Endangered Species UPDATE

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THE UNIVERSITY OF MICHIGAN
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In this Issue:

Nongame Checkoffs: Only the Beginning

The Role of Lead in Condor Mortality

Final Regulations on Turtle Excluder Devices

The Endangered Palila of Hawaii

Nongame Checkoffs: Only The Beginning

By Sara Vickerman

Exactly a decade has passed since the Colorado Legislature approved the first nongame income tax checkoff, enabling state taxpayers to contribute portions of their refunds to the wildlife department for the conservation of non-hunted species. At the time it seemed like a brilliant idea, and it spread like wildfire. Oregon jumped on the bandwagon in 1979. Others followed and now thirty-three states have established income tax checkoffs for wildlife programs. Altogether they generate about $9,000,000 annually. New York's "Return a Gift to Wildlife" raises the most money, about $1,690,000 in 1986. The smallest sum is donated by taxpayers in Arkansas, whose contributions were approximately $27,000 in 1986.

Although tax checkoff income still constitutes the greatest single source of funding for state nongame wildlife programs, many wildlife conservation advocates now realize that the bloom is off the rose, and that no state will be able to finance efforts to prevent the decline of native species with checkoff revenue alone.

Although tax checkoff income still constitutes the greatest single source of funding for state nongame wildlife programs, many wildlife conservation advocates now realize that the bloom is off the rose, and that no state will be able to finance efforts to prevent the decline of native species with checkoff revenue alone. The money generated through these and other voluntary means is simply inadequate. Furthermore, the checkoff revenue is declining in about half of the states which depend on it.

In 1986 Defenders of Wildlife began conducting an annual survey of nongame and endangered species programs in the fifty states to find a long-term solution to the wildlife funding dilemma. Information is collected through written questionnaires and telephone interviews with the nongame program directors, other resource agency personnel, and representatives from private conservation groups. The fish and wildlife agency response rate was 100% in 1986, and the 1987 data is being compiled now for release in 1988. Most of the information in this report was obtained through this process.

The Income Tax Checkoff

The income tax checkoff does offer some advantages. Perhaps the strongest argument in support of this funding mechanism is that any voluntary scheme forces agencies to be accountable to their contributors if they expect the donations to continue. However, this argument assumes that recipient agencies want the funds and support the programs which are financed with checkoff dollars. Unfortunately, some state fish and wildlife agencies are less than enthusiastic about nongame conservation and are still preoccupied with the administration of consumptive use programs and single-species management. Others support the idea in theory but lack the funds and expertise to package nongame programs and sell them effectively to the public. Most early promotional efforts focused on a few high profile species like the bald eagle and the peregrine falcon and placed a heavy emphasis on reintroductions and other activities which generate media attention. In some cases, the activities which fish and wildlife agencies believe are most likely to capture the imagination of the public and reporters may not be the highest priority wildlife conservation projects.

The combination of insufficient funding and inadequate promotion has hampered the expansion of programs to conserve all indigenous species, so that 80 percent of the nation's wildlife still receives less than 10 percent of the attention and funding. This situation is exacerbated because many nongame program managers are locked into "thinking small." Until the priorities of top fish and wildlife managers change, nongame conservation will remain a token effort.

There is considerable variation in the administration of nongame checkoff programs from one state to another. For example, California's checkoff generates nearly a million dollars a year and is earmarked only for endangered species. New York's "Return a Gift to Wildlife" checkoff is the only one which is not dedicated to any wildlife in particular. Although many taxpayers assume that the funds will be used for nongame projects, the Department of Conservation has the discretion to spend some of the money on game-oriented programs and has chosen to do so, thereby incurring the wrath of nongame advocates. The situation has deteriorated to the point that some of the more outspoken animal protection organizations have actively encouraged their members not to donate to the program. In Pennsylvania, tax checkoff funds are divided among three natural resource agencies: fish, game, and environmental resources. Although this distribution makes sense, it reduces the share of the total fund available to each of the three agencies. Nongame projects have received only about $100,000 annually from the fund.

