

THE FEDERAL GOVERNMENT'S ROLE IN CRAFTS

The Arts Agencies

Federal Government actions touch on crafts in many ways. In certain cases, these actions and their effects have not been consistent or kindly. Involvement with Native American and rural communities sometimes has jeopardized local traditions in order to promote local development and "modernization."

One piece of legislation was especially important in seeking to make the role of the Federal Government more benign: the 1976 American Folklife Preservation Act (Public Law 94-201). This law created the American Folklife Center in the Library of Congress and supplemented earlier laws that enabled executive branch agencies to support the crafts. These include Public Law 74-355, passed in 1935, which created the Indian Arts and Crafts Board

within the Department of the Interior; the National Historic Preservation Act of 1966; and the legislation that established the Smithsonian Institution and, later, the National Endowment for the Arts.

These programs, along with economic development efforts of the Department of Agriculture and the avocational craft programs of the Department of Defense and the USDA Extension Service, are the most significant Federal craft activities. Additional related programs are scattered throughout the Government. The best summary of these activities is provided by Coe (1977). Recent agency reorganizations and severe program and budget cuts, however, have made significant parts of this information obsolete. Table 1 provides a summary of the types of agencies involved in supporting American folkarts and crafts.

Table 1.—Federal Agencies With Craft Programs

Agency	Role(s)				
	Research ^a	Education ^b	Development ^c	Preservation ^d	Demonstrations ^e
<i>U.S. Departments:</i>					
Agriculture	X	—	—	—	X
Commerce	—	—	X	—	—
Defense	—	X	—	—	—
Housing and Urban Development	—	—	X	—	—
Interior	X	X	X	X	X
Labor	—	X	—	—	—
State/AID	X	·	X	X	—
<i>Other Federal agencies:</i>					
East-West Center	X	X	—	—	—
Federal Information Center	X	—	—	—	—
National Archives	X	—	—	X	—
Historic Documents Program	—	—	—	X	—
National Endowment of the Arts	X	X	—	X	—
National Endowment of the Humanities	X	X	—	X	—
National Science Foundation	X	—	—	—	—
Smithsonian Institution	X	X	—	X	X
Peace Corps	—	—	X	—	—
Library of Congress	X	—	—	X	X
Historic Preservation Trust	—	X	—	X	—
Appalachian Regional Commission	—	—	X	—	—

^aIncludes both direct grants to individuals and institutions as well as providing general support services.

^bIncludes support for institutions such as schools, art institutes, and museums, and grants to students

^cIncludes job training programs and assistance to cooperatives and individuals

^dIncludes collecting, preserving, and exhibiting all types of crafts

^eInclude traveling and permanent exhibits as well as interpretive programs at national parks, refuges, monuments, forests, and other public lands

MAJOR SOURCE Linda C Coe, *Folklife and the Federal Government* (Washington, D C American Folklife Center, Library of Congress, 1977)

The Natural Resource Agencies

The protection and management of wildlife and natural areas is relatively centralized. The Department of the Interior, for example, is the major agency responsible for monitoring endangered species, controlling domestic traffic in regulated wildlife products, and protecting resources in national parks and monuments. Both the Bureau of Land Management, within Interior, and the Forest Service, within the Department of Agriculture, are important managers of public lands. The annual Conservation Directory (National Wildlife Federation, 1982) summarizes Federal natural resource roles (table z).

Public Policy

Public policies have important effects on craftworkers. These vary from policies that eliminate availability of certain craft supplies to others that relocate people from newly designated public lands. From 1924 to 1936, for example, the Department of the Interior displaced

a large craft community with the creation of Shenandoah National Park (Martin-Perdue, 1983); similar events occurred in the early days of the Tennessee Valley Authority. Some of these craftworkers received Federal assistance to continue, publicize, and sell their work.

Agency data-collection programs have the potential for supplying important information on the craft use of wildlife, but this potential is largely unrealized. Permits are not required for most small-scale harvesting for "noncommercial" purposes in national forests (Bombeck, 1983). Therefore, little documentation exists for craft uses of these public resources.

Some of the goals of the arts and resource agencies are not compatible with each other. Resource agencies generally have paid little attention to craft supplies. For example, an arts agency may encourage use of traditional grasses by basketmakers while a resource agency manages public lands to discourage grass growth (Toelken, 1983). Puerto Rico has just begun a program to replant important wood-working trees, but it has little support from foresters (Murray, 1983).

