinha and Herring, "Common Property, Collective Action and Ecology," Economic and Political Weekly July 1993.

43. For but one example, Raghunandan (1987:545) notes the case of a ninth-century Pallava king who was given the honorific Kaduvetti (one who clears forests) for presiding over the rapid conversion of forests to cultivated land. For similar observations based on pre-colonial Maratha records, see Guha 1995. Eaton's (1991; 1993) "saint entrepreneurs" were saintly precisely because their entrepreneurship destroyed forests to make fields. See also Madsen 1995: 11-17 for a critique of the Gadgil and Guha (1992) position.

44. On the effect of colonial law in this regard, Gadgil and Guha 1992: 134 et passim. For a summary of papers connecting state intervention to common-property institution decline, Sinha and Herring 1993.