mitment to contribute the amount necessary to make the plan sufficient, that commitment will be considered a plan asset if PBGC determines that the employer can fulfill its undertaking.

Line 22(d). The plan administrator has the option of whether to seek a notice of sufficiency or to have PBGC place the plan into trusteeship. If a notice of sufficiency is sought, plan assets must be sufficient, when allocated in accordance with section 4044 of ERISA, to satisfy guaranteed benefits under section 4022 of ERISA as of the date plan assets are distributed. If the plan administrator does not demonstrate sufficiency, PBGC will issue a notice of inability to determine sufficiency and proceed to place the plan into trusteeship. PBGC will require the submission of periodic financial statements for the plan between the date of termination and the date the plan is placed into trusteeship.

Line 23. In order for PBGC to determine the sufficiency of plan assets, participant data schedules must be submitted. The information should be furnished in a similar format to that shown below. PBGC will accept copies of workpapers as long as the data submitted is sufficient to show the calculations of the allocated benefit for each participant. If the participant data schedules are not completed at the time this form is to be filed, the form should be filed with a request for an extension of time to complete the schedules. (See General Instruction F regarding an extension of time.) In addition, if a retroactive date of termination is being requested, the plan administrator may wish to postpone the completion of the participant data schedules until the plan administrator and PBGC agree upon the date of termination. In these cases, a request for an extension of time should be submitted with the form.

Line 23(a). This schedule should include all active participants as of the proposed date of termination and all former participants who terminated employment with a deferred vested benefit that represents a liability to the plan. The information should be furnished in the following or similar format.

Columns (a), (b) and (c) should show the name, sex and date of birth of each participant. If under the terms of the plan, the participant is entitled to a form of benefit that provides retirement income to a beneficiary in the case of the death of the participant (including a qualified J&S benefit), the name, sex and date of birth of the beneficiary should be shown in parenthesis on the line under that of the participant. Columns (d), (e) and (f) should show the date employment began for purposes of computing benefits, the date participation in the plan began, and the earlier of the date employment terminated or the date of plan termination. Column (g) should show the amount of credited service as defined in the plan document. Column (h) should show the highest percentage of ownership during the five years prior to the date of plan termination for each substantial owner as defined in Section 4022(b)(6)(A) of ERISA.

Columns (i) through (m) should be used to show the specific data necessary to compute the accrued benefit under the provisions of the plan. The following are examples of the types of data that should be reported:

(i) If the plan is contributory, show the amount of employee contributions with and without interest.

(ii) If compensation is a factor in the benefit formula, show the applicable compensation figure as defined in the plan document. If the benefit formula provides that past service and future service are determined using different compensation figures, one column should show the compensation for past service and one column the compensation for future service.

(iii) If the benefit under the plan is offset by a percentage of the Social Security benefit, show the offset.

(iv) If prior to retirement, the benefit is determined from the cash value of insurance contracts or annuity contracts, show the cash value.

Column (n) should show the accrued monthly benefit, Column (o) the vesting percentage and Column (p) the vested accrued monthly benefit. Column (q) should show the allocated monthly benefit to be provided. If the allocated benefit is less than the vested benefit, provide in a footnote to the schedule an explanation as to how the allocated benefit was determined. Column (r) should show the form of the benefit (straight life annuity, ½ J&S annuity, 10 C&C annuity, lump sum, etc.). Column (s) should show the value of the benefit. If annuities are to be purchased from an insurance carrier, attach a copy of the annuity bid. If an early retirement benefit is to be purchased from PBGC, identify these benefits in a footnote to the schedule. If participants elect a lump sum payment, provide in a footnote to the schedule an explanation as to how the lump sum amount was calculated.

Line 23(b). This schedule should include all retirees and beneficiaries receiving monthy benefits from the plan. Do not include retirees who are receiving their full vested accrued benefit through a paid-up annuity contract issued by an insurance carrier. The schedule should be in the same format as Line 23(a) with the addition of the following two columns:

(t) The date benefits commenced should be shown for each retiree.

(u) The type of benefit should be shown for each retiree (normal, early, late, disability).

Name of plan:

Name of participant (beneficiary)	Sex	Dates				Credited service	Percent of business owned		
		Birth	Employment began	Participation began	Earlier of: 1. Employment terminated 2. Plan terminated				
(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)

(k)	(l)	(m)	Accrued monthly benefit (n)	Vesting percent (o)	Vested accrued monthly benefit (p)	Allocated monthly benefit (q)	Form of benefit (r)	Cost or value of benefit (s)

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Part III

Department of the Interior

Fish and Wildlife Service

Final Regulations Frameworks for 1979–80 Early Hunting Seasons on Certain Migratory Game Birds in the United States

DEPARTMENT OF THE INTERIOR

Fish and Wildlife Service

50 CFR Part 20

Final Regulations Frameworks for 1979–80 Early Hunting Seasons on Certain Migratory Game Birds in the United States

AGENCY: Fish and Wildlife Service, Interior.

ACTION: Final rule.

SUMMARY: This rule prescribes final frameworks (i.e. the outer limits for dates and times when shooting may begin and end, and for the number of birds which may be taken and possessed) for early season migratory bird hunting regulations from which States may select season dates and daily bag and possession limits for the 1979–80 season. These seasons may open prior to September 29, 1979, and apply to mourning doves, white-winged doves, band-tailed pigeons, rails, woodcock, snipe, gallinules, teal (September only), sea ducks (Atlantic Flyway only), a duck season in late September in Iowa; sandhill cranes in North Dakota and South Dakota, and extended falconry seasons.

DATES: Effective on July 23, 1979. Season selections due from the States by July 26, 1979.

ADDRESS: Season selections from States to: Director (FWS/MBMO), U.S. Fish and Wildlife Service, Department of the Interior, Washington, D.C. 20240.

FOR FURTHER INFORMATION CONTACT: John P. Rogers, Chief, Office of Migratory Bird Management, Department of the Interior, Washington, D.C. 20240, telephone 202–254–3207.

SUPPLEMENTARY INFORMATION: On February 15, 1979, the U.S. Fish and Wildlife Service (hereinafter the Service) published for public comment in the **Federal Register** (44 FR 9928) proposals to amend 50 CFR Part 20, with a comment period ending May 16, 1979. That document dealt with establishment of seasons, limits and shooting hours for migratory game birds under §§ 20.101 through 20.107 of Subpart K. On June 13, 1979, the Service published for public comment in the **Federal Register** (44 FR 34082) the second document in the series consisting of supplemental proposed rulemaking dealing specifically with a number of supplemental proposals arising from comments received on the initial proposals, or from new information. Comment periods on the second document ended or will end as follows: June 21, 1979, for regulations proposed for Alaska, Puerto Rico, and the Virgin Islands; July 13, 1979, for proposed early season regulations; and August 20, 1979, for late season proposals.

On June 21, 1979, a public hearing was held in Washington, D.C., to review the status of mourning doves, woodcock, band-tailed pigeons, white-winged doves, and sandhill cranes. The meeting had been announced in the **Federal Register** on February 15, 1979 (44 FR 9928) and June 13, 1979 (44 FR 34082). Proposed hunting regulations for these species were discussed plus those for common snipe; rails; gallinules; migratory game birds in Alaska, Puerto Rico, and the Virgin Islands; mourning doves in Hawaii; September teal seasons in the Mississippi and Central Flyways; and early duck season in Iowa; special sea duck seasons in the Atlantic Flyway; and falconry seasons. Statements or comments were invited.

On June 28, 1979, the Service also published for public comment in the **Federal Register** (44 FR 37857) the third document in the series consisting of proposed, supplemental, and final rulemaking dealing specifically with proposed frameworks for early season migratory bird hunting regulations from which, when finalized, States may select season dates, shooting hours, and daily bag and possession limits for the 1979–80 season. On June 28, 1979, the Service published in the **Federal Register** (44 FR 37854) the fourth document in the series of proposed and final rulemaking documents dealing specifically with final frameworks for the 1979–80 season from which wildlife conservation agency officials in Alaska, Puerto Rico, and the Virgin Islands could select season dates for hunting certain migratory birds in their respective jurisdictions during the 1979–80 season.

This final rulemaking is the fifth in the series of proposed and final rulemaking documents for migratory game bird hunting regulations and deals specifically with final frameworks for early season migratory game bird hunting regulations from which State wildlife conservation agency officials may select season dates and daily bag and possession limits for the 1979–80 season. These seasons may open prior to September 29, 1979, and apply to mourning doves, white-winged doves, band-tailed pigeons, rails, woodcock, snipe, gallinules, teal (September only), sea ducks (Atlantic Flyway only), ducks in late September in Iowa, sandhill cranes in North Dakota and South Dakota, and extended falconry seasons.

Review of Public Comments and the Service's Response

Various public comments on the proposed early season regulations were received and reviewed during the regulatory development period. The Service replied to public comments on regulations proposed in the **Federal Register** (44 FR 9928) dated February 15, 1979, and in the **Federal Register** (44 FR 34082) dated June 13, 1979. In the June 28, 1979, **Federal Register** (44 FR 37857), the Service responded to recommendations received at the Public Hearing held in Washington, D.C., on June 21, 1979, and to public comments subsequent to publication of the June 13 document.

Seven additional comments on the proposed regulations were received after June 28, 1979. Five of these related to the proposed early hunting season frameworks and are discussed here; the remaining comments concerned late season regulatory proposals. All five comments on early season regulations were submitted by the State conservation agencies, with one agency submitting two letters.