The most serious problem with the checkoff funding is the proliferation additional boxes on tax forms to fund a long list of worthy causes. California now has five checkoffs and will soon have eight. The most common are boxes for political parties, abused children, arts programs, the Olympics, and recently, Alzheimer's disease. Illinois and Louisiana now have six checkoff boxes. Over the last few years, proponents of tax reform in California have attempted to remove all checkoff boxes to simplify the state return. Although adding more donation options generates a larger total amount of money, the general tendency when new checkoffs are added is for the contributions to any one cause to decline. Nationally, contributions to nongame programs decrease 16.4 percent for each new checkoff box added. When South Carolina dropped its child abuse checkoff, nongame revenues increased by 44.9 percent.

Despite the obvious problems with the nongame checkoffs, some of them are alive and well, and generating increasing donations. According to nongame directors, who reported increases, there are two main reasons for the improvements. The first is the implementation of a professional marketing campaign. The second reason commonly cited is rewording the line on the tax form to simplify and/or expand the opportunity for a greater number of tax payers to contribute more money. Sixteen states still allow only persons receiving a refund to donate. Simply rephrasing the line on the tax form allows all taxpayers to participate.

Beyond Tax Checkoffs

Better advertising and fine-tuning the tax checkoff programs to increase contributions, although beneficial, will simply prolong the inevitable. The states must work to secure more lucrative, stable sources of funding for nongame wildlife conservation if the listing of more threatened and endangered species is to be averted. Unfortunately, formidable obstacles are present everywhere. Most people, including fish and wildlife agency personnel, legislators, and the public do not have a clear idea what a nongame program does for wildlife or for people. It is not clear how nongame programs differ from those designed to protect endangered species, or how they relate to Natural Heritage programs. Only twenty states have nongame plans, and some of the states with plans lack the funding or inclination to implement them fully. It is also difficult to define the constituency of a nongame program, although it has been attempted. It is even more difficult to extract money from nongame wildlife enthusiasts because there is no one activity in which they all participate that lends itself to collecting revenue. There is no consistent relationship between nongame conservation programs and nonconsumptive wildlife recreational programs (to the extent that they exist at all).

Incorporating new ideas into old political structures is always difficult. Although most nongame programs are administered by fish and game agencies, skepticism about the potential for them to flourish in that setting is commonly expressed, especially by ecologists and animal protectionists. Most wildlife managers believe that, ideally, all wildlife species should be managed by the same agency without regard to game/nongame designations. However, there is some reluctance on the part of wildlife managers to accept the responsibility for plants, invertebrates, and other living things not commonly considered wildlife. Effective ecosystem- oriented programs to conserve habitat are years away in states where traditional managers still believe that it is the primary responsibility of the fish and wildlife agency to provide consumptive recreation opportunities.

Several states have developed creative organizational structures which combine several ecosystem-oriented programs. For example, the Wisconsin Department of Natural Resources has a Bureau of Endangered Resources to handle nongame and endangered species conservation, the Natural Heritage data base, and acquisition of natural areas.

Fortunately, there has been consider-

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A forum for information exchange on endangered species issues

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Instructions for Authors:

The Endangered Species UPDATE welcomes articles related to species protection in a wide range of areas including but not limited to: research and management activities for endangered species, theoretical approaches to species conservation, and habitat protection and preserve design. Book reviews, editorial comments, and announcements of current events and publications are also welcome.

Readers include a broad range of professionals in both scientific and policy fields. Articles should be written in an easily understandable style for a knowledgeable audience. Manuscripts should be 7-10 double spaced typed pages. For further information please contact Kathryn Kohm at the number listed below.

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Cover:

The American bald eagle is one of many nongame species for which checkoff funds have been dedicated

able discussion about new funding strategies for nongame wildlife programs. The options can be divided into several broad categories. The first is general revenue. Several states, including Nevada and Illinois, depend heavily on direct appropriations from the legislature for nongame programs. This strategy is based on the notion that preventing the decline of wildlife is in the best interest of all citizens, as is providing clean air and water, or fire and police protection. Another general source is the 1/8 of 1 percent sales tax levied in Missouri for the Conservation Department. A third is the general obligation bond typically used for habitat acquisition. For example, California voters approved an $85 million bond in 1985 to fund a variety of land purchases. More recently about 700,000 California residents have signed petitions for a wildlife, coastal, and parks initiative. If it passes, $776 million from the state general treasury will be used to buy land. New York voters also approved a bond which includes $250 million for habitat acquisition.

A slightly different strategy is to generate money through "abuser fees" to mitigate harm to wildlife and habitat caused by certain activities. Many states now have realestate transfer taxes based on the notion that land development destroys wildlife habitat. Severance taxes on minerals, timber, sand and gravel, or other resources are another type of mitigation fee. Many other opportunities exist to establish fees or taxes on products which harm wildlife. Pesticide products can be taxed, or licence fees charged for the application of harmful products. In 1987 the Oregon Legislature considered several mitigation proposals of this sort. One would have imposed a two percent excise tax on the plastic products which are harmful to marine animals. An amended version would have established a litter tax on all packaging. The funds were to have been divided between the wildlife and state parks agencies.

A third category is the "user fee." This strategy is preferred by many traditional wildlife managers since it has been used so successfully in funding wildlife programs through the sale of hunting and fishing licenses and federal excise taxes on related equipment. The nongame equivalent is to impose taxes on bird seed, bird baths, binoculars, spotting scopes, cameras, film, camping gear, etc. Several innovative extensions of this idea include taxing pet food or nursery stock. Plants are used to attract wildlife. A pet food tax is attractive as a user and mitigation fee, since domestic animals often kill wildlife. Several states which offer exceptional wildlife viewing opportunities, Alaska and New Mexico, have explored taxes or fees aimed at tourists. Entrance fees can also be collected from people who watch wildlife on public lands in areas where it is economical to do so.

An Oregon bill proposed in 1987 would have increased the deposit on returnable beverage containers and earmarked a portion of the increase for the state's nongame program

Expending existing "user fees" on nongame programs is increasingly common. A Colorado nongame marketing survey revealed that residents prefer the use of hunting and fishing license revenue for nongame programs to any other option except voluntary contributions. At least 17 states use Pittman-Robertson and/or Dingell-Johnson funds* for nongame projects. The Wyoming Game Commission recently approved a plan to spend $3.5 million from the department's general revenues (derived mostly from sportsmen) for nongame conservation. Vermont is working on a "checkoff" or donation opportunity for persons purchasing hunting licenses. This approach may work in the short run, but does not offer a long-term solution, since consumptive use and the associated revenues derived from hunting and fishing are decreasing.

Establishing fees related to the use of vehicles has special appeal because the money comes from "users" and "abusers." Automobiles, highways, and parking lots contribute to habitat destruction; and direct vehicle mortality is a serious problem for some wildlife species such as the Florida Panther. Florida has successfully implemented a surcharge on the registration of vehicles for new residents and supplements the mandatory fee with a one dollar checkoff option on all vehicle registration renewals, raising about $1.5 million per year.

A similar set of circumstances apply to boats which cause some wildlife disturbance, contribute to the destruction of estuarine and riparian habitats, and provide transportation for fishing, hunting, and wildlife viewing. Increasing the license fees for boats and trailers, or imposing a tax on the sale of boats and boating equipment could generate significant revenue in some states.

A final category of funding options is opportunistic. This group includes cigarette,alcohol, and soft drink taxes as well as an unlimited number of sources which bear no necessary relationship to wildlife but are easy to identify and tax. An Oregon bill proposed in 1987 would have increased the deposit on returnable beverage containers and earmarked a portion of the increase for the state's nongame program. Similarly, states which have bottle deposit laws might collect the unclaimed deposit funds and earmark the money for nongame wildlife.

Concluding Observations

The greatest obstacle to the adoption of new sources at the state and federal level is the absence of sufficient pressure from the public for decision makers

(Continued on UPDATE page 4)

* These funds consist of matching grants given by the federal government to the states for the conservation and management of birds, mammals, and sport fish, and for promoting public recreation. The legal authorities for these funds are the Pittman-Robertson Act also known as the Federal Aid in Wildlife Resoration Act and the Dingell-Johnson Act known as theFederal Aid in Fish Restoration Act.

to make wildlife conservation a high priority. Several observations, based on an analysis of successful and unsuccessful efforts to establish new funding sources follow.

First, it is important to identify a large, visible constituency to support programs and new funding sources. The most obvious group is the growing number of Americans who enjoy viewing and photographing wildlife in their natural habitats. Surveys conducted at the state and national level all point to an increase in the number of people who participate in noncomsumptive recreation. Surveys have also demonstrated that a majority of people support the use of public funds to protect wildlife. However, the goals of the nongame program need to be clarified so that they are easily grasped by the public. They should include habitat acquisition, the development of viewing areas (with boardwalks, trails, and blinds), and public information activities in addition to research and status survey work which is important but invisible.

The groups which have been successful in securing new money have formed broad coalitions in support of funding schemes. These include the Missouri sales tax, the "Reinvest in Minnesota" program, and acquisition bonds in Illinois, California, New York, and Maine. The advocates of wildlife, parks, rivers, coastal areas, nature preserves, greenways, wilderness, and other open spaces are natural allies who often find themselves scrapping over limited funds rather than uniting in support of a more comprehensive program. Substantial new funding through bonds, taxes, and other sources can be divided between several agencies with similar interests. The multi-agency approach also increases the accountability of the separate agencies since they can be forced, in order to obtain a portion of the money, to meet a higher standard than they might if the money were automatically transferred to a specific department. For example, California's Wildlife Conservation Board disperses funds to several state agencies and local jurisdictions for habitat acquisition and improvement. However core program funding from a general or dedicated source should be appropriated annually for staff and expenses to facilitate planning and continuity from one year to the next. Only a handful of states have secured adequate funding for a basic nongame program: Illinois, using general fund money; Florida, with a new resident vehicle registration surcharge; Missouri, with the sales tax revenue; and Utah, with a variety of sources.

A few additional words of advice are offered for those seeking new revenue for nongame wildlife conservation. "User fees" may not generate sufficient revenue in sparsely populated states unless the fees or tax rates are unreasonable high. Establishing new fees or taxes which require setting up separate administrative systems is more difficult and less efficient than raising existing fees. Targeting one industry or group to pay for wildlife conservation, which has broad public benefits, will elicit protests about discrimination. A mixture of "user," "abuser," and general sources may be easier to sell. Finally, it is important to generate credible data on revenue sources, the level of public interest in wildlife conservation, and to document the willingness of people to pay before introducing legislation.

Publication of a complete copy of the report on state nongame and endangered species programs, upon which this article was based, is scheduled for Spring 1988. It will contain program organization and budget data for state nongame and endangered species programs in 1986 and 1987 along with more detailed information about funding strategies. If you would like to receive a copy, contact:

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Book Review

Technologies to Maintain Biological Diversity *Office of Technology Assessment*

Over the past several years, growing concern over the accelerating loss of biological diversity in the U.S. and throughout the world prompted several congressional committees representing very different jurisdictions to request that the Office of Technology Assessment (OTA) further investigate the matter. More specifically they asked the OTA to clarify the issues and problems raised by the loss of biological diversity and set forth a range of policy options available to Congress. The resulting report, *Technologies to Maintain Biological Diversity*, is important for the information which it contains as well as its signal of the emergence of biological diversity as a major public policy issue.

Published in May,1987, the 334 page report provides an excellent overview of some of the complex issues related to maintaining biological diversity. To produce the final document, OTA assembled a group of biological, physical, and social scientists to provide background papers and to serve on review and advisory panels. The report is written for non-scientists (i.e. members of Congress), and like any overview, it covers a broad range of issues rather than exploring any one in depth. Nonetheless, it is well-researched and presents up-to-date information from many different fields.

As the title suggests, the report reviews a variety of interventions to maintain biological diversity. Four of the report's eleven chapters deal with *in situ* and *ex situ* methods for preserving diversity. These include but are not limited to: design and management of protected areas, ecosystem restoration, selective breeding, cryopreservation, and germplasm storage. The report, however, is more than a compendium of technical options. Other chapters deal with the importance and status of biological diversity, the institutional environment for maintaining biological diversity on both a national and global scale, and the impact of development assistance on biological diversity in developing countries.

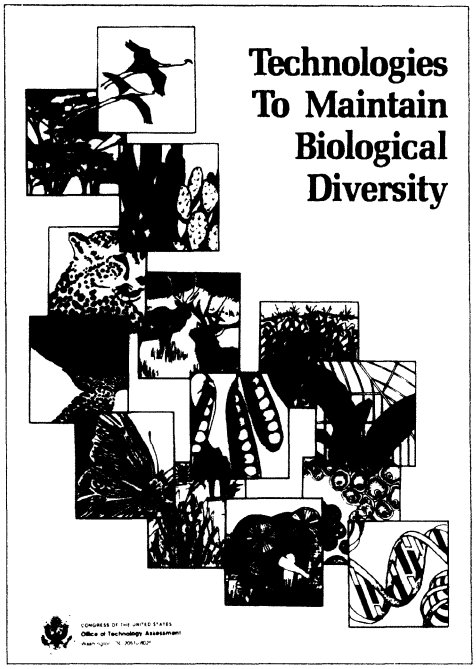
Indeed, the report's authors are to be commended for their broad approach. Recognizing the complex interplay of social and economic factors that threaten diversity, they write: "Most losses of diversity are unintended consequences of human activity . . . maintaining biological diversity will depend on more than applying technologies."

The first chapter (which is also available as a separate publication #7) provides a particularly interesting overview of the issues involved in biological diversity protection. Major policy issues and possible Congressional responses are discussed. One of the report's findings is that current federal policy relating to the maintenance of natural diversity is piecemeal. Existing statutes and programs address only parts of the problem. The Endangered Species Act, for example, focuses on listed species, ignoring populations and species that do not meet the criteria for listing under the Act. There is no federal law declaring the maintenance of biological diversity to be a national goal. The authors suggest three options for Congress: 1) enact a National Biological Diversity Act, 2) develop a national conservation strategy, or 3) amend existing environmental legislation to include the maintenance of diversity as an explicit goal.

Another message of the report is that maintaining biological diversity both at home and in other countries is in the interest of the United States. The authors argue that because biological diversity benefits so many people in the U.S., albeit in different ways and at different scales, the seemingly fragmented "constituency" for diversity protection is in reality enormous.

Interesting side bars and charts are scattered throughout the report. Some of the topics summarized graphically include: "the importance of microbial diversity," federal laws relating to biological diversity maintenance, and "endangered African cattle breeds."

Many readers will be interested in reading the report's background papers which cover selected topics in far greater detail. In all there are 48 papers compiled in six separate volumes relating to different areas of interest: Values, Managed Systems (Plants), Managed Systems (Animals), Natural Ecosystems (U.S.), Natural Ecosystems (International), and Grassroots Organizations and Issues.



Kevin Bixby

Technologies to Maintain Biological Diversity can be obtained for $15 from the U.S. Government Printing Office, Washington D.C. 20402, (202) 783-3238. Each of the six volumes of commissioned papers are also available through this office.

The Conservation of Raptors: A Status Report

by Kathy Rehm and Bruce Wilcox

Birds of prey have long been considered symbols of wilderness and open space. Because of their large home ranges and high trophic positions, they are threatened by widespread disturbance, and now serve as indicators of environmental health - "bellwethers" of pollution, disturbance, and destruction. The survival of wild raptor populations constitutes a measure of our success in protecting the natural environment.

Raptor management and conservation has made great progress in the last few decades. Only one western species, the California condor, has disappeared from the wild. Others have responded well to conservation efforts. The peregrine falcon, which underwent a widespread population decline in the 1950's after organochloride pesticides caused thin-shelled eggs, now appears to be well on the road to recovery (Cade 1985).

Despite the apparent success of conservation efforts, recent data indicate that widespread habitat disturbance may just now be catching up with raptor populations. Fifteen of the 257 bird species listed in the most recent edition of the International Center for Bird Conservation red data book are raptors. Brown (1976) lists 68 falconiform species as probably threatened; in most of these cases, little is known except that the habitats supporting them are being rapidly destroyed.

The dependence of many raptor species on tropical forests is of particular concern. Forty percent of the world's 287 falconiform species occur in tropical moist forests (Thiollay 1985). Such primary forest is being completely cleared or modified at a rate that will lead to the loss of all but scattered remnants of forest in most regions in one or two decades.

Recent declines of Swainson's hawk and the ferruginous hawk indicate the severity of habitat fragmentation. Both specialize on native grasslands, which are the most highly reduced and degraded natural ecosystems in western America. Because these species are restricted to breeding in western North American plains, cumulative impacts threaten their long-term viability. The future of the Swainson's hawk is further complicated by the migration of nearly the entire population to the threatened tropical savannahs of South America.

Considering that habitat reduction may be the single most important factor in the endangerment and extinction of species, nature reserves can be used successfully in the conservation of many species. However, reserves are of relatively limited value in raptor conservation since few are large enough to support an entire population of any particular species. Only with the addition of substantial surrounding buffer zones can most reserves provide the requirements for a viable raptor population (see Temple 1987).

Because of raptor's dispersal capabilities, they tend to have large ranges. Their endangerment or extinction is often a consequence of habitat disturbance on a larger, continental scale, which has become common only in the past few decades.

Protection of a viable population includes more than mitigation of habitat destruction. The persistence of a species depends on certain population biological factors different from those typically addressed by species and habitat managers. We must have some idea of the structure and genetic and demographic parameters of a population to predict its long-term probability of survival. The best illustration of this is the case of the northern spotted owl. The long-term survival of this subspecies is in doubt despite numbers in the thousands and the virtual absence of more common threats to the survival and reproduction of individual birds.

The dependence of the owl on old-growth coniferous forest for nesting, roosting, and foraging became an issue in the 1970's when the conversion of nearly all such habitat by the timber industry became imminent. The historical details of this case illustrate the coevolution of conservation biology and policy (Marcot et al. 1987), as well as the development of applications of theory to the question of long-term persistence of populations. Four categories of analysis have been applied to the northern spotted owl and are applicable to the question of long-term survival for raptors generally: demographics, genetics, patch dynamics, and environmental change. While these are interactive, they must also be examined individually. If a species' long-term survival is shown to be in doubt on the basis of any single aspect, then the question of interactive or "higher order" effects is moot.

Their large home ranges, migratory behavior, and high trophic rank make raptors particularly vulnerable to widespread habitat disturbance. In view of these aspects, application of the population biology of these birds is likely the only key to their protection.

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Marcot, Bruce G., Dean Carrier, and Richard Holthausen, 1987, The northern spotted owl (*Strix occidentalis caurina*), in *Managing Viable Populations*, B. A. Wilcox, Peter F. Brussard, and Bruce G. Marcot (eds.), Center for Conservation Biology, Stanford University.

Temple, Stanley A., 1987, Buffer zones and preserves for raptors, paper presented at Western Raptor Management Symposium and Workshop, October 26-28, Boise, Idaho.

Thiollay, J. M., 1985, Falconiforms of tropical rainforests: a review, in *Conservation Studies on Raptors*, I. Newton and R. D. Chancellor (eds.), International Council for Bird Preservation Tech. Pubn. No. 5.

Bulletin Board

Conference on Management of Rare Species and Significant Habitats

State University of New York in Syracuse in conjunction with the Natural Areas Association, the New York State Museum and other organizations throughout New York State are sponsoring a conference entitled Ecosystem Management - Rare Species and Significant Habitats June 6-9, 1988.The conference, to be held in Syracuse, New York, is designed to provide a forum at which botanists, zoologists, ecologists, and natural resource managers can share their research findings, experiences, and viewpoints. Conference topics include inventory and monitoring techniques, data analysis and management, public involvement and education, the legal aspects of ecosystem management, and the role of arboreta, botanical gardens, zoos, and the horticulture industry. Presented papers and poster abstracts will be published by the New York State Museum. For more information, contact College of Environmental Science and Forestry, State University of New York, Syracuse, NY 13210.

Publication on Rare & Endangered Plants

The California Native Plant Society has published the proceeding of their 1986 California conference, the largest conference ever held in North America to address rare and endangered plant conservation issues. Edited by Thomas Elias, *Conservation and Management of Rare and Endangered Plants* contains 640 pages including the botanical papers presented at the Sacramento conference. To obtain a copy ($45 - cloth or $24.95 - soft), write to the California Native Plant Society, 909 12th Street, Suite 116, Sacramento, CA 95814.

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