Table 2.—Federal Agencies With Resource Protection Roles

Agency	Role(s)				
	Research ^a	Education ^b	Management ^c	Policy ^d	Enforcement ^e
<i>U.S. Departments:</i>					
Agriculture	X	X	X	X	X
Commerce	X	X	X	X	X
Interior	X	X	X	X	X
Justice	—	—	—	—	X
Labor	X	X	—	—	—
State	—	—	X	—	—
Transportation	—	—	—	—	X
Treasury	—	—	—	—	X
<i>Other agencies:</i>					
Council on Environmental Quality	X	—	—	—	—
Environmental Protection Agency	X	X	X	X	X
Tennessee Valley Authority	X	X	X	—	—
National Science Foundation	X	—	—	—	—
International Convention Advisory Council . . .	X	—	—	—	—

^aIncludes internal programs and external grants.

^bIncludes direct work with farmers and visitors, job training programs, and Preparation of materials.

^cIncludes responsibility for day-to-day operation of public lands and waters as well as handling of wildlife populations and preparation of management plans for private owners.

^dIncludes determining U.S. priorities for resource protection.

^eIncludes regulating commerce in potentially harmful plants and animals and those organisms that are protected by domestic and international agreements.

MAJOR SOURCE: *Conservation Directory 1982*, National Wildlife Federation, Washington, D. C., 27th ed., 1982.

Making the Connection: A Pioneering Study in the New Jersey Pine Barrens

The American Folklife Center of the Library of Congress, the U.S. Department of the Interior, and several New Jersey State agencies are cooperating in a project that will provide one of the first close looks at how traditional technology, natural resources, and culture interact. This project will document activities such as crafts, folk music, seasonal festivals, and architecture. Also, it will examine traditional ways of naming and using plants and animals.

The study is being done in the new Pinelands National Reserve, a million acres of land with a unique public lands designation and governing body. The importance of this work, though, extends beyond New Jersey. It may, for example, show how arts agencies and resource agencies can cooperate with local citizens to conserve natural resources, historic artifacts, and the living cultural traditions in a region,

The pine barrens are rich in crafts such as boatbuilding and decoy carving, and local people have developed complex management technologies for conserving their raw materials. The Barnegat Bay Sneakboxes (duckboats), for example, are built of Atlantic white cedar that, unlike plywood, can be shaped in compound curves. Cedar-cutting and stand management are often family operations that rely on generations of forestry experiments. Local biologists admit that the cutter's knowledge is accurate and precise. Folklorists in the area also note the esthetic importance of management; cedar-cutters speak of "cedar music)" created by trees creaking in the wind.

The Pinelands National Reserve study will preserve this type of information in books, photographs, and an archive. Natural resource agencies will have access to local expertise on wildlife and timber; folklorists will gain information on technology and biology. This is a new synthesis. It may promote the sustainable use of resources in crafts and provide a better understanding of how people create meaning in their lives by applying technology to their natural surroundings.

SOURCE: Mary Hufford, Folklife Center, Library of Congress, personal communication, Dec. 12, 1983; Library of Congress, "Library of Congress American Folklife Center Launches Field Survey of Pinelands National Reserve in New Jersey," *News From the Library of Congress*, PR 83-81, Sept. 9, 1983; and Boris Weintroub, "Cranberry Bogs, Tea in a Glass: Sense of Place in Jersey Pines," *National Geographic Society News Feature*, Nov. 30, 1983.

TECHNOLOGY AND THE CRAFTS PROCESS

Craftwork can be divided into several processes once the initial design has been developed. These include: obtaining and preparing the raw materials, making the materials into a product, and distributing the product. These processes are common to all craftworkers whether they use, for example, naturally occurring grasses or highly processed leather, whether they keep sales records by pencil or computer, and whether they ship items worldwide or pass them along to their families.

Technology has had an important impact on all of these stages—sometimes positive, sometimes negative. Its direct or indirect impacts seem to be increasing in all areas of craftwork. The initial design process is not immune, either. Contemporary craftworkers have available computer-assisted design tools (Bell, 1983), and science and technology, by virtue of their dominance in American culture, help shape the creative urges of those and the more traditional craftspeople.

Gathering Materials

Some craftworkers are concerned about maintaining an assured quantity and quality of materials, and both factors relate to technology. These recent concerns are different for various craft media. Two major studies identified the availability of unprocessed raw materials as a problem: the National Crafts Planning Project (McLean, 1981) and Traditional Craftsmanship in America (Camp, 1983). Traditional craftworkers are most concerned:

... anxiety about the continued availability of craft supplies seems to be on the rise among American craftworkers, along with a sense that little can be done to improve dim prospects for the future of a great many craft traditions. . . . The availability of materials for use in traditional craft processes may play a greater role in the health of particular traditions than any other factor” (Camp, 1983, p. 30)

Craft technology usually does not threaten renewable resources directly. There are excep-

tions, but information is so scarce that a definitive evaluation is not possible. Traditional craftworkers may possess a sensitivity to their environment that decreases the chance of their destructive use of resources (Toelken, 1983). Or they may have such a strong cultural need for certain resources that overuse is inevitable. The activities of craftworkers who are new to their profession may be harmful to resources, too. Inexperience may lead to misidentification of plants or animals and rare ones may be used inadvertently. In addition, their sources of supplies may be distant. Therefore, they unintentionally may encourage unscrupulous collecting by commercial suppliers. Poaching for craft supplies, by suppliers or craftspeople, can and does pose a threat to certain plant and animal populations, such as bald eagles, that have been severely decreased by other activities.

Industrial technology usually threatens craft resources more directly. Some wildlife, such as eagles and most whales, have become rare enough that the parts used for crafts are largely unavailable. This unavailability may be due to the actual disappearance of plants and animals or due to government regulation of harvests. Substitutes for these materials can be difficult or impossible to obtain for some craftworkers. Native American crafts commonly have important religious or symbolic significance, and new materials are unlikely to be substituted (Camp, 1983).

Loss of plant and animal habitat maybe just as important in altering the availability of craft resources. Several factors, such as changing landownership patterns, urbanization, and agricultural draining and filling decrease collecting areas (Camp, 1983; LaRiche, 1983). Traditional craftworkers who will not or cannot search more widely for their materials are most affected. Loss of habitat may be the major method by which plant and animal species become extinct (Fosberg, 1983). Therefore, it affects people locally but may also cause more widespread and permanent loss of plants and animals.

Craftworkers in some cases express frustration at not being able to find the right material at an affordable price (Camp, 1983). For woodworkers, this may represent the escalating price that results from the increasing scarcity of wood such as black walnut and bald cypress. This results from both the absolute scarcity of these woods due to loss of habitat—e.g., bald cypress in Florida—as well as the relative scarcity when other wood users out-compete craftworkers for supplies.

Technology sometimes can provide substitutes when desired materials become less available for whatever reason. Plastic “ivory” allows scrimshaw to continue despite tight restrictions on use and trade in natural ivory (Thomas, 1983). Plastic “ebony” in banjos (Jabbour, 1983) replaces a rare, and expensive, wood. And plastic “tortoiseshell” replaces real tor-

toiseshells in jewelry (Dodd, 1983). Some craftworkers have adopted unusual craft supplies—bread wrappers for rag rugs, telephone wire for baskets—which are often high-tech substitutes for materials no longer available to them (Hufford, 1983). In other cases, technology provides a refined or more quickly available product, such as artificially seasoned wood (Hart, 1983). This is an important role for technology but one that is useful to only certain craftworkers. Substitutions sometimes cannot be made without irreparably damaging the craft tradition (Camp, 1983).

Making the Craft

While some craftworkers may feel an ambivalence about adopting new technology, usually they have heartily welcomed those changes



Photo credit U S Fish and Wildlife Service

Lucreaty Clark making a cotton basket from white oak

that made their work easier, Traditional Native American basketmakers, for example, may substitute a nail for the traditional cactus spine awl (Barrows, 1900). Many craftworkers have been quick to adopt power tools for special uses (Teske, 1983). These changes usually are made after thoughtful consideration: What is the role of technology in the craft? Will an important part of the craft be lost if machinery takes over? Will new technology enable the worker to be more or less creative? Often technology is adopted to increase productivity (Ahlborn, 1983), certainly an important factor for craftworkers whose incomes are marginal.

Where technology is carefully considered and integrated into current traditions, its effects are often positive. The adoption of steel tools, for example, by the Haida Indians of the Northwest Coast, coincided with a surge of creativity in architecture and decorative arts (Reid, 1982). Certainly new technology has been adopted enthusiastically by many contemporary craftworkers. Synthetic dyes, for example, have replaced natural ones in most fiber crafts, including basketry. Cold-molded and sheet-plywood construction are important new technologies for building wooden boats (Wilson, 1982).

These changes sometimes are painful, especially for traditional craftspeople. They may introduce dissension into a family or community. In these cases, change—such as that which occurred when Shenandoah basketmakers altered the number of splints in the bottom of woven baskets—becomes a metaphor for tradition versus adaptation in the group (Martin-Perdue, 1983). In other cases, the introduction of modern technology may add health risks to the workplace. This is true for many epoxies and other plastics used in woodworking (McCann, 1981).

Going to Market

Technology plays a large role, both directly and indirectly, in bringing crafts to market. Modern technology brings the craft traditions

of many ethnic groups and localities to outsiders (Paz, 1974). Television and satellite radio, for example, bring the traditions of southwest Arizona to New York and 20th century transportation takes Midwestern vacationers to the Appalachians. This has increased the demand for craft materials, craft classes, and crafts themselves and opened new markets to craftworkers.

Technology also directly affects craft marketing. Some workers, researchers, and organizations use computers for recordkeeping, word-processing, and communicating among themselves. The National Crafts Planning Board is undertaking one of the latest of these projects, an information system that will become operational in 1984 (American Craft Council, 1983). Other types of technology also have an impact. For example, new photographic tools and lightweight construction materials help craftworkers prepare for shows. Improved transportation equipment and systems move people, materials, and finished goods.

Many of these technological changes have little relevance to traditional craftspeople. Sometimes they market locally, do not take part in major craft shows, and do not join craft organizations.

Contemporary craftworkers often face problems more common among fine artists: protection of unique designs. Traditional craftworkers face similar problems when legal supplies of resources cannot be authenticated and their own work cannot be distinguished from inexpensive foreign mass-productions. New technology for copyrighting material and identifying work may solve some of these problems. The Canadian Government, for example, designates authentic native crafts with stick-on labels (Teske, 1983). Some U.S. craft guilds and cooperatives have developed their own trademarks (Jabbour, 1982). New marking methods can nondestructively identify ivory that may be legally sold (McMahan, 1983).

AN INVENTORY OF CRAFT RESOURCES

No comprehensive inventory of the natural resources used in crafts exists in the United States or elsewhere in the world. Information is fragmentary, inconsistent, and often unreliable. Even such a fundamental tool as a flora of the United States does not exist (Jenkins, 1983). With such problems, it is impossible to estimate the amount of material in the craft trade or its economic and ecological significance. The Organization of American States (OAS) International Meeting of Craft Development Agencies and Programs (September 1983) made two relevant recommendations:

- that OAS promote development of an inventory and registry of natural resources used by craftworkers; and
- that a study be conducted, based on this inventory, of the supplies, conditions, and ecology of the resources.

Before such a thorough assessment is made, however, scattered data can be used to piece together preliminary evaluations such as those below. These data cannot be considered definitive, however, since many rely on intuitive judgments of experts.

Ivory and Tortoiseshell

Several marine mammals and sea turtles continue to be used for crafts. Ivory from walrus tusks, sperm whale teeth, seal skins and guts, and sea turtle skins, leather, and shells are some of the raw materials involved.

Several of these animal species declined drastically due to over-harvesting in the 19th and 20th centuries. Therefore, much of their current harvest is strictly controlled and several public and private groups monitor the results. These groups' data on legitimate and black-market trade provide an estimate of overall use of the animals. The craft use of such materials alone cannot be separated but is probably substantial and unique to each species. Sale of many of these items is prohibited; therefore, estimates of illegal trafficking, which are often crude, provide one way of measuring the magnitude of trade.

Illegal trafficking is known to be extensive. Approximately 10,000 lb of walrus ivory were seized in one Alaskan raid, part of a trade worth several million dollars (U.S. Department of the Interior, 1981). There are 3,000 to 4,000 narwhale tusks thought to be in storage; 8,000 sperm whale teeth were confiscated in 1974-75 (McIntyre, 1983); and an estimated 6,000 walrus tusks are illegally traded.

Sea turtles were once a major food in coastal Georgia and South Carolina (McIntyre, 1983). The mainland United States never had sea turtle crafts, but they existed in Puerto Rico, the Virgin Islands, and the Trust Territory of the Pacific Islands (Dodd, 1983). The Convention on International Trade in Endangered Species (CITES), which restricts trade in sea turtles, has effectively reduced commercial trade. The United States does not now trade in these products, but other countries do. Japan, which appears to be the major importer, imported about 75,000 kg of leather, skins, and tortoiseshell in 1981. The proportion of the local and international trade that is craft-related is unknown.

Status of the Resource—All species of marine mammals are protected under the Marine Mammal Protection Act and some are also protected by the Endangered Species Act and CITES. "Taking," importing, exporting, possessing, and selling protected animals are generally prohibited. Exceptions may be made for specimens obtained before regulation in 1972 and for educational/scientific uses. Alaskan Natives are qualified for another important exception. They may take marine mammals for subsistence or for the production of handicrafts. Authentic native articles generally may be sold in interstate commerce (U.S. Department of the Interior, May 1982, August 1982).

Controversy exists regarding the effect of the Native American marine mammal harvests. Some experts feel that it is large enough to threaten marine mammal populations and that it tends to be abused. Others feel that marine mammals can be sustainably harvested if present guidelines are followed. Still others feel that the continued use of marine mammals can be



Photo credit: U.S. Fish and Wildlife Service

Walrus, such as these animals on a beach, are among the marine mammals protected by Federal law. A multi-million dollar trade in illegal ivory continues despite protection. The U.S. Fish and Wildlife Service confiscated these items during several years; all are from endangered species

justified on cultural grounds even if animal populations do suffer. The situation is further complicated because marine mammal populations are shared by many nations. Some countries do not control marine mammal harvests; other nations—e.g., Canada—regulate subsistence harvest and export quite differently than does the United States; and the international harvest quotas are subject to political pressure (McIntyre, 1983).

Craft use of marine mammal ivory did not cause the original decline in these species, although it may slow their current recovery. Crafts that used elephant ivory probably did contribute to the endangerment of that animal (paradise, 1983). Poaching continues to be a problem because of the high prices that ivory brings. The price of sperm whale teeth, for example, increased from \$20 to almost \$1,000 per tooth when it became known as an endangered species (McIntyre, 1983).

The status of the seven species of sea turtles is so precarious that all are given maximum protection by CITES. Substantial trade continues, though, and many feel that it threatens the survival of these animals. As a result, the World Conference on Sea Turtle Conservation recommended that:

“The trade in tortoise shell should cease in those countries where it has no special traditional cultural significance. Those countries where tortoise shell has a cultural value (e.g., in marriage ceremonies) should be encouraged to preserve and recycle antique supplies, to promote the use of synthetic substances, and with all dispatch to phase out the importation of new material.” (Mack, 1983, p. 11).

Effects on Crafts—Problems in obtaining marine mammal products for crafts became chronic, especially for Native Americans in Alaska, with tight regulation (Camp, 1983). Acrimonious debates among craftworkers, hunters, conservationists, and regulators sometimes occur when quotas for subsistence harvest are set. Legislation provides for only Native American craft use of new ivory supplies. Therefore, controversy also arises when other craftworkers are not allowed access to material.

Some craftworkers prefer to avoid any possibility of using illegal materials. They obtain what is known as “pre-act” (Endangered Species Act and Marine Mammal Protection Act) ivory from suppliers. Questions about the age of this ivory persist, and much may not be qualified for legal trade. The technology for dating material, while developing rapidly, does not yet allow fine distinctions to be made (McIntyre, 1983). Other craftspeople have converted to using caribou bone, especially for sales outside of Alaska (Hueber, 1983).

Considerable amounts of seized ivory remain in storage, and some advocate releasing it to craftworkers. Others fear that this will provide an incentive for continued illegal taking.

Tortoiseshell has been prized for centuries and it has important traditional cultural uses in some communities (Mack, 1983). U.S. tortoiseshell crafts in Puerto Rico probably have declined with the virtual elimination of trade, but this is undocumented. Some countries propose either breeding sea turtles in captivity or ranching wild populations under the provisions of CITES that encourage developing alternative supplies. These operations, if successful, may provide new sources of craft material.

plastics can mimic sperm whale, walrus and elephant ivory, and tortoiseshell. They are indistinguishable from real ivory without destructive tests or expensive X-ray analysis. This is new technology, and its impacts on craft uses are likely to be substantial. On the one hand, crafts are continuing that would otherwise have declined along with diminishing resources. On the other hand, some jewelry-makers suffered when plastic turquoise became readily available. Many retailers stopped carrying turquoise rather than risk selling imitation jewelry (Halkett, 1983). A similar situation may arise with other plastic substitutes.

Feathers

Feathers have been used extensively in crafts. They were the main supply for Hawaiian feathercap and feather gods (Belshe, 1983). They are still used in fly tying (Hornblower, 1983)



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and many Native American crafts such as headdresses, clubs, kachina dolls, and fans (Stuart, 1981).

Supplies of many species are severely curtailed, forcing craftworkers to use substitutes. Estimates of the total use of feathers in crafts do not exist. A fraction of the use can be identified by legal and illegal demand for eagle feathers.

Bald and golden eagles are protected under the Bald Eagle Protection Act, The Migratory Bird Treaty Act protects all wild birds except: 1) resident game birds such as pheasant and grouse, 2) starlings, 3) feral pigeons, and 4) English sparrows (U.S. Department of the Interior, undated). The Endangered Species Act also protects a large number of birds (U.S. Department of the Interior, May 1982).

Native Americans may use special provisions of these acts to obtain parts of eagles for religious ceremonies. Therefore, facilities for storing contraband and accidentally killed eagles were established in Idaho for handling this distribution. A long waiting list exists for these birds (Frederick, 1983).

The U.S. Fish and Wildlife Service has intensified its investigation into trafficking in eagles and other migratory birds and has developed the forensic skill to identify most bird parts to species. Based on its information, a substantial number of birds are being used illegally for crafts. Officials have estimated that illegal trade in bird feathers approaches at least \$1 million annually, about one-tenth of the total trade in illegal wildlife (The Farmington (N. M.) Daily Times, 1981). For example, enforcement agents in 1981 seized feathers and craft items worth almost \$500,000 from 35 individuals in New Mexico and Oklahoma and more than 30 businesses in Arizona. This raid included at least 4,000 scissor-tailed flycatchers, 155 eagles, and hundreds of woodpeckers, hawks, owls, and other protected birds (Stuart, 1981). A 1983 raid resulted in arrest warrants in eight States for about 50 people accused of trafficking in eagle and other bird parts. Officials estimated from this evidence that about 100 eagles are killed

annually for the black-market trade in Native American artifacts (Shabecoff, 1983).

Status of the Resource—The pressure on bird populations from these activities is significant. Parts of Oklahoma that once supported hundreds of scissor-tailed flycatchers per acre now have only a few (Stuart, 1981). About 1,200 nesting pairs of eagles exist in the contiguous United States, but the population rises to more than 10,000 birds during the winter migration from Alaska and Canada. Experts feel that harvests of hundreds of birds are cause for concern under these conditions.

Though feather crafts alone are not thought to have caused the large-scale extinctions of tropical Hawaiian birds in the 1800's, they may have been one factor. The introduction of cats and poultry diseases probably contributed more to the decimation of Hawaiian bird populations (Fosberg, 1983).

Effects on Crafts—Some feather crafts are relegated to history because of the restrictions on obtaining, possessing, and selling feathers. Items such as feathercoats, which required feathers from thousands of tropical birds, probably will not be made again. Controversy exists over displaying these items and whether rare birds may still be jeopardized by exhibition (Shetler, 1983).

Some people who worked with feathers used ones that are now controlled. Some have substituted new supplies for illegal ones. Kachina dolls, for example, continue to be made and sold but without eagle feathers. Concern exists that substitutions threaten important traditional aspects of the craft (Camp, 1983). But the role of change in traditional crafts has always been subject to lively debate (Ahlborn, 1983), and there is no consensus on whether crafts are permanently damaged by involuntary substitutions.

Fibers and Dyes

A wide variety of plants is used for basketry, fish traps, and dying. Usually these plants are collected from wild populations. A few, such

as pandanus and coconut, are propagated and grown in the Pacific islands to provide ready craft supplies (Fosberg, 1983). Some of these plants occur throughout the United States. Others, such as devil's claw, grow in much smaller geographic areas and are vital to unique local crafts. A few of the common natural dyes are imported. Indigo, madder, and fustic are among these. (See app. B for scientific names.)

Status of the Resource—Wild plants generally do not seem to be threatened by craft use (Duke, 1983; Soderstrom, 1983). Usually such large amounts are required that only "weedy" plants are used (Hueber, 1983). There are exceptions, however. Appendix B lists almost 600 basketry and dye plants, of which 89 are rare enough to be of concern to conservationists (The Nature Conservancy, unpublished information). Some plants, such as bloodroot, have been widely used in traditional crafts and now are rare enough to be protected by State regulation (Eshbaugh, 1983).

Lichens have been important sources of natural dyes; they provided both the unique colors and fragrances of Harris tweeds. They are more vulnerable to overcollection than most plants because they grow so slowly. Unscrupulous collecting may threaten local lichen colonies (Hueber, 1983). Like other resources, lichens are threatened more directly by effects of industrial technology: they are among plants most sensitive to air pollution.

Misidentification may pose a problem for the sustainable use of plants in crafts. Certain members of large plant groups such as willows and birches, for example, are uncommon. One variety of sweet birch is on the U.S. endangered or threatened species list (U.S. Department of the Interior, January 1982). Almost one-fourth of the plants in appendix B have close relatives that are either listed or under review for listing as threatened or endangered. Therefore, craftworkers who are not certain about correct identification of their material may collect rare plants along with more common ones.

Effects on Crafts—Craftworkers face few legal restrictions in obtaining plants. They may face limitations imposed by other factors. The loss of wetlands eliminates some basketry plants (LaRiche, 1983). So much indigo is required for denim that craftworkers have been essentially excluded from the market (Hueber, 1983).

Dying with plants has decreased dramatically with the availability of commercial dyes. Naturally dyed items generally still command higher prices, as much as 80 percent higher for Navaho rugs (Eshbaugh, 1983). Concern exists, however, that the dyer's botanical knowledge is slipping away (Eshbaugh, 1983; Hueber, 1983). Protection of information maybe just as important as protection of the resource in this case.

Wood and Tree Fern Trunks

Native and imported woods supply builders and makers of musical instruments, boats, and furniture. Some records exist of U.S. forest resources, but they do not provide a good indication of the amount of wood used in crafts. The U.S. Forest Service, for example, maintains records of forest stock and annual timber harvests on Federal lands. Only certain important woodworking trees are included in their figures. Some, such as black walnut, are specifically excluded because of their rarity. For these reasons, only local, comprehensive State, or private woodlot records are likely to show changes in craft wood availability and use. Such records have not been compiled yet, and their synthesis would be a formidable task.

Status of the Resource—Little concern exists that commercially important continental American trees are endangered, although there are a few exceptions. In some cases, the specialty woods used by craftworkers are being lost as native forests are replaced by pine plantations (McMahan, 1983). Tree ferns are among the few rare plants in international trade that are included under CITES (McBride, 1983). Their trunks are used in the commercial green-



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house industry and a smaller number are used in crafts. In 1982, 2,770 bags of fiber and 40 cubic meters of other material were imported from Guatemala, and 6,000 kg of pieces of "wood" came from New Zealand. These imports probably are a fraction of the total volume (McMahan, 1983).

Commercial use of tree ferns is too recent to have depleted their populations. Much of the material comes from forests already destroyed; in other cases, people are selectively removing the tree ferns. It should be noted, however, that the commercial greenhouse market for tree ferns developed largely due to the increasing scarcity of *Osmunda* ferns that were overharvested for the same use. Many tropical forests are being rapidly destroyed (Office of

Technology Assessment, 1984) and tree ferns are among the potential victims.

Effects on Crafts—Craftworkers are noticing the depletion of local woodworking supplies. This may indicate the beginning of new problems. Makers of kachina dolls, for example, are forced to travel longer distances to find suitable cottonwood (Eshbaugh, 1983). A 50-year-old splint basketmaker has seen a decrease in the local availability of different oaks (Camp, 1983).

Woodworkers, more than other craftspeople, are concerned about the availability of good supplies and rising prices when they are available (Nickerson, undated). These concerns cannot be documented with readily accessible

data. Concern seems warranted, however, based on cases where wood availability changed sharply and craft traditions and local economies suffered substantially. This happened on a regional scale in the 1920's when the chestnut blight destroyed much of the economy of the Shenandoah Mountains (Reeder, 1978).

Woodworkers are also concerned about wood quality, a trait more difficult to document. Some boatbuilders note the declining quality of marine plywood (Phillips, 1983). Others have turned to curing their own wood, since commercial curing may not produce suitable wood for boatbuilding or making fine musical instruments. In other cases, lumber may be cut too short for some craftworkers, in effect making it unavailable.

Shells and Coral

Shells and skeletons of marine, freshwater, and terrestrial invertebrates are used in large amounts in crafts. Many are used whole as ornaments; others are ground into a variety of products including pottery glazes. There are about 5,000 kinds of shells that are large enough for sale. Few of these now come from U.S. waters, but this may change as international trade is more strictly regulated by CITES.

The vast majority of shell imports enters the United States through Florida, California, New York, and Oregon. The United States is one of the largest importers of ornamental shells, and imports have escalated in the last few years. About 4 million kg of shells and 500,000 kg of coral are imported annually, worth about \$11 million. These amounts comprise only a small percentage of the world shell population. The major use of shellfish, but not of coral, is for food, and harvest for ornamental shells represents a fraction of the food catch (Abbott, 1980; Wells, 1981).

Status of the Resource—Industrial technology threatens some of these invertebrates. Some coral reefs are dynamited for fishing and

for construction material (Wells, 1981). The continuing destruction of tropical forests has caused the extinction of a number of tree snails in Hawaii and Asia. Spills of toxic materials similarly have eliminated freshwater shells in certain places in the United States and elsewhere. Such destruction of habitat can eliminate populations that cannot be depleted by intensive collecting.

Marine biologists generally agree that the craft and souvenir trade does not pose a similar threat (Abbott, 1980), but increasingly tighter regulation reflects continuing concern. Therefore, conservationists urge caution in exploiting shells and coral. It is particularly appropriate in harvesting coral. Both white and black coral populations are thought to be threatened, but pink, or precious, corals probably are not. Coral grows very slowly; collecting could destroy reefs weakened by dredging, pollution, and siltation. Deep sea fishing technology is developing rapidly and greater accessibility makes overcollection more probable. Sustainable management of shell populations remains an elusive goal (Wells, 1981), especially in tropical waters where fishing for craft purposes is prominent.

Effects on Crafts—Shell collecting is regulated in some places, such as Florida, to protect shells that were previously overcollected. Few countries provide similar protection for purely ornamental species, although most control harvest of edible mollusks (Wells, 1981). Some expect that shell regulation will increase as more countries become parties to CITES and additional species are added to its appended lists of controlled species. Two species of giant clams, for example, recently have been added to Appendix 2 of CITES, since craft and decorative uses of their shells have been increasing (McIntyre, 1983). No evidence exists on how these changes are affecting craftspeople. The situation is analogous to marine mammal regulation in some ways; so the future may see similar substitutions, illegal trade, and confusion. Some crafts may face economic endangerment if retailers fear selling illegal products.

Hides

The United States produces large numbers of cow, calf, goat, and sheep hides from the livestock industry. Smaller numbers of alligator, snake, frog, lizard, and turtle skins also are used to produce leather. Louisiana has a legal alligator hunting season and about 16,000 to 20,000 alligators are killed annually (Cook, 1980). Few hides are processed in the United States; most are shipped to Europe or Japan for curing and, often, finishing. In 1980, almost 24 million animal hides and skins were exported (U.S. Department of Agriculture, 1981). The proportion of these hides used in crafts is not known.

Status of the Resource—Alligators are protected by the Endangered Species Act in several States, and the Lacey Act precludes the transportation of illegally taken specimens in interstate or foreign commerce. Poaching remains a problem, but officials feel that current regulations are effectively protecting alligators (Cook, 1980). Too little is known about leather from snakes, frogs, and lizards to evaluate their status.

Effects on Crafts—Most U.S. leatherworkers turn to jobbers for their supplies, with varying

results. Some face problems obtaining high-quality hides. Others find that the diversity of leather curing processes used, especially in Europe, makes available to them a very broad range of products.

Hide supplies can be unstable. Alligators in the Southeast have been overhunted, then strictly protected, then hunted again in the last decades. Management of most natural populations must be this dynamic, but craftwork is difficult when supplies cannot be ensured. One goal of CITES is development of alternative supplies. Plans for alligator and sea turtle ranches or breeding programs may stabilize supplies.

Leatherworkers are vulnerable to large price fluctuations; prices have as much as tripled in one year (Ahlborn, 1983). This is due to changes in the international hide market. The United States imports a large number of hides—at least 10 million in 1980 (U.S. Department of Agriculture, 1981). Officials would like to encourage more American leatherwork to avoid the high “value added” that these hides often include,