West Virginia expressed support of the proposed regulations. New Jersey supplied information on clapper rail nesting success this summer and recommended that the regulations in effect in 1978 be established this year. Arizona reported that the status of mourning doves was satisfactory, but that call-count surveys and harvest success during the 1978 hunting season indicated that some colonial nesting populations of white-winged doves were below average. The State indicated that some restrictions were contemplated for white-winged doves in portions of Arizona. Details of the restrictions were conveyed to the Service by phone on July 3, 1979. The Service's final frameworks reflect the above information and recommendations.

California submitted two letters, both commenting on the proposed frameworks for band-tailed pigeons. The first questioned the rationale provided by the Service in the **Federal Register** dated June 28, 1979 at 44 FR 37858 for changing the framework to conform with regulations planned by the three Pacific coastal States for 1979.

Response: The Service customarily consults closely with and carefully considers recommendations developed jointly by the three Pacific coastal States regarding annual hunting regulations and management of band-tailed pigeons. It is deemed appropriate that the final frameworks reflect the

results of these consultations and considerations.

The second letter from California requested that consideration be given to permitting a possession limit of 10 band-tailed pigeons rather than 5. Reasons offered for the change include fuel savings for persons traveling long distances to hunt pigeons, and that possession limits for most migratory game birds are twice the daily bag limit.

Response: It is customary for daily bag and possession limits to be the same for band-tailed pigeons in California, Oregon, and Washington. The Service is of the view that increasing the possession limit is inconsistent with this and the recommendation developed cooperatively by the three States for the 1979–80 hunting season.

Comments received are available for public inspection during normal business hours at the Service's office in Room 525 A, Matomic Building, 1717 H Street, NW., Washington, D.C.

Steel Shot Regulations

Non-toxic shot requirements in some areas apply to waterfowl regulations frameworks being finalized here. On July 17, 1979, the Service published in the **Federal Register** (44 FR 41461) final regulations regarding zones in all flyways in which shotshells loaded with steel shot will be required for waterfowl hunting in seasons commencing in 1979. The intended effect of establishing these steel shot regulations is to reduce the number of waterfowl deaths caused by ingesting spent lead pellets.

The regulations appear under 50 CFR, §§ 20.21 and 20.108, and will also be summarized in the Service's regulations leaflets to be published late this summer.

NEPA Consideration

The *Final Environmental Statement for the Issuance of Annual Regulations Permitting the Sport Hunting of Migratory Birds* (FES 75–54) was filed with the Council on Environmental Quality on June 6, 1975, and notice of availability was published in the **Federal Register** on June 13, 1975 (40 FR 25241). An environmental assessment on September dove hunting (42 FR 37552; July 22, 1977) supplemented the discussion on dove hunting in FES 75–54. Another assessment enlarged upon the FES discussion of shooting hours. Several other environmental assessments or statements addressed species or regulatory subjects peculiar to late season regulations and implementation of the non-toxic shot program. Copies of these documents are available from the Service.

Endangered Species Act Consideration

Section 7 of this act provides that, "The Secretary shall review other programs administered by him and utilize such programs in furtherance of the purposes of this Act," and "by taking such action necessary to insure that actions authorized, funded, or carried out * * * do not jeopardize the continued existence of such endangered or threatened species or result in the destruction or modification of habitat of such species * * * which is determined to be critical."

Consequently, the Service reviewed all migratory bird regulations frameworks being contemplated this year for the early seasons (season lengths, limits, shooting hours, and outside dates within which States may select seasons for mourning doves, white-winged doves, band-tailed pigeons, rails, woodcock, snipe, and gallinules; for September teal seasons (including the extra teal option during regular seasons), for sea ducks in certain defined areas of the Atlantic Flyway; for a portion of the regular duck season in Iowa to be taken in late September; for sandhill cranes in designated portions of North Dakota and South Dakota; and special falconry regulations. As a result of intra-Service Section 7 consultation, Acting Director Robert S. Cook concluded in a biological opinion dated July 9, 1979, that the proposed 1979–80 early season migratory bird hunting regulations are not likely to jeopardize the continued existence of the five Endangered species considered, or destroy or adversely modify their Critical Habitat or habitat that might be determined critical in the future. Several actions were recommended as means for furthering the conservation of listed species.

As in the past, hunting regulations this year are designed, among other things, to remove or alleviate chances of conflict between seasons for migratory game birds and the protection and conservation of endangered and threatened species.

The Service's biological opinion resulting from its consultation under Section 7 is considered a public document and is available for inspection in the Office of Endangered Species and the Office of Migratory Bird Management, Department of the Interior.

Regulations Promulgation

The rulemaking process for migratory bird hunting must, by its nature, operate under severe time constraints. However, the Service is of the view that every attempt should be made to give the public the greatest possible opportunity to comment on the regulations. Thus, when proposed rulemaking was published on February 15, June 13, and June 28, the Service established what it believed were the longest periods possible for public comment. In doing this, the Service recognized that at the periods' close, time would be of the essence. That is, if there were a delay in the effective date of these regulations after this final rulemaking, the Service is of the opinion that the States would have insufficient time to select their season dates, shooting hours, and bag limits; to communicate those selections to the Service, and finally to establish and publicize the necessary regulations and procedures to implement their decisions. The Service therefore finds that "good cause" exists, within the terms of 5 U.S.C. 553(d)(3) of the Administrative Procedures Act, and these frameworks will, therefore, take effect immediately upon publication.

Accordingly, the Service under authority of the Migratory Bird Treaty Act of July 3, 1918, as amended, (40 Stat. 755; 16 U.S.C. 701–711), prescribes the final frameworks setting forth the species to be hunted, the daily bag and possession limits, the shooting hours, the season lengths, the earliest opening and latest closing season dates, and special closures, from which State conservation agency selections from State officials, the Service will publish in the **Federal Register** final rulemaking amending certain sections of Subpart K of 50 CFR Part 20 to reflect seasons, limits and shooting hours for the contiguous United States, Alaska, Hawaii, Puerto Rico, and the Virgin Islands for the 1979–80 season.

Authorship

The primary author of this final rule is Henry M. Reeves, Office of Migratory Bird Management, working under the direction of John P. Rogers, Chief.

Final Regulations Frameworks for 1979–80 Early Hunting Seasons on Certain Migratory Game Birds

Pursuant to the Migratory Bird Treaty Act, the Secretary of the Interior has approved final frameworks which prescribe season lengths, limits, shooting hours, and outside dates within which States may select seasons for mourning doves, white-winged doves, band-tailed pigeons, rails, woodcock, snipe, and gallinules; for September teal seasons; for sea ducks in certain defined areas of the Atlantic Flyway; for a portion of the regular duck season in Iowa to be taken in late September; for

sandhill cranes in designated portions of North Dakota and South Datkota; and special falconry regulations. For the guidance of State conservation agencies, these frameworks are summarized below.

Note.—Any State desiring its season on woodcock, snipe, gallinules sandhill crane, or extended falconry to open in September must make its selection no later than July 26, 1979. Those States which desire these seasons to open after September may make their selection at the time they select their regular waterfowl season.

Those Atlantic Flyway coastal States desiring their seasons on sea ducks in certain defined areas to open in September must make their selections no later than July 26, 1979; those which desire this season to open after September may make their selections when they select their regular waterfowl seasons.

Mourning Doves

Between September 1, 1979, and January 15, 1980, except as noted, States may select hunting seasons and bag and possession limits as follows:

Eastern Management Unit (All States east of the Mississippi River and Louisiana):

1. Shooting hours [1] between 12 0'clock noon and sunset daily;

2. Daily bag and possession limits not to exceed 12 and 24, respectively, in all States;

3. Hunting seasons of not more than 70 half-days which may run consecutively or be split into not more than three periods.

4. As an option to the above, *Alabama, Georgia, Louisiana,* and *Mississippi* may zone their States as follows:

A. Two zones per State with the following descriptions or division lines:

Alabama—The South Zone consists of the area south of U.S. Highway 84 running east to the Covington County line, and including Coffee, Covington, Dale, Geneva, Henry, and Houston Counties. The North Zone consists of the remainder of Alabama.

Georgia—U.S. Highway 280 east to Abbeville, thence along Ocmulgee and Altamaha Rivers to the Atlantic Ocean.

Louisiana—Interstate Highway 10 from the Texas State line to Baton Rouge, Interstate Highway 12 from Baton Rouge to Slidell, and Interstate Highway 10 from Slidell to the Mississippi State line.

Mississippi—U.S. Highway 84.

B. Within each zone, these States may select hunting seasons of not more than 70 half-days which may run consecutively or be split into not more than three periods.

C. The hunting seasons in the South Zones of these States may commence no earlier than September 20, 1979.

Central Management Unit (Arkansas, Colorado, Iowa, Kansas, Minnesota, Missouri, Montana, Nebraska, New Mexico, North Dakota, Oklahoma, South Dakota, Texas, and Wyoming):

1. Shooting hours between ½ hour before sunrise and sunset daily;

2. Daily bag and possession limits not to exceed 10 and 20, respectively, in all States;

3. Hunting seasons in all States of not more than 60 full days which may run consecutively or be split into not more than three periods.

4. *Texas* may select hunting seasons for each of two previously established zones subject to the following conditions:

A. The hunting season may be split into not more than two periods.

B. The North Zone may have a season of not more than 60 days between September 1, 1979, and January 22, 1980.

C. The South Zone may have a season of not more than 60 days between September 20, 1979, and January 22, 1980. In that portion of Texas where white-winged dove hunting is allowed, the mourning dove season may be held concurrently with the white-winged dove season and with shooting hours coinciding with those for white-winged doves. However, the remaining days must be within the September 20, 1979–January 22, 1980, period.

5. In *New Mexico,* daily bag and possession limits of mourning and white-winged doves may not exceed 10 and 20, singly or in the aggregate of the two species.

Western Management Unit (Arizona, California, Idaho, Nevada, Oregon, Utah, and Washington):

1. Shooting hours between ½ hour before sunrise and sunset daily;

2. Daily bag and possession limits not to exceed 10 and 20, respectively;

3. Hunting seasons of not more than 50 full days which may run consecutively or be split into not more than three periods.

In the *Nevada* Counties of *Clark* and *Nye,* and in the *California* Counties of *Imperial, Riverside,* and *San Bernardino,* daily bag and possession limits of mourning and white-winged doves may not exceed 10 and 20, respectively, singly or in the aggregate of the two species.

White-Winged Doves

Arizona, California, Nevada, New Mexico, and *Texas* may select hunting seasons between September 1, 1979, and December 31, 1979, and daily bag and possession limits as stipulated below. Shooting hours between ½ hour before sunrise and sunset may be selected.

Arizona may select a hunting season of not more than 23 consecutive days, to run concurrently with the first period of the split mourning dove season. The daily bag and possession limits may not exceed 10 white-winged doves. On the first 3 days of the season, shooting hours will be only from noon until sunset in the following game management units: 24B, 37A, 37C, 39, 42, that portion of unit 20B south of State Highway 74 and the Carefree-Lake Pleasant Road, unit 21 south of the Maricopa-Yavapai County line, unit 24A west of the Apache Junction-Canyon Lake Road (State Highway 88), and unit 41 east of Maricopa-Yuma County line. For the remainder of the season in these units, shooting hours may be from ½ hour before sunrise until sunset as in the remainder of the State.

California may select a hunting season for the Counties of *Imperial, Riverside,* and *San Bernardino* only. The daily bag and possession limits may not exceed 10 and 20 white-winged and mourning doves, respectively, singly or in the aggregate of the two species. Dates, limits, and hours are to conform with those for mourning doves.

Nevada may select a hunting season for the Counties of *Clark* and *Nye* only. The daily bag and possession limits may not exceed 10 and 20 white-winged and mourning doves, respectively, singly or in the aggregate of the two species. Dates, limits, and hours are to conform with those for mourning doves.

New Mexico may select a hunting season with daily bag and possession limits not to exceed 10 and 20 white-winged and mourning doves, respectively, singly or in the aggregate of the two species. Dates, limits, and hours are to conform with those for mourning doves.

Texas may select a hunting season of not more than 5 days for that portion of the State where the species occurs. The daily bag and possession limits may not exceed 10 and 20 white-winged doves, respectively. The season may be split within the overall time frame.

Band-Tailed Pigeons

West Coast States (California, Oregon, and Washington). These States may select hunting seasons not to exceed 30 consecutive days between September 1, 1979, and January 15, 1980. Shooting hours between ½ hour before sunrise and sunset may be selected. The daily bag and possession limits may not exceed 5 band-tailed pigeons.

[1] The hours noted here and elsewhere also apply to hawking (taking by falconry).

California may zone by selecting hunting seasons of 30 consecutive days for each of the following two zones:

1. In the Counties of *Alpine, Butte, Del Norte, Glenn, Humboldt, Lassen, Mendocino, Modoc, Plumas, Shasta, Sierra, Siskiyou, Tehama,* and *Trinity;* and

2. The remainder of the State.

Four-Corners States (Arizona, Colorado, New Mexico, and Utah). These States may select hunting seasons not to exceed 30 consecutive days between September 1 and November 30, 1979. Shooting hours between ½ hour before sunrise and sunset may be selected. The daily bag and possession limits may not exceed 5 and 10, respectively. These seasons shall be open only in the areas delineated by the respective States in their hunting regulations. Each hunter must have been issued and carry on his person while hunting band-tailed pigeons a valid band-tailed pigeon hunting permit issued by the respective State conservation agency and such permit will be valid in that State only.

New Mexico may divide its State into two zones, along a line following U.S. Highway 60 from the Arizona State line east to Interstate Highway 25 at Socorro and along Interstate Highway 25 from Socorro to the Texas State line. Between September 1, 1979, and November 30, 1979, in the North Zone, and October 1, 1979, and November 30, 1979, in the South Zone, hunting seasons not to exceed 20 consecutive days in each zone may be selected by New Mexico.

Rails

(Clapper, King, Sora, and Virginia)

The States included herein may select seasons between September 1, 1979, and January 20, 1980, on clapper, king, sora, and Virginia rails as follows:

The season length for all species of rails may not exceed 70 days.

Shooting hours between ½ hour before sunrise and sunset in all States for all species may be selected.

Clapper and King Rails

1. In *Rhode Island, Connecticut, New Jersey, Delaware,* and *Maryland,* the daily bag and possession limits may not exceed 10 and 20 clapper and king rails, respectively, singly or in the aggregate of these two species.

2. In *Texas, Louisiana, Mississippi, Alabama, Georgia, Florida, South Carolina, North Carolina,* and *Virginia,* the daily bag and possession limits may not exceed 15 and 30 clapper and king rails, respectively, singly or in the aggregate of the two species.

3. The season will remain closed on clapper and king rails in all other States.

Sora and Virginia Rails

In addition to the prescribed limits for clapper and king rails, daily bag and possession limits not exceeding 25, singly or in the aggregate of sora and Virginia rails, are prescribed in States in the Atlantic, Mississippi, and Central Flyways, and portions of Colorado, Montana, New Mexico, and Wyoming in the Pacific Flyway.[2, 3]

No hunting season is prescribed for rails in the remainder of the Pacific Flyway.

Woodcock

States in the Atlantic, Mississippi, and Central Flyways may select hunting seasons between September 1, 1979, and February 28, 1980, of not more than 65 days, with daily bag and possession limits of 5 and 10, respectively, except that in *Maine, New Hampshire, Massachusetts, Rhode Island, Connecticut, New York, New Jersey, Delaware, Maryland,* and *Virginia* the season must end by January 31. Shooting hours may be selected between ½ hour before sunrise and sunset. Any State may split its woodcock season without penalty.

New Jersey may select experimental woodcock seasons by north and south zones divided by State Highway 70. Seasons in each zone may not exceed 55 days.

Common Snipe

States in the Atlantic, Mississippi, and Central Flyways may select hunting seasons between September 1, 1979, and February 28, 1980, not to exceed 107 days, except that in *Maine, New Hampshire, Massachusetts, Rhode Island, Connecticut, New York, New Jersey, Delaware, Maryland,* and *Virginia* the season must end no later than January 31. Seasons between September 1, 1979, and February 28, 1980, and not to exceed 93 days, may be selected in the Pacific Flyway portions of Montana, Wyoming, Colorado, and New Mexico.

All States in the Pacific Flyway, except those portions of Colorado, Montana, New Mexico, and Wyoming in the Pacific Flyway, must select their snipe seasons to run concurrently with their regular duck seasons. In these Pacific Flyway States, except portions of the four States noted previously, it will be unlawful to take snipe when it is unlawful to take ducks.

Shooting hours between ½ hour before sunrise and sunset may be selected. Daily bag and possession limits may not exceed 8 and 16, respectively. Any State may split its snipe season into two segments without penalty. States or portions thereof in the three eastern Flyways may defer selections of snipe seasons at this time and make the selections in August when they select waterfowl seasons. In that event, the daily bag and possession limits will remain the same but shooting hours must conform with those for waterfowl.

Gallinules

States in the Atlantic, Mississippi and Central Flyways may select hunting seasons between September 1, 1979, and January 20, 1980, of not more than 70 days. States in the Pacific Flyway must select their hunting seasons within the waterfowl seasons. States may split their seasons without penalty. Shooting hours between ½ hour before sunrise and sunset may be selected. The daily bag and possession limits may not exceed 15 and 30, respectively.

States may select their gallinule seasons at the time they select their waterfowl seasons. If the selection is deferred, daily bag and possession limits will remain the same, but shooting hours must conform with those for waterfowl, and the season length will be the same as that for waterfowl, or 70 days, whichever is the shorter period. Exception: A gallinule season selected by any State in the Pacific Flyway may not exceed its waterfowl season, by at least 1 mile of open water from any shore, island, and emergent vegetation in *New Jersey, South Carolina,* and *Georgia;* and in any waters of the Atlantic Ocean and in any tidal waters of any bay which are separated by at least 800 yards of open water from any shore, island, and emergent vegetation in *Delaware, Maryland, North Carolina,* and *Virginia;* and provided that any such areas have been described, delineated, and designated as special sea duck hunting areas under the hunting regulations adopted by the respective States. In all other areas of these States and in all other States in the Atlantic Flyway, sea ducks may be

[2] The Central Flyway is defined as follows: Colorado (east of the Continental Divide), Kansas, Montana (east of Hill, Chouteau, Cascade, Meagher, and Park Counties), Nebraska, New Mexico (east of the Continental Divide but outside the Jicarilla Apache Indian Reservation), North Dakota, Oklahoma, South Dakota, Texas, and Wyoming (east of the Continental Divide).

[3] The Pacific Flyway is defined as follows: Arizona, California, Idaho, Nevada, Oregon, Utah, and Washington; those portions of Colorado and Wyoming lying west of the Continental Divide; New Mexico west of the Continental Divide plus the entire Jicarilla Apache Indian Reservation; and in Montana, the counties of Hill, Chouteau, Cascade, Meagher, and Park, and all counties west thereof.

taken only during the regular open season for ducks.

The daily bag limit is 7 and the possession limit is 14, singly or in the aggregate of these species. During the regular duck season in the Atlantic Flyway, States may set, in addition to the regular limits, a daily limit of 7 and a possession limit of 14 scoter, eider, and oldsquaw ducks, singly or in the aggregate of these species.

Shooting hours between ½ hour before sunrise until sunset daily may be selected.

Any State desiring its sea duck season to open in September must make its selection no later than July 26, 1979. Those States desiring their sea duck season to open after September may make their selection at the time they select their waterfowl seasons.

In no instance shall the total number of days in any combination of duck seasons (regular duck season, sea duck season, September teal season, special scaup season, special scaup and goldeneye season, or special falconry season) exceed 107 days for any geographical area.

September Teal Season

Between September 1 and September 30, 1979, an open season on all species of teal may be selected by *Alabama, Arkansas, Colorado* (Central Flyway portion only), *Illinois, Indiana, Kansas, Kentucky, Louisiana, Mississippi, Missouri, New Mexico* (Central Flyway portion only), *Ohio, Oklahoma, Tennessee,* and *Texas* in areas delineated by State regulations.

Shooting hours are from sunrise to sunset daily. The season may not exceed 9 consecutive days with a bag limit of 4 teal daily and 8 in possession. States must advise the Service of season dates and special provisions to protect non-target species by July 26, 1979.

In no instance shall the total number of days in any combination of duck seasons (regular duck season, sea duck season, September teal season, special scaup season, special scaup and goldeneye season, or falconry season) exceed 107 days for any geographical area.

Late September Duck Season in Iowa

Iowa is offered the option of opening a portion of its duck hunting season in September, with the number of days in September to be deducted from the number of days allowed for the regular duck season. All ducks which are legal during the regular duck season may be taken during the September segment of the season. The option, if selected, will be implemented as a trial over a 3-year period and subject to an evaluation of resulting population and harvest data. In 1979, the 5-day early season option will extend from September 22 through September 26, with daily bag and possession limits being the same as those in effect during the 1979 regular duck season. Iowa must advise the Service by July 26, 1979, if it wishes to select this option.

Special Falconry Regulations

Falconry is a permitted means of taking migratory game birds in any State meeting Federal falconry standards in 50 CFR 21.29(k). These States may select an extended season for taking migratory game birds in accordance with the following:

1. Seasons must fall within the regular season framework dates and, if offered, other special season framework dates for hunting.

2. Season lengths for all permitted methods of hunting within a given area may not exceed 107 days for any species.

3. Hunting hours shall not exceed ½ hour before sunrise to sunset.

4. Falconry daily bag and possession limits for all permitted migratory game birds shall not exceed 3 and 6 birds, respectively, singly or in the aggregate, during both regular hunting seasons and extended falconry seasons.

5. Each State selecting extended seasons shall report the results of the special falconry season to the Service by March 15, 1980.

6. Each State selecting the special season must inform the Service of the season dates and publish said regulations.

General hunting regulations, including seasons, hours and limits, apply to falconry in each State listed in 50 CFR 21.29(k) which does not select an extended falconry season.

Exception from Executive Order 12044 and 43 CFR 14—

As discussed in the **Federal Register** dated February 15, 1979 (44 FR 9929), the Assistant Secretary for Fish and Wildlife and Parks has concluded that the ever decreasing time frames in the regulatory process are mandated by the Migratory Bird Treaty Act and the Administrative Procedure Act. The regulatory process simply has no remaining slack in its timetable between the accumulation of critical summer survey data and the publication of the revised sets of proposed rulemakings. Compliance with the determination of significance and regulatory analysis criteria established under Executive Order 12044 would simply not be possible if the fall hunting season deadlines are to be achieved.

Consequently, the Assistant Secretary for Fish and Wildlife and Parks has approved the exemption of these regulations from the procedures of Executive Order 12044 and 43 CFR 14 which is provided for in section 6(b)6 and § 14.3(f), respectively.

Dated: July 18, 1979.

Lynn A. Greenwalt,

Director, U.S. Fish and Wildlife Service.

[FR Doc. 79-22717 Filed 7-23-79; 8:45 am]

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Tuesday
July 24, 1979

Part IV

Department of Health, Education, and Welfare

Public Health Service

National Toxicology Program; Meeting

DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE

Public Health Service

National Toxicology Program; Meeting

The Director of the recently established National Toxicology Program (NTP) announces an open meeting on August 10, 1979, for the purposes of presenting an overview of the FY 1979 Annual Plan, receiving comments and questions on the Annual Plan and the future directions of the NTP, and receiving recommendations for compounds to be tested in the future. Part I of the FY 1979 Annual Plan, describing the NTP's current year efforts and resources, is printed in its entirety immediately following this announcement. Part II of the Plan is a "Review of Current DHEW Research Related to Toxicology" and is available upon request.

Copies of the complete Annual Plan, Parts I and II, as well as copies of the Program's establishment document referred to in the **Federal Register**, November 15, 1978, pp. 53060–53061, can be obtained by calling: Ms. Leslie Gardner at (919) 541–3267 or FTS 629–3267.

The meeting will begin at 10:00 a.m. and will be held in the main auditorium of the HEW North Building, 330 Independence Avenue, S.W., Washington, D.C. Dr. David P. Rall, Director of the National Toxicology Program, and key staff from the participating HEW agencies in the NTP will describe the FY 1979 Annual Plan and the agency resources dedicated to the NTP. Dr. Eula Bingham, Assistant Secretary of Labor for Occupational Safety and Health, and Chairman of the NTP's Executive Committee will briefly describe the role of the light-member Executive Committee. Executive Committee members will attend as schedules permit.

Key NTP agency staff will be available to receive comments and questions from the public from 11:00 a.m. to 12:00 noon and from 1:00 p.m. to 5:00 p.m. unless the comments from those in attendance have been received prior to that time.

It is requested that persons planning to attend the August 10, 1979, meeting give advance notice to: Ms. Leslie Gardner (telephone: (919) 541–3267 or FTS 629–3267), National Toxicology Program, P.O. Box 12233, Research Triangle Park, N.C. 27709.

All written comments on the Annual Plan are welcome and will be received and considered through August 17, 1979. All written comments as well as requests for additional information regarding this meeting should be addressed to: Dr. David P. Rall (telephone: (919) 541–3201 or FTS 629–3201), Director, National Toxicology Program, P.O. Box 12233, Research Triangle Park, N.C. 27709.

Dated: July 18, 1979.

David P. Rall,

Director, National Toxicology Program.

Department of Health, Education, and Welfare; National Toxicology Program

Annual Plan for Fiscal Year 1979

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Department of Health, Education, and Welfare; National Toxicology Program

Annual Plan for Fiscal Year 1979

Background

On November 15, 1978, Secretary Califano announced the establishment of the National Toxicology Program. The broad goal of this Program is to strengthen the Department's activities in the testing of chemicals of public health concern as well as in the development and validation of new and better integrated test methods. Specific goals for the Program are:

(1) To broaden toxicological characterization of those chemicals being tested.

(2) To increase the rate of chemical testing, within the limits of available resources.

(3) To develop and begin to validate a series of protocols more appropriate for regulatory needs.

To accomplish these goals the Program was established as a Departmentwide effort to provide needed information to regulatory and research agencies and to strengthen the science base. The Program is at present comprised of the relevant activities of the Food and Drug Administration (FDA), the National Cancer Institute (NCI), the Center for Disease Control/National Institute for Occupational Safety and Health (CDC/NIOSH), and the National Institute of Environmental Health Sciences (NIEHS). It will be planned, programmed, and carried out as a coordinated whole under the direction of Dr. David P. Rall who will continue to serve as Director, National Institute of Environmental Health Sciences and for the purpose of this Program reports to the Assistant Secretary for Health. The resources available to the Program in FY 79 are dedicated by components of the FDA, NCI, NIEHS, and NIOSH and total to $41,000,000.

Central to the effective planning, coordination and operation of the National Toxicology Program is the development and approval of an annual plan.

This plan is to include:

A review of current DHEW research as it relates to toxicology.

Specification of the Program activities and resources to be managed by the Program Director:

Current toxicology testing capacity (i.e. Dollars, positions, and space) and how that capacity is being utilized.

Amount of test capacity which may be available in the coming year.

Plans for test development and validation of test systems which take into account research opportunities and needs of the field.

The compounds to be tested, the test procedures to be followed, and a schedule for the tests.

The regulatory and scientific opportunities which were considered in the development of the plan.

Recommendations of the Program Director as to the resources needed for the Department's toxicology program capacity. (This section will first be

included in the second plan, to be completed by September 1, 1979.)

Introduction

The National Toxicology Program will, in its first year of operation, identify the unifying themes that exist in the current toxicology programs of the four NTP research agencies. The first year's operation, will bring about several adjustments that move toward fulfillment of the broad Program objectives. In the four months since establishment of the Program, it has become clear that several of the toxicological programs which were at various stages of development in the individual agencies were designed to achieve closely similar goals. Integrating these important activities will provide added impetus to the Program's goals during the first year of operation. In addition, several new initiatives were developed and will be implemented because of opportunities provided by the existence of the NTP. These new and revitalized initiatives, along with the ongoing toxicological activities of the four NTP agencies, are described in the first Annual Plan. Because of the limited time available to prepare the first Annual Plan, it was possible to incorporate only brief descriptions of planned activities. A more detailed presentation of NTP activities will be contained in the second Annual Plan, to be developed for September 1, 1979.

One of the major objectives of the NTP is to create stronger links between research devoted to the development and validation of new or improved toxicological methods and the needs of the regulatory community for such methods. There is the additional objective of ensuring efficient and proper toxicological evaluation of substances that may pose a threat to the public health and which, therefore, may require regulation. Meetings of the Executive Committee and Committee staff have led to the identification and prioritization of compounds to be subjected to toxicological evaluation and to the specification of several areas of research in methods development and validation that are considered of central importance to both the research and the regulatory agencies. Thus, the major objectives of the NTP will begin to be realized immediately.

In addition, during the first year several management functions common to many Program activities, and heretofore carried out somewhat independently by the member agencies, will be centralized, thereby increasing the efficiency of operating HEW's toxicology programs. Among the common functions to be centralized are: chemical intelligence; data management and analysis; laboratory animal production and quality control; chemical repository; and technical information and reports.

A major initiative will be the creation of a management function that insures that the quality of the Program's initiatives are consistent with good laboratory practices.

The toxicology activities of the NTP agencies are moving in directions generally consistent with Program objectives. The goal of the first year is to isolate activities that can be made to move quickly toward Program objectives. During this process dialogue between research and regulatory scientists will increase and this is critical to the Program's success because it is not always readily apparent if and how specific forms of research will serve a regulatory need. Only through such a dialogue will new ideas for research develop. And it is only through the development of such ideas that new program initiatives, and the resource shifts they will require, can be put into place.

The Director has established an internal Steering Committee to advise him on direct Program operation and prioritization. It is composed of the Deputy Director, NTP (Dr. J. Moore), and the science program leaders of the contributing agencies: Acting Director, NCTR (Dr. T. Cairns); Acting Scientific Director, NIEHS (Dr. D. Hoel); Associate Director, Carcinogenesis Testing Program, NCI (Dr. R. Griesemer); and Director, Division of Biomedical and Behavioral Science, NIOSH (Dr. E. Harris).

Chemical Selection and Intelligence

The development of lists of chemicals to be tested is a most important task if the resources available to the NTP are to be effectively utilized. Each agency represented on the Executive Committee was asked to propose testing initiatives and to participate in the ordering of chemicals. The principles for selection of these compounds included such factors as estimated or known extent and intensity of human exposure, estimated or known severity of toxicological effects, and the scientific needs to compare testing methodologies and to study structure activity relationships. The NTP is concerned about its appropriate role in Government sponsored testing as it relates to the responsibility of the private sector to bear the burden of chemical testing as mandated by specific Federal laws or statutes. The NTP is in the process of developing a set of principles for selecting chemicals that will incorporate the previously listed factors and concerns.

The selection of a chemical does not *a priori* commit it to testing by NTP. It does commit the NTP to ascertain the specific toxicologic and regulatory concerns, evaluate the adequacy of existing data or current efforts in Government, academic, or private laboratories, and then propose and conduct specific test(s) that are needed.

A single focus for this activity has been established to insure the future provision of a standard base of information on each chemical nominated. This standard base of information will include chemical name, Chemical Abstract Series (CAS) No., commercial formulations, use(s), human exposure, known or suspected health effects, existence, and adequacy, of relevant toxicologic data and specific areas of needed toxicologic research. Once a chemical has been selected for testing, this group will provide the pertinent science information for proper design of the test protocol. Existing data resources will be utilized for these activities.

Data Management and Analysis

The National Toxicology Program needs are: 1) data acquisition, storage, and retrieval, 2) data reduction and analysis, and 3) management tracking and control.

Data Acquisition, Storage and Retrieval. The most complex and highest priority need is data management of lifetime bioassays. Current systems lack an automated data input system and quality control features at the testing laboratory. The NTP has selected the developing TDMS (Toxicology Data Management System), a modular system, for continued prototype development and on-line installation at three laboratory facilities in early 1980 with additional installations also projected later in the year.

Data management in the area of mutagenesis is the next highest priority because of the potentially large quantities of data to be generated. Existing and developing systems will be used.

Management Information. High priority is given to early development of a simple system that should provide on-line information on chemicals selected for testing, the nature of the test(s) and test status.

Data Analysis. Appropriate statistical methodologies for data analysis of microbial mutagenesis and teratology

assays are to be developed in FY 79. The statistical methodologies used for carcinogenicity data will be reviewed and will require considerable methodologic research. Methodologies for statistical analyses of other toxicology data will be reviewed and revised, as necessary, as routine testing capability is initiated.

Laboratory Animal Production and Quality Control

The $B_6C_3F_1$ mouse and Fischer 344 rat will continue to the principal test species. Animal production resources will continue to be developed and maintained to provide animals to chemical testing laboratories. Basic standards for husbandry and care as they specifically relate to toxicology testing are also being developed. A standard controlled, open formula test diet is to be selected and incorporated into the test protocols.

Although the current NTP strains provide meaningful toxicology and carinogencity data, the test animal is such a vital selection in experimental design that an evaluation of the continued utility of these or other rat and mice strains is planned. The $B_6C_3F_1$ mouse and Fischer 344 rat are genetically uniform (isogenic) strains which is a desirable trait for toxicity testing. It has been proposed that the use of several isogenic strains in a bioassay would provide a better extrapolation base than the use of a single strain. The statistical power of data developed in several isogenic strains appears to be equivalent to, and may exceed, current practices of using single strains. A course of study to develop and validate a series of experimental designs using multiple isogenic strains is planned.

Chemical Repository

A central repository for chemicals tested by the NTP will be established from which the procurement, analyses, distribution, reference archiving, and quality assurance of chemicals during test use will be directed. The operation of a variety of existing capabilities will be integrated for the performance of this activity.

Technical Information and Reports

The Annual Plan describes research dealing with the testing of more than 500 chemicals, with many being utilized in a variety of tests. The chemical selection process should lead to the Program testing chemicals or validating methods that are of significant scientific and regulatory interest; therefore, these results need to be promptly communicated. In developing a mechanism for the orderly processing and announcement of NTP research, the use of established "online" computer systems as an adjunct to published documents is being considered as is the feasibility of using the capabilities of the Toxicology Information Program, and the National Library of Medicine.

A high priority is to establish a process for scientific review of the adequacy of the test data developed by the NTP.

The NTP will continue to develop the Environmental Mutagen Information Center (EMIC) and the Environmental Teratology Information Center (ETIC). The development of online extracts of the ETIC entries is scheduled to commence in late 79. Priority of extract preparation will be given to those chemicals of interest to the NTP.

Teratology

Chemical teratology testing traditionally has focused on detecting anatomical malformations that occur during *in utero* development through the systematic examination of the fetus (by the naked eye or low magnification) for organ, limb, or skeletal abnormalities. Analysis and interpretation attempts to discriminate between effects caused by maternal toxicity, fetal toxicity, or death. In recent years experiments have clearly identified that functional abnormalities without gross malformations can result from chemical exposure during development; behavioral abnormalities are a principal example. Several foreign countries have recently imposed general requirements for behavioral teratology; the Toxic Substances Control Act may also mandate such testing. Therefore, it is imperative that the relevance and validity of behavioral teratology test procedures be established. The NTP will coordinate and conduct a collaborative validation of test procedures.

It is proposed that 4–6 test methods, which appear to have the greatest potential utility, will be utilized in six laboratories using standard chemicals. Recommendations concerning the incorporation of behavioral teratology methods into reproduction and teratology testing guidelines should be possible, based on the results of these studies. This project will encompass 2–3 years.

Current methods do provide meaningful data about the teratogenic potential of chemicals. To insure that all scientific data gathered during these evaluations are most effectively utilized, a selected analysis of chemicals, for which there is definitive human and animal teratology information, is being performed.

In addition, existing laboratory data bases will be examined to determine the range of dose parameters that indicate linearity of response and permit the development or identification of appropriate biomathematical procedures for low dose risk estimation.

A systematic histopathologic examination of fetuses will be conducted and compared with the results obtained using traditional methods as part of the teratology testing of 8–10 coded chemicals. Chemicals selected for teratologic evaluation are listed in Table 1; additional nominations are listed in Table 2.

Mutagenesis

Mutagenicity assays should identify structural or functional DNA disturbances in germ or somatic cells. The former is of interest for predicting potential undesirable effects on fertility, the developing conceptus, or in generations subsequent to that which received chemical exposure. Somatic mutation may predict physiologic alterations in the exposed person and the potential for cancer.

A major goal is to establish a battery or matrix of procedures which, when used as a prescreen, can aid in establishing priorities for indepth animal studies.

A systematic evaluation of the utility and predictive value of various *in vitro* test systems will continue. Specifically, these efforts are directed toward:

1) Development, definition and standardization of methods for routine testing.

2) Determination of the intralaboratory and interlaboratory reproducibility of defined protocols.

3) Evaluation of tests using coded chemicals and representing different chemical classes of known mutagenic activity.

A *Salmonella*/microsome plate assay has been standardized and found to yield reproducible results within and between several laboratories. This protocol uses *Salmonella typhimurium* strains TA 1535, 1537, 1538, 98 and 100 with and without metabolic activation. The liver S–9 preparations are prepared from both uninduced and Arochlor 1254 induced Fischer 344 rats, $B_6C_3F_1$ mice or Syrian hamsters. A series of 45 chemicals (Table 3) which have been tested by lifetime bioassays in Fischer 344 rats and $B_6C_3F_1$ mice, and for which stable lots of the original chemical are available, are to be assayed. The purpose of the testing is to determine whether the same type of species

variation observed in the animal bioassays will be detected in the mutagenicity assays. Each chemical will be tested under code in four laboratories which will further establish the interlaboratory reproducibility.

Other assays being developed or validated include *Escherichia coli* WP2 uva, pol A+ and pol A and the mammalian systems L5178Y mouse lymphoma [TK+/locus] and ARL6 rat liver.

Using the validated standardized assays, an *in vitro* testing capability has been established using *Salmonella typhimurium* strains TA 1535, 98, 1537, and 100 (with and without metabolic activation). A total of 180 chemicals will be tested in the remainder of FY 79. The planned capacity for testing in FY 80 is 300. The chemicals selected for assay are listed in Table 4. Chemicals selected for extensive toxicologic characterization, including carcinogenicity (Table 9), will be priority additions to this list.

An *in vitro* mammalian cytogenetics capability (chromosome aberration including sister chromatid exchange) will be established in FY 79. System validation will be required and it is planned to test 45 chemicals in FY 80 assuming successful validation. The goal is to expand this capability so that it can become an integral part of the initial screen along with the *Salmonella* assays.

The determination of mutagenicity can range from a set of tests which merely alert as to mutagenic potential to more extensive tests which firmly establish the presence (or lack) of mutagenicity and specify the specific type of genetic lesion produced. When large numbers of chemicals are to be tested, it is not feasible to employ an entire battery of tests simultaneously; thus, it is planned to apply a sequential array of tests. The current initial screens are the *S. typhimurium* assays previously described and the *in vitro* cytogenetic assay if validated. Chemicals that are mutagenic in these assays will be subject to further testing. (Selected chemicals that are negative in the initial screen may receive further testing, taking into account such factors as known biologic activity of related compounds and level of human exposure.) The second sequence of testing will utilize *Drosophila spp.* which possesses some inherent chemical metabolism capability and can provide more precise information on the types of mutations induced, the time course of induction, and, in addition, demonstrate heritability of the induced mutation. Regular test capability in *Drosophila* will be established in FY 79 with an aim being the assay of 20 chemicals per year commencing in FY 80.

Eighteen chemicals (Table 5) are to be tested in rats for *in vivo* mutagenic activity using a dominant lethal assay, bone marrow karyotyping or sperm abnormality evaluation. Selective use of *Drosophila* recessive lethal and unscheduled DNA repair in human cell lines is also planned. Some of these tests also have utility for assessing reproductive function.

The NTP has assumed support and participation in an international collaborative study, under the auspices of the International Association of Environmental Mutagen Societies, with the objective of systematically evaluating a range of mutagenicity assay systems for their ability to predict chemical carcinogenicity. The responses of approximately 25 assay systems will be determined for 42 coded reference carcinogens and noncarcinogens. The chemicals to be tested and the assay systems to be employed are listed in Table 6 and 7, respectively. All assays are to be completed in FY 79 with decoding and combined analysis scheduled for the first quarter of FY 80.

The assessment of mutagenic risk to future generations with our current state of knowledge must utilize whole mammal experiments on heritable damage. There are examples of noncorrelation between microbial tests and of heritable effect determinations in the mouse. An NTP goal is to develop a logic for the proper use and utility of *in vivo* mammalian genetic tests. The heritable translocation assay will be further evaluated in this regard. Other methods that need evaluation or development involve the role of repair in mammalian mutation induction and the role of the female in determining heritable mutagenic risk.

Carcinogenesis

A lifetime bioassay in rodents is the current procedure utilized to determine carcinogenic potential of a chemical. The NTP does not propose alternative methods but acknowledges a need in the longer term, to develop or validate less expensive and more rapid methods that may in some instances supplant the need for lifetime bioassays.

Mammalian cell transformations are potential short-term assays that indicate carcinogenic potential of a chemical. Transformation assays being evaluated include BALB/c 3T3, Fischer Rat Embryo (RLV infected), Hamster embryo, and C3H 10T½. In this effort the first 15 chemicals listed in Table 3 will be tested for transforming potential in the hamster embryo clonal assays and in the BALB/c 3T3 focus assay.

The results of *Salmonella* assays will be considered in prioritizing the order in which a chemical may be tested in lifetime bioassays. Other assays, once validated, that will augment the microbial assays, include cell transformation, or other *in vitro* and *in vivo* assays described in the mutagenesis segment of the Annual Plan.

A substantial body of literature exists related to short term *in vivo* carcinogenicity testing, but no model is sufficiently validatd to be applied to the routine testing of chemicals. One model, the mouse lung adenoma system, is sufficiently developed to be selected for indepth validation. During FY 79 a validation protocol will be developed for contract award and initiation. Seventy-five to 100 chemicals will be selected, giving preference to those chemicals for which adequate lifetime bioassay data exist, or are in progress, with selections balanced to insure a broad representation of chemical classes. The results of this study, along with *in vitro* microbial mutagenesis data and findings of lifetime rodent bioassays, will be compared in evaluation of the mouse lung adenoma system.

Rat liver assay systems will also be reviewed in order to determine what specific areas of methods development need to be pursued.

A literature search and analysis will permit comparison of the results of animal bioassays and mutagenesis tests with results of mouse lung, skin painting and subcutaneous assays. Particular attention will be given to: a) the concordance of *in vitro* fibroblast transformation and subcutaneous sarcoma formation, and b) to skin tumor production in Syncar versus non-Syncar mice. The results of this analysis will be considered in developing NTP initiatives for FY 80.

There are diferent viewpoints as to what constitutes the best design of lifetime bioassays. Areas of differing opinion include choice of species and strain, age at exposure, route of exposure, number of doses tested, dose levels, and of methods used in analysis. An NTP priority is to review and possibly revise the current lifetime bioassay design consistent with the projected use of the bioassay results.

Carcinogenicity testing traditionally begins with young adult animals (typically six-week old rodents). Human chemical exposures may include the period of *in utero* development and infancy as well as continued lifetime

exposure. These exposures occur through exposure of pregnant workers, use of drugs, and long-term accumulation and persistence of certain chemicals in the mother's body with secretion in milk. The adequacy of lifetime bioassay methods versus methods that also include prenatal and neonatal exposures is being evaluated. Four chemicals will be tested; polychlorinated biphenyl (Arochlor 1254) and phenytoin have been selected with 2 additional chemcials to be selected and testing started in FY 79.

The carcinogenic potential of chemical combinations has been described, the conversion of heterocyclic secondary amines to nitrosamines in the presence of NO_2 (N_2O_4) being a recent example. The ubiquity of NO_2 and the widespread distribution of heterocyclic amines prompt the hyothesis that some neoplastic diseases may be a consequence of *in vivo* interaction with these chemicals. A test of the hypothesis is planned in an animal bioassay using NO_2 exposure by inhalation and heterocyclic amine (2,6 dimethylmorpholine) exposure by the oral route.

Lifetime inhalation bioassays for carcinogenicity usually involve a duration of exposure that is arbitrarily determined. The specialized facilities required for inhalation studies are expensive and commit limited technical manpower and resources for extended periods of time. A study with rats, mice and hamsters is in progress that uses a design that varies the age of animals exposed and the duration of exposure to vinyl chloride, a known carcinogen. The objective of the study is to provide data that permit a species comparsion of tumor response and an analysis of the exposure regimens that provide a predicted carcinogenic response. The data may indicate that a period of exposure of less duration than is currently employed will provide a meaningful bioassay resut. These studies are projected for completion in FY 80.

The National Toxicology Program assumed responsibility for 147 chemicals being tested for carcinogenic potential in lifetime rodent bioassays (Table 8). Draft reports on 13 of these chemicals are expected to be completed in FY 79 and formally issued in early FY 80. An additional 106 chemicals have been selected for extensive toxicologic and carcinogenic evaluation (Table 9). Resources will permit testing to commence on 60 of these chemicals in FY 79 with testing of the remaining chemicals scheduled for FY 80. There are 104 chemicals (Table 10) that have been nominated for testing which will be evaluated for selection according to the procedures described on page 3 of the Annual Plan. Chemical nomination and selection is a continual process.

Toxicology

Chemicals selected for extensive toxicologic characterization (Table 9) will usually be evaluated in a series of acute and subacute experiments followed by chronic (lifetime) experiments when *in vivo* carcinogenicity data is desired. In the former experiments a core of traditional toxicology data will be recorded with additional screening efforts incorporated in such areas as neurobehavior, fertility and reproduction, immunotoxicology, renal toxicity and respiratory function as indicated by specific health concerns, toxicities associated with related chemicals, etc. When extensive toxicologic efforts are conducted, dose related data on absorption, disposition and metabolism will be collected.

A second initiative is to develop, validate and implement procedures for characterization of specific toxic parameters such as neurobehavior, pulmonary function, immunobiology and fertility and reproduction. Descriptive narrations of the major NTP toxicology initiatives are decribed below.

Behavioral Toxicology. Laboratories within the National Toxicology Program are actively engaged in the development of new methods and in the routine use of existing methods for testing the behavioral and neurological effects of a variety of toxic agents. However, the capacity for evaluating compounds is limited. The number of compounds can be substantially increased only through the contract mechanism. A battery of screening tests which will reflect the entire range of potential behavioral and neurologic tests and are sensitive and predictive for humans is needed. A basic test battery is currently being validated; in the interim, this test battery is being selectively used for chemical screening.

Specific experiments that characterize the nature of the effect and provide dose response data are planned for 16 select chemicals for which there is evidence of behavioral or neurological effects. These chemical are listed in Table 11.

Immunology. A number of chemicals have been found to cause immuno-suppression, with cell mediated immunity and the developing immune systems at particular risk. Several conferences have recently addressed this topic, and, whereas there is general agreement on the immune parameters to be assessed, there is considerable difference of opinion regarding the most appropriate techniques to be employed. The NTP will begin the development and validation of an immunology test battery as well as continue studies that estabish the role of immune assessment in toxicologic characterization.

Clinical Chemistry. A variety of tests have been utilized as indicators of organ function. The tests, in many instances, lack the sensitivity to detect deleterious effects at levels below those which are detectable through gross and histopathologic examination. A program will begin to identify more sensitive methods for detection of injury and subsequently aim at the development of inexpensive, accurate and automated methods that can be incorporated into routine testing procedures. Tests that assess hepatic and renal function will be emphasized initially.

Chemical Distribition and Metabolism. Specific isomers of the complex polychlorinated biphenyl mixture have been the subject of pharmacokinetic studies in several species (rat, dog, and Rhesus money). Results of current studies indicate a marked difference in the ability of the monkey to metabolize or excrete some of the more toxic isomers as compared to the rodent. These studies will be extended and will attempt to provide data that may suggest the appropriate laboratory species from which to extrapolate dose response data in assessing human risk.

Toxicology studies with chlorinated dibenzofurans indicate species variability as to the dose that causes toxic effects. Basic distribution and metabolism studies with $_{14}C$ labeled 2,3,7,8 TCDF will seek to establish if species difference is due to variation in chemical distribution, metabolism or excretion. These data should provide a logical means for selecting appropriate species for possible teratology and carcinogenicity studies.

Recent studies indicate that some benzidine derived dyes are metabolized with the formation of benzidine as a metabolite. Benzidine is a carcinogen. Additional benzidine derived dyes will be studied to determine if the formation of benzidine as a metabolite is typical of several classes of benzidine derived dyes.

Pulmonary and Cardiovascular Toxicity. The NTP has significant capacity for inhalation research and testing. A majority of the work that assesses cardiovascular and pulmonary toxicity is performed in NTP laboratories, whereas the inhalation exposures to assess carcinogenic

potential are performed by contract. The NTP recognizes the need to expand toxicologic assessment of inhaled chemicals to other than NTP laboratories. Methods development and validation is planned.

Chronic inhalation studies on the cardiovascular effects of methyl bromide will continue. Acute or chronic studies on pulmonary response are planned for four epoxides: butylene oxide, ethylene oxide, propylene oxide, and styrene oxide.

Lung fibrogenesis as a consequence of fibers and dusts is a major health concern. A variety of methods are being utilized in an attempt to assess fibrogenic effects including histophathology, fibroblastic activity *in vitro*, macrophage interaction, and bilogical availability using the isolated perfused lung. Chemicals that are being utilized in these studies include:

aluminum salts and organoaluminum
asbestos
copper compounds
fibrous glass
lead oxide
lead sulfide
silica
2 ethoxy ethanol
2 nitropropane

Studies on the dose related pathogenesis and persistence of noncarcinogenic effects of chlordecone in rats are in progress. Toxic parameters being studied include reproduction, fertility, neurobehavior, immunology, hepatotoxicity and blood clotting.

Table 1.—*Chemicals Selected for Teratology Studies*

Chemical	CAS No.
Caffeine	58-08-2
Dimethylaniline	87-62-7
Ethyl Benzene	100414
Ethylene oxide	75218
Ethoxy ethanol*	110-80-5
Formaldehyde	50-00-0
Lead monoxide**	
Pentachloroanisole	1825-21-4
Toluene	108883
Xylenes:	
O-Xylene	94576
M-Xylene	108383
P-xylene	106423

*Post natal behavioral and nervous system abnormalities will also be evaluated.

**Post natal renal, cardiovascular, metabolic and hematopoietic systems will be evaluated through 10 months of age.

Table 2.—*Chemicals Nominated for Teratology Studies or Screening for Teratogenic Effect*

Chemical	CAS No.
Bisphenol A	80-05-7
Butyl nitrite	
Capsaicin	404-86-4
Cinnamaldehyde	104-55-2
Chlorinated dibenzofurans	
Copper compound(s)	
P-dichlorobenzene	106-46-7

Table 2.—*Chemicals Nominated for Teratology Studies or Screening for Teratogenic Effect*—Continued

Chemical	CAS No.
Gentian violet (hexamethyl-p-rosaniline)	548-62-9
Mercaptobenzothiazole	149-30-4
Oil of nutmeg	
Sulfamethazine	57-68-1
Tocopherol	1406-66-2

Table 3.—*Chemicals Tested in Salmonella/Microsome Plate Assays for Comparison With Fischer 344 Rat and $B_6C_3F_1$ Mouse Lifetime Bioassays*

4-Amino-2-nitrophenol—119-34-6
2-Amino-5-nitrothiazole—121-66-4
p-Chloroaniline
3-Chloromethyl pyridine hydrochloride—6959-48-4
N,N'-Dicyclohexylthiourea—1212-29-9
4,4'-bis (Diemthylamino) benzophenone
Dyrene(anilazine)—101-05-3
Ethylene dibromide—106-93-4
Lithocholic acid—434-13-9
4,4'-Methylenebis(n,N'-dimethylaniline)—101-61-1
Nitrilotriacetic acid trisodium salt monohydrate
4-Nitro-o-phenylenediamine—99-56-9
2-Nitro-p-phenylenediamine—5307-14-2
3-Nitropropionic acid—504-88-1
p-Phenylenediamine—106-50-3
Acetylsalicylic acid—50-78-2
Aldicarb—116-06-3
Aniline hydrochloride—142-04-1
o-Anisidine hydrochloride—134-29-0
APD—8003-03-0
1,2,3-Benzotriazole—95-14-7
Caffeine—58-08-2
Cinnamyl anthranilate—87-29-6
tris(2,3-Dibromopropyl)phosphate—126-72-7
1,3-Dichloro-5,5-dimethylhydantoin—118-52-5
Fluometuron—2164-17-2
1,5-Naphthalenediamine—2243-62-1
Proflavin hydrochloride—952-23-8
Reserpine—50-55-5
Styrene—96-09-3
4'-Chloroacetyl(acetanilide)—140-49-8
Coumaphos—56-72-4
m-Cresidine—102-50-1
p-Cresidine—120-71-8
Diazinon—333-41-5
2,4-Dimethoxyaniline—54150-69-5
3,3'-Dimethoxybenzidine-4,4'-diisocyanate
ethylenediaminetetra acetic acid, sodium salt—60-00-4
3-Methyl-1-phenyl-2-pyrazotin-5-one
Nitrofen—1836-75-5
5-Nitro-o-toluidine—99-55-8
p-Quinone dioxime—105-11-3
Succinic acid 2,2-dimethylhydrazide—1596-84-5
2,5-Toluenediamine sulfate—6369-59-1
Triphenyltin—76-87-6

Table 4.—*Alphabetical List of Chemicals Selected for Salmonella Mutagenicity Assay*

Acetamide—60-35-5
Acetin—26446-35-5
N-Acetyl-o-toluidine—120-6-1
Acrolein—107-02-8
3-Amino-α·α·α-trifluorotoluene—98-16-8
o-Aminophenol—95-55-6
Amyl nitrite—463-04-7
Aniline—62-53-3
o-Anisidine—90-04-0
p-Anisidine—104-94-9
Anthracene—120-12-7
Arochlor 1254—11097-69-1
l-Aziridineethanol—
Azobenzene—103-33-3
Azodicarbonamide—123-77-3
Benzaldehyde—100-52-7
Benzofuran—271-89-6
p-Benzoquinone dioxime—105-11-3
Benzyl salicylate—118-58-1
Beta-methylumbelliferone—90-33-5
Beta-picoline—108-99-6
Biphenyl—92-52-4
2-Biphenylamine—90-41-5
4-Biphenylamine—92-67-1
2,4'-Biphenylamine—
2,4'-Biphenyldiamine—492-17-1
Bis(chlorendo)furan
Bisphenol—80-05-7
Boric acid—10043-35-3
Bromobenzene—108-86-1
Bromocyclohexanol
Bromoform—75-25-2
2-Butanone peroxide—1338-23-4
n-Butyl para-aminobenzoate—94-25-7
Cacodylic acid—75-60-5
Carbon disulfide—75-15-0
Catechol—120-80-9
Chloral hydrate—302-17-0
Chlorendic acid—115-28-6
2-Chloro-1,3-butadiene—126-99-8
4-Chloro-α·α·α-trifluorotoluene—98-56-6
4-Chloro-3,5-dinitro-α·α·α-trifluorotoluene—393-75-9
4-Chloro-3-nitro-α·α·α-trifluorotoluene
Chlorobenzene—108-90-7
4-Chloronitrobenzene—100-00-5
2-Chloronitrobenzene—88-73-3
m-Chlorophenol—108-43-0
o-Chlorophenol—95-57-8
p-Chlorophenol—106-48-9
Cinnamaldehyde—104-55-2
Copper acetoarsenite—12002-03-8
m-Cresol—108-39-4
o-Cresol—95-48-7
p-Cresol—106-44-5
Crotonaldehyde—123-73-9
Cyanuric acid—108-80-5
Cyclohexanol—108-93-0
Cyclohexanone—108-94-1
Diacetone acrylamide—2873-97-4
4,4'-Diamino-2,2'-stilbenedisulfonic acid
2,4-Diaminophenol hydrochloride—137-09-7
Debenzofuran—132-64-9
Diborane—19287-45-7
2,3-Dibromo-1-propanol—96-13-9
Di-n-butylamine—111-92-2
1,3-Dichlorobenzene—541-73-1
1,2-Dichlorobenzene—95-50-1
1,4-Dichlorobenzene—106-46-7
cis-Dichlorodiamine platinum—15663-27-1
Dichlorodiphenylethylene—72-55-9
trans-1,2-Diochlorethylene—540-59-0
cis & trans-1,2,3-Dichloroethylene—156-59-2
1,1-Dichloroethylene—75-35-4
3,4-Dichloronitrobenzene—99-54-7
2,3-Dichloronitrobenzene—3209-22-1
2,3-Dichlorophenol—576-24-9
2,5-Dichlorophenol—38048-58-7
2,6-Dichlorophenol—87-65-0

3,4-Dichlorophenol—95-77-2
3,5-Dichlorophenol—591-35-5
Diethanolamine—111-42-2
7-Diethylamino-4-methylcoumarin—91-44-1
Diethyl carbonate—105-58-8
Diethyldichlorosilane—1719-53-5
Diethyleneglycoldimethylether (diglyme)—111-96-6
Diethyl ethylphosphonate—78-38-6
Di(2-ethylhexyl) phthalate—117-81-7
5,7-Dihydroxy-4-methylcoumarin—2107-76-8
Diisobutylketone—108-83-8
Dimethoxane—828-00-2
1,2-Demthoxybenzene—91-16-7
Dimethylamine—124-40-3
Dimethyl cyanamide—1467-79-4
N,N-Dimethylformamide—68-12-2
2,4-Dimethylphenol—105-67-9
N,N-Dimethylurea—1320-50-9
trans-1,2-Dichloroethylene—156-60-5
cis & trans 1,2-Dichloroethylene—540-59-0
4,6-Dinitro-2-aminophenol—96-91-3
2,4-Dinitrotoluene—121-14-2
Dioctyladipate—123-79-5
1,4-Dioxane—123-91-1
Diphenyl oxide (diphenyl ether)—101-84-8
1,2-Epoxypropane—75-56-9
Ethyl bromide—74-96-4
Ethyl chloride—75-00-3
Ethylene glycol—107-21-1
Ethylenediamine—107-15-3
2-ethylhexyl diphenyl phosphate—1241-94-7
Eugenol—97-53-0
Ferrocene—102-54-5
1-Fluoro-2,4-dinitrobenzene (FDNB)—70-34-8
2-Fluorobenzoyl chloride—393-52-2
Formaldehyde—50-00-0
Furfural—98-01-1
Gallic acid—149-91-7
Gluteraldehyde—111-30-8
Hemotoxylin
Hexabromobenzene—87-82-1
Hexabromobiphenyl—36355-01-8
Hexachlorobenzene—118-74-1
Hexachlorocyclopentadiene dimer—2385-85-5
Hexachloroethane—67-72-1
Hexachlorophene—70-30-4
Hexaclorobutadien—87-68-3
Hexamethly-p-rosaniline-ci—548-62-9
Hydrazine sulfate—10034-93-2
Hydrazinobenzene—100-63-0
Hydroquinone—123-31-9
Hydroquinone dimethyl ether—150-78-7
Hydroquinone monomethyl ether—150-76-5
4-Hydroxyacetanilide—103-90-2
Ligninsulfonic acid sodium salt—8062-15-5
Lithium chloride—7447-41-8
Maleic anhydride—108-31-6
Maleic hydrazide—123-33-1
Melamine—108-78-1
Metchloronitrobenzene—121-73-3
Methacrylic acid methylester—80-62-6
Methylhydrazine—60-34-4
N-Methyl-para-aminophenol—150-75-4
3-Methyl-3-phenylglycidic acid ethyl ester—77-33-8
Methyl salicylate—119-36-8
Ortho-methoxyphenol—90-05-1
8-Methoxyphenol—298-81-7
8-Methoxy psoralin
Morpholine—110-91-8
Neophytadiene—504-96-1
Nickelocene—1271-28-9
1-Nitronaphthalene—86-57-7
p-Nitrophenol—100-02-7
2-Nitropropane—79-46-9
N-Nitrosodiethanolamine—1116-54-7
2-Nitro-α,α,α-trifluorotoluene
3-nitro-α,α,α-trifluorotoluene
Oxalic acid—144-62-7
Paraquat—4685-14-7
Pentachloroaniline—527-20-8
Pentachloroanisole—1825-21-4
Pentachlorobenzene—608-93-5
Pentachloronaphthalene—1321-64-8
Pentachloronitrobenzene—82-68-8
Pentachlorophenol—87-86-5
Pentachlorophenyl methyl ether—1825-21-4
Pentachlorophenyl methyl sulfide—1825-19-0
Phenyl salicylate—118-55-8
Phenytoin—57-41-0
Phorbol ester—17673-25-5
1-(2H)-Phthalazinone—119-39-1
Phthalic anhydride—85-44-9
Picric acid—88-89-1
Piperazine—110-85-0
Piperonal—120-57-0
Polybrominated biphenyl—
Propylene Dichloride—78-87-5
1,2-Propylene glycol—57-55-6
Pyridine—110-86-1
Quinoline—91-22-5
p-Quinone—106-51-4
Resorcinol—108-46-3
Rhodanine (Ammonium salt)—1762-95-4
Ricinoleic acid—141-22-0
Semicarbazide hydrochloride—563-41-7
Sodium aluminosilicate—1344-00-9
Sodium dehydroacetate-4418-26-2
Sodium dichloroisocyanurate—13023-28-4, 2893-78-9
Sodium fluoride—7681-49-4
cis-Stilbene—645-49-8
trans-Stilbene—645-49-8
Terephthalic acid—100-21-0
Tert-butyl hydroperoxide—110-05-4
1,2,3,5-Tetrachlorobenzene—634-90-2
1,2,3,4-Tetrachlorobenzene—634-66-2
1,2,4,5-Tetrachlorobenzene—95-94-3
Tetrachloroethylene—127-18-4
Tetrachloronitrobenzene—28804-67-3
Tetrachloronaphthalene
Tetrachlorophthalic anhydride—117-08-8
Tetrakis(hydroxymethyl)phosphonium chloride—124-64-1
Tetraethyllead—78-00-2
Tetramethyllead—75-74-1
Tetranitromethane—509-14-8
Thiazole—288-47-1
Thiocarbonilide
Thioglycolic acid—68-11-1
Toluene—108-88-3
Tributoxyethyl phosphate—Tributyl borate—688-74-4
1,2,3-Trichlorobenezene—87-61-6
1,2,4-Trichlorobenezene—120-82-1
1,3,5-Trichlorobenezene—108-70-3
Trichloronaphthalene—1321-65-9
2,4,6-Trichlorophenol—88-06-2
Triethanolamine—102-71-6
Triphenylphosphine—603-35-0
Trihydroxybutyrophenone—52262-23-4
Tris(4-bromophenyl)phosphate
Tris(2-chloroethyl)phosphite
Tris(2-ethylhexyl)phosphate—78-42-2
Tris(isopropylphenyl)phosphate
Tritolyl phosphate—1330-78-5
Wollastonite ca silicates
meta-Xylene—108-38-3
ortho-Xylene—95-47-6
para-Xylene—106-42-3

Table 5.—*Chemicals Selected for a Battery of Mutagenicity Assays*

Chemicals	CAS No.
Allyl chloride	107-05-1
Bisphenol A	80-05-7
Butylene oxide	26249-20-7
Cyclohexanone	108-94-1
N,N-dimethyl acetimide	
Dimethylformamide	68-12-2
Ethoxyethanol	110-80-5
Ethyl benzene	100-41-4
Ethylene oxide	75-21-8
Hexachlorobutadiene	87-68-3
Mercaptobenzenethiazole	149-30-4
Methyl bromide	74-83-9
2 Methoxyethanol	109-86-4
Bis 2 methoxyethoxyethyl ether	143-24-8
N methyl dicyclohexylamine	
Styrene oxide	100-42-5
1,1,2,2-tetrachlorethane	127-18-4
Vinyl toluene	

TABLE 6.—*International Collaborative Study of Mutagenicity Assay Systems; Compounds To Be Tested*

Carcinogen/Noncarcinogen Pairs	
4-Nitroquinoline-N-oxide—56-57-5	Chloroform—67-66-3
3-Methyl-4-nitroquinoline-N-oxide—14073-00-8	1,1,1-Trichloroethane—71-55-6
Benzidine—92-87-5	2-Acetylaminofluorene
3,3',5,5'-Tetramethylbenzidine—54827-17-7	4-Acetylaminofluorene
4-Dimethylaminoazobenzene (Butter Yellow)—60-11-7	N-Nitrosomorpholine—59-89-2
4-Dimethylaminoazobenzene-4-sulphonic acid	Diphenylnitrosamine—86-30-6
Sodium salt (Methyl Orange)	Dinitrosopentamethylene tetramine
Urethane—51-79-6	1-Naphthylamine—134-32-7
O-Isopropyl-N-3-chlorophenylcarbamate—101-21-3	2-Naphthylamine—91-59-8
Benzo(a)pyrene—	Dimethyl carbamoyl chloride—79-44-7
Pyrene—129-00-0	Dimethylformamide—68-12-2
Propiolactone—57-57-8	Methylazoxymethanol acetate—592-62-1
Butyrolactone—96-48-0	Azoxybenzene—495-48-7
9,10-Dimethylanthracene—781-43-1	d,1.Ethionine—
Anthracene—120-12-7	Methionine—63-68-3

Miscellaneous Compounds

Hydrazine sulphate—10034–93–2
Hexamethylphosphoramide (HMPA—680–31–9
Ethylenethiourea—96–45–7
Diethylstilbestrol—56–53–1
Safrole—94–59–7
Cyclophosphamide—50–18–0
Epichlorhydrin—
3-aminotriazole
4,4'-Methylenebis (2-chloroaniline)—101–14–4
Sugar (sucrose)—57–50–1
O-toluidine—95–53–4
Ascorbic acid—50–81–7
Auramine

Table 7.—*International Collaborative Study of Mutagencity Assay Systems Utilized*

Prokaryotic Systems

Repair deficiency assays:
- Bacillus subtilis—rec
- Escherichia coