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## STRATEGIES TO ADDRESS HUMAN CONFLICTS WITH RACCOONS AND BLACK BEARS IN NEW HAMPSHIRE

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# STRATEGIES TO ADDRESS HUMAN CONFLICTS WITH RACCOONS AND BLACK BEARS IN NEW HAMPSHIRE

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**ABSTRACT:** The Cooperative Animal Damage Control program in New Hampshire has received increasing requests for assistance over the past 5 years. This trend is due largely to changing public concern over black bears (*Ursus americanus*) in residential areas and an epizootic of the Mid-Atlantic strain of rabies in raccoons (*Procyon lotor*). A growing number of requests is related to improper garbage storage and feeding of songbirds during late spring and summer. Some traditional methods, especially live-trapping and relocation, are not generally appropriate to resolve these conflicts. In this paper we discuss trends in requests for assistance from 1988 to 1992 and innovative strategies that emphasize better cooperation among agencies and human behavior modification to address the source of the problem.

**Key words:** wildlife damage, black bear, raccoon, garbage, bird feeder, New Hampshire

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New Hampshire has experienced rapid development resulting in substantial increases in human-wildlife conflicts. Changes in the number and type of requests for assistance with black bear (*Ursus americanus*) and raccoon (*Procyon lotor*) for problems during the past 5 years indicate that many conflicts occur because raccoons and bears have easy access to food, especially bird seed and garbage. This trend has necessitated changes in the response of New Hampshire Animal Damage Control (ADC) to requests for assistance with these problems. In this paper we discuss 5-year trends in requests for assistance and innovative strategies that emphasize better cooperation among agencies and human behavior modification which addresses the source of the problem.

A major source of funding for New Hampshire ADC comes from a Cooperative Agreement with the New Hampshire Fish & Game Department. Highest priority is given to agricultural damage caused by game animals. The ADC field staff spends a good share of its time and resources on assessing and controlling agricultural damage caused by white-tailed deer (*Odocoileus virginianus*) and black bear. However, agricultural damage accounts for only about 11% of the total volume of requests received annually. Over the past 5 years,

requests concerning agricultural conflicts have remained relatively constant while total requests for assistance have increased (Fig. 1).

The raccoon and the black bear are two species of growing concern that present similar damage management challenges. Both are opportunistic feeders that quickly learn to capitalize on food humans provide (Frantr 1992, Rogers 1976). Our data suggest that the increase in non-agricultural concerns about bears and raccoons is related to the current trend of feeding songbirds year-round and to the boom in urban and suburban development, resulting in more dumpsters, particularly the plastic-topped variety. The paradox is that while we are probably increasing the biological carrying capacity for black bears and raccoons by providing easy access to nutritious foods (Rogers 1976), the cultural carrying capacity is decreasing as our human population becomes less tolerant of conflicts with wild animals. Many people who unintentionally draw raccoons, bears and other wildlife into their yards with bird feeders or stored garbage, often expect some government official to take them away when a conflict occurs.

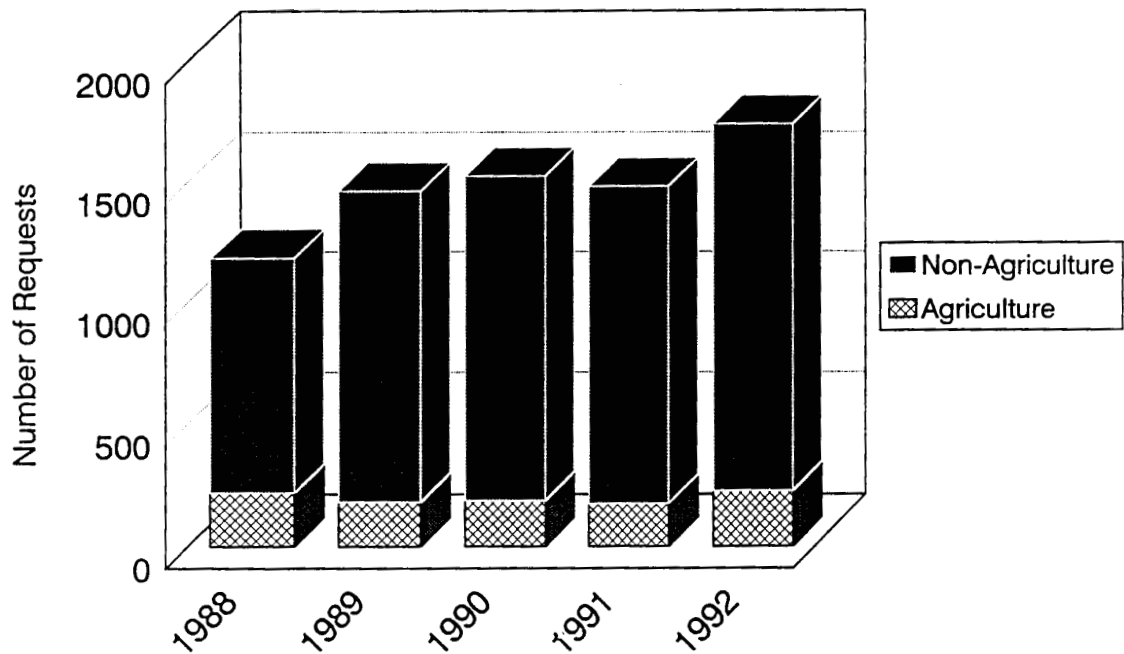


Fig. 1. Requests for assistance with agricultural and non-agricultural damage to the Cooperative ADC program in New Hampshire from 1988-1992.

## RESULTS AND DISCUSSION

### Raccoons

Technical assistance for residential raccoon problems has always included advice to remove bird feeders, close off access to den sites in residences and store garbage securely (Slate et al. 1992). Yet, there has been an increase in raccoon problems related to bird feeders and garbage. Until recently, New Hampshire ADC also loaned 75 to 100 cage traps annually to members of the public, enabling them to live-trap their own problem raccoons. When possible, we advised people to release the raccoon on-site after closing off or removing the attractant. Too often, however, residents were convinced if they could transport that "one raccoon" 20 miles away, they could continue to feed birds, leave chimneys open, or keep the garbage can by the door. From the increase in reported raccoon problems associated with bird feeders and with garbage over the 5-year period (Figs. 2 and 3), it is evident that moving raccoons did not solve or reduce these problems.

Wildlife professionals are aware that live-trapped animals may be inhumanely treated and that the known survival rate of relocated raccoons is low (Rosatte and MacInnes 1989). Relocation of "nuisance wild animals" is ecologically unsound and does not address the source of the problem. But the public

has been led to believe that live-trapping is the humane answer. In an attempt to disabuse the public of this notion, ADC New Hampshire staff wrote a leaflet on the down side of trapping and relocation which was distributed with each live trap loaned. The intent was to persuade people, once they had removed the immediate problem animal, to start thinking about long term solutions such as enclosure and secure garbage storage rather than waiting for the inevitable next episode and coming back for another trap. People took the leaflet and looked at it because they had to in order to obtain a trap. However, many people kept moving that "one raccoon," which often became many raccoons.

The arrival of the Mid-Atlantic strain of rabies in New Hampshire, in the fall of 1992, necessitated a major change in recommendations for raccoon problems. It is dangerous for the general public to handle high risk rabies species and irresponsible for public agencies to facilitate relocation of animals that could accelerate a disease outbreak. In October 1993, we stopped loaning cage traps that could catch a high risk rabies species. New Hampshire Fish & Game Department also issued a statement cautioning against relocation or rehabilitation of high risk rabies species, especially raccoons. Predictably, the number of requests for assistance increased sharply with the arrival of rabies in New Hampshire, as it has elsewhere in the northeast (Trimarchi and Debbie 1992).

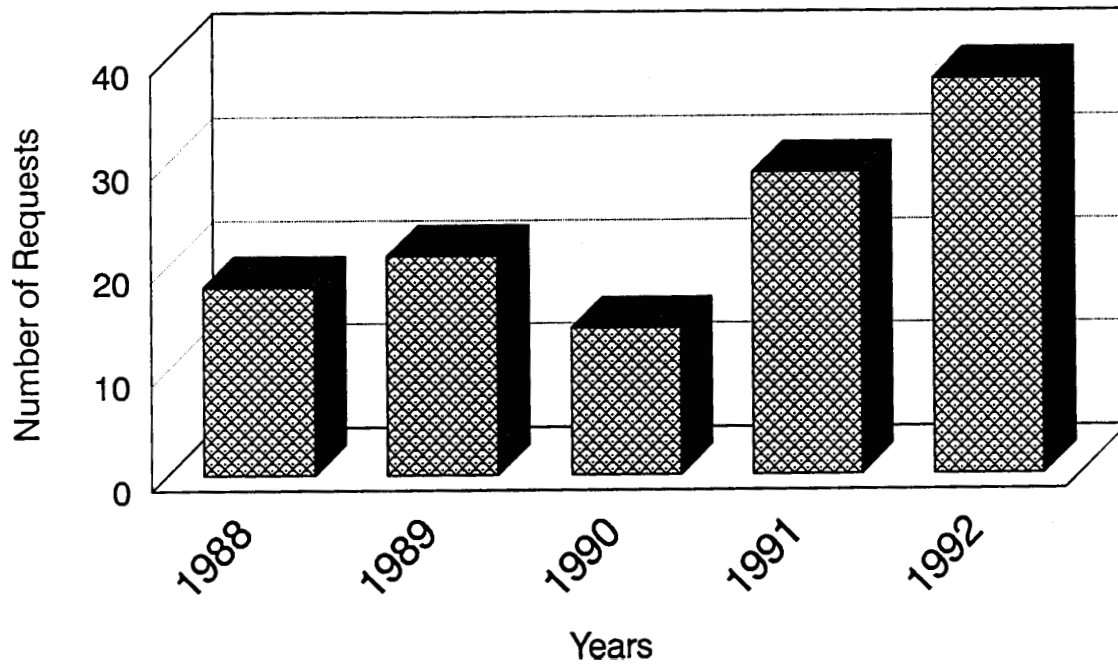


Fig. 2. Requests for assistance to the Cooperative ADC program in which bird feeders likely resulted in human-raccoon conflicts in New Hampshire from 1988-1992.

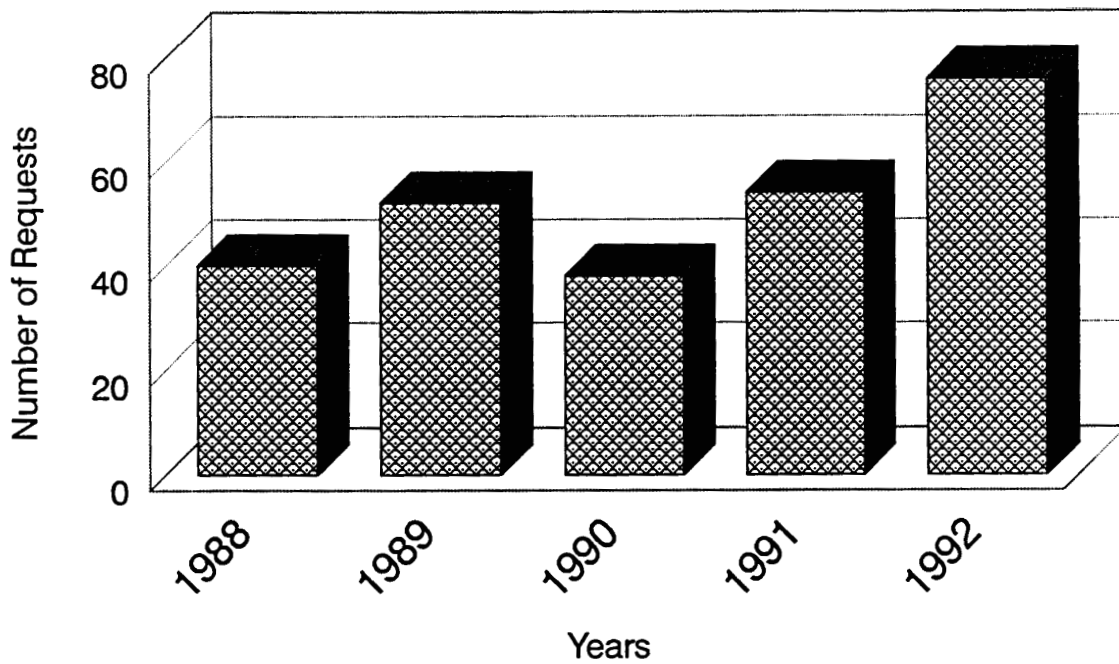


Fig. 3. Requests for assistance to the Cooperative ADC program in which poor garbage management likely resulted in human-raccoon conflicts in New Hampshire from 1988-1992.

Raccoon-human conflicts at dumpsters, garbage cans and bird feeders are a serious concern because people and pets may be at greater risk of exposure to rabies. The live trap option is out and lethal control is seldom feasible for urban dwellers. Yet, when rabies is a concern, the public needs assistance more than ever. Our strategy should be to modify human behavior with emphasis on reducing the chance of human exposure to rabies and preventing future conflicts with raccoons and other high risk species.

We found that we were able to use the rabies epizootic as an effective education “instrument.” People who are justifiably fearful of rabies are much more attentive to recommendations on addressing the source of the problem to provide long-term solutions, and more likely to spend money to hire a professional trapper for the short-term.

We expected more resistance from the public when we advised they would need to solve the problem without livetrapping or any other method that might increase the potential for exposure to rabies. We believe acceptance of this strategy is due in part to fear of rabies, but equally important is the approach we use, which follows these guidelines:

**-BE FIRM** and unapologetic in refusing a request for a live trap. People need to accept that there is no quick and easy solution to wild animal problems.

**-EXPRESS CONCERN** and recognize the seriousness of each call, even if it is as ludicrous as “Can my fish catch rabies?” Understand that people lack basic knowledge on rabies and wild animals.

**-ENLIST PARTICIPATION** and show people there are actions that are often preferable to livetrapping. Stress that if the attractant is removed or made inaccessible, the problem animal will usually go away. We need to teach people to be active in the solution to their problems. Getting them involved prevents helplessness and frustration and the expectation that someone else will take care of their problem. People have more incentive to act constructively if the loan of a trap is not an option.

**-PROVIDE ALTERNATIVES** when possible so people may have choices in solving the problem. For example, instead of feeding birds in summer, suggest providing a dust bath or shower for the birds or joining a bird watching group. To minimize the attractiveness of garbage, we commonly suggest composting away from the house, omitting meat scraps and sweets, keeping trash inside until just before collection, building a strong storage bin, or joining with neighbors to hire a secure dumpster service in a central location.

**-BE SPECIFIC** when explaining how to make a dust bath with fine sand and wood ash, how to cut down on garbage odors by double-begging and using ammonia. Suggest designs and materials for building a garbage shed. Follow up phone

recommendations by mailing information about raccoons as well as illustrations and diagrams of materials and procedures discussed. Merely saying, “You need to clean up your act,” and refusing to provide a trap will only alienate the people we most need to reach.

We know our approach of preventing future conflicts will not always solve the immediate problems. Urban raccoons are bold and aggressive and can be quite destructive when access to a den site or food source is denied. Sometimes individual animals must be removed. New Hampshire Fish & Game Department provides us with a list of trappers in each county who remove problem animals for a fee. We strongly advise inexperienced people to hire one of these trappers or a commercial nuisance wildlife control operator, and then to take long-term preventive measures to eliminate the necessity of dealing directly with raccoons in the future.

Not all raccoon problems can be solved on an individual basis. As wildlife professionals, we have a responsibility to educate groups of residents and to provide them with options to help resolve what is often a community problem. Landlords who are negligent about repairs or garbage storage sometimes need prompting from health authorities to meet their responsibility to provide a safe environment for tenants. Occasionally health officials have intervened after we notified them of wild animal problems caused by hazardous or unhealthy living conditions in apartment buildings. We dispense literature, including posters, and sometimes enlist the help of New Hampshire Fish Game Department Conservation Officers in informal neighborhood talks. We have held workshops with County Extension programs and we plan future workshops on reducing wildlife attractants and on exclusion techniques.

## Bears

Interstate travel and second homes have created a diverse “new” human population in New Hampshire as well as a transient summer population unfamiliar with bear behavior. Uninformed residents and tourists, most of them unwittingly, may attract bears into residential areas with food, and then demand the bears be removed when conflicts occur. Considering the numerous human-bear encounters in back yards, campgrounds and at dumpsters, it is a tribute to the tolerant nature of black bears (Herrero 1985, Fair 1990) that there have been no fatalities and only a few injuries in New Hampshire in over 200 years. More importantly, many of the residential and campground bear problems are predictable and preventable through proper management.

Some bears in New Hampshire come out of the den as early as late March. Natural food is often scarce at that time, but bird seed and suet constitute a major food attractant for bears from then until the end of June, when many of the soft mast species ripen. Many people feed birds in winter without incident, but problems can arise when feeding is continued year round. If feeders are taken down by mid-April, there is a

much lower potential for conflict with bears. We are making preliminary attempts to enlist the Audubon Chapter to support our recommendations and are optimistic they will work cooperatively with us in formulating alternatives to bird feeding when bears or raccoons are a concern.

Keeping bears out of garbage is becoming more difficult. Many local landfills have been closed. Transfer stations which operate on a restricted schedule force residents to store garbage at home for longer periods of time. More condominiums and tourism have led to a proliferation of dumpsters. Some resorts use completely open dumpsters, and sanitation companies servicing condominiums are replacing metal-topped dumpsters with plastic-topped models that are cheaper and easier to operate. Neither design excludes bears and they feed at these types of dumpsters with little difficulty. Also, a few restaurant owners purposely entice bears with food to entertain tourists. Even when management tries to comply with safety recommendations by having steel-topped dumpsters, some tourists have been known to thwart precautions by spreading peanut butter on locked dumpster covers or leaving food on the dumpster top to purposely attract bears. The consequence of these activities is habituating bears to the presence of people. Recent attacks in other parts of the country lead us to believe we should not underestimate the threat to humans from habituated black bears (Essman 1993).

Bear problems in New Hampshire campgrounds were traditionally addressed by advice to clean up food attractants and frighten bears with pyrotechnics. Persistent bears that presented a threat to human safety were culvert-trapped or snared, ear-tagged, and relocated at least 50 miles away. Repeat offenders were humanely destroyed.

The increase in bear problems around bird feeders and garbage storage (Figs. 4 and 5) has caused a rethinking of the methods used to address these types of problem bears. It is expensive to assign personnel to set and monitor traps over a period of 1 to 7 days and to process and relocate a captured bear. Also, relocating bears is only marginally successful in stopping damage or in keeping bears out of trouble. More than 30 years of data on relocating problem bears in New Hampshire show that 61% of relocated nuisance bears are known dead, and that the average time between relocation and death was less than 11 months. Relocated bears are apparently highly vulnerable to hunting, shooting or other mortality factors.

Other areas of the country report some success in preventing damage by relocating bears from crops or livestock, thus allowing time to harvest the crop or move livestock before the bear returns (Armistead 1991). Homing ability of bears is well-documented (Rogers 1986). Records for New Hampshire clearly show that most relocated bears start homing as soon as they are released from the culvert trap. Therefore, the decision to relocate bears in a relatively small state like New Hampshire must be used judiciously.

Relocation is not the preferred method of solving problems related to garbage storage. Shooting a bear at a dumpster as an alternative to trapping and relocating is also usually unacceptable to the public and should be considered as a last resort. A better long-term strategy to address this growing problem is to focus on ways to manage garbage storage and disposal, because bears, like raccoons, learn quickly to capitalize on careless management of garbage. Similarly, when a conflict is caused by one species interacting with one or more other species at a bird feeder, it is more responsible to formulate alternatives that result in removal of the attractant or making it inaccessible.

Bear problems are similar to raccoon-human conflicts in that they are usually not confined to a single back yard; more often they are problems within a neighborhood or recreational site. Everyone must be aware and act responsibly when bears are nearby. An initiative taken by the Cooperative New Hampshire ADC program to assure that appropriate advice was reaching campers was the production and distribution of a visible, weather-resistant poster detailing the steps that should be taken to avoid conflicts with bears in campgrounds. This project was undertaken in conjunction with the U.S. Forest Service, New Hampshire Fish & Game Department, New Hampshire State Parks Department and New Hampshire Campground Owners Association. We also wrote two leaflets on preventing bear-human conflicts in residential areas and campgrounds. Our emphasis is on making people aware of their responsibility for trying to avoid conflicts with bears. In areas where bear concerns are common, we have begun to hold informational meetings with New Hampshire Fish & Game Conservation Officers, ADC personnel, local law enforcement, landlords and concerned residents in an attempt to address the problem at the community level.

To our surprise, the rabies epizootic has helped us more effectively address bear problems because, as discussed earlier, bird seed and garbage attract high risk rabies vectors like the raccoon as well as bears.

We have opened communication with dumpster companies to ensure that metal-topped, lockable containers will be available in areas where bears are a concern. Where immediate protection is necessary, as when an aggressive bear terrorizes kitchen workers trying to empty garbage, we may loan electric fence materials and provide fence configurations known to be economical and effective. We also include a cost estimate and a list of fence dealers. This approach helps people implement longer-term solutions than relocating or destroying the problem bear.

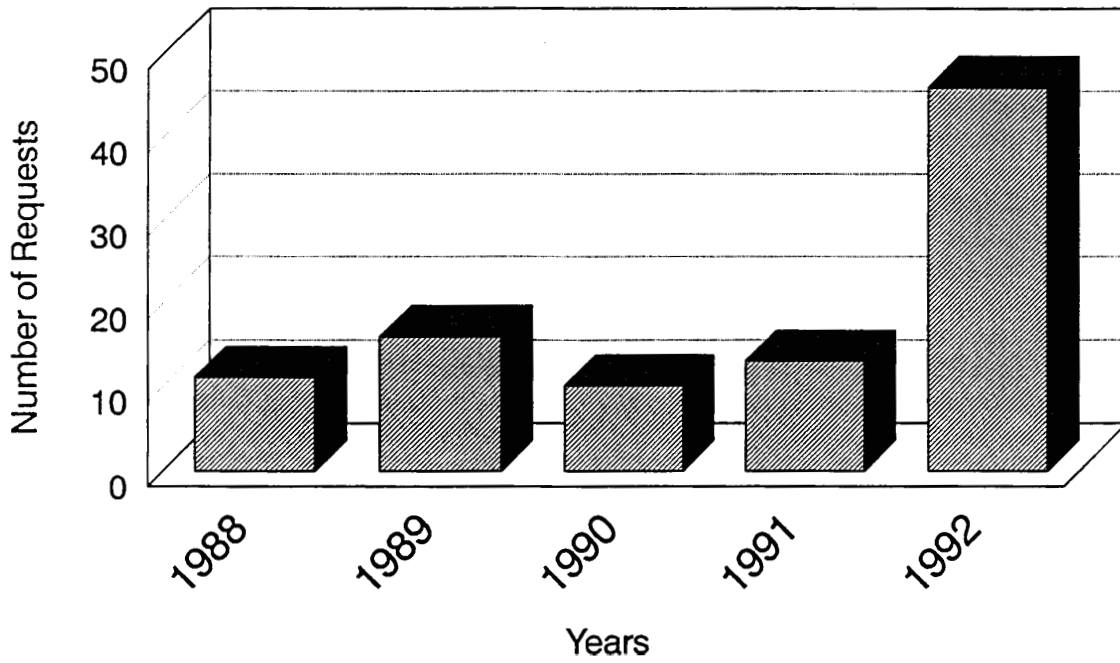


Fig. 4. Requests for assistance to the Cooperative ADC program in which bird feeders likely resulted in human-bear conflicts in New Hampshire from 1988-1992.

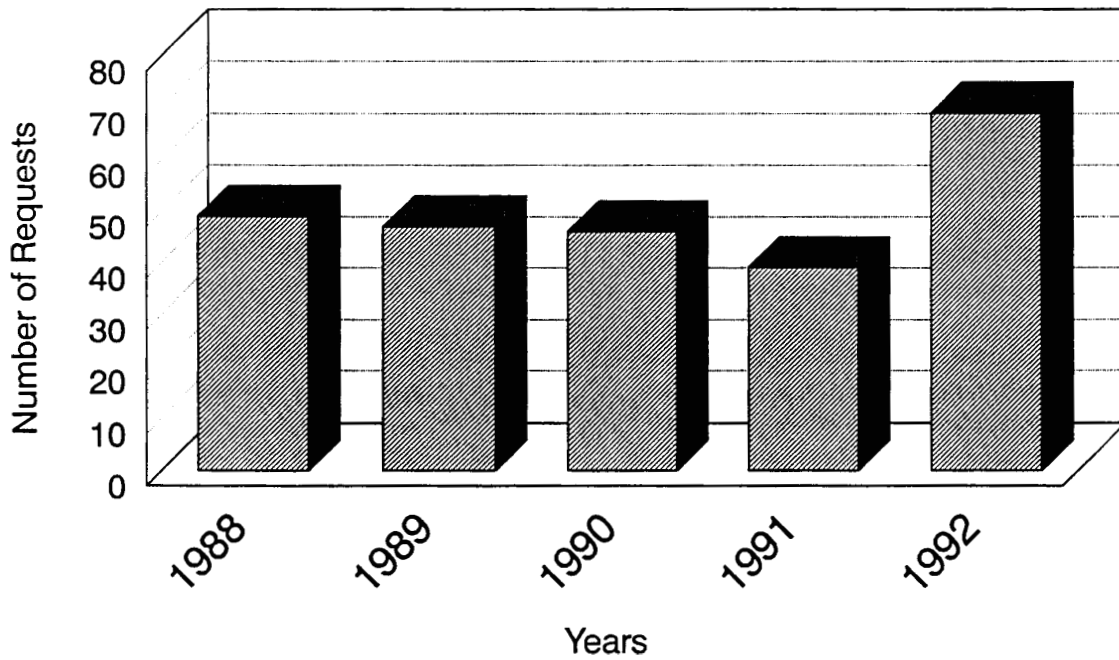


Fig. 5. Requests for assistance to the Cooperative ADC program in which poor garbage management likely resulted in human-bear conflicts in New Hampshire from 1988-1992.

## SUMMARY

Requests for assistance with raccoons and black bears in residential areas have increased over the past 5 years. Many of these requests are related to spring and summer bird feeding or easy access to garbage. Because of an epizootic of rabies, ADC in New Hampshire has discontinued the loan of live traps for raccoons and other high risk rabies vectors in favor of human behavior modification as a first recommendation. Relocating problem bears is expensive, frequently unsuccessful in stopping damage, counterproductive to providing a longer-term solution to conflicts, and often leads to death of the bear. Our emphasis is now on human behavior modification, interagency cooperation and obtaining bear-proof dumpsters. The key to public acceptance of this approach is offering practical, affordable, specific advice that addresses the source of the problem.

Finally, it is important that we continue providing technical assistance on an individual basis. In addition, we plan to implement a more aggressive mass media approach to teaching the public that reducing conflicts with raccoons and bears is most often achieved in the long term by removing the source of the problem rather than the problem animal. Our intent is to derail the increasing trend in bird feeder and garbage storage problems while rabies is an effective catalyst for modifying human behavior. We will hopefully be able to effect a shift in public understanding that will outlast the rabies crisis and benefit humans, raccoons and bears alike.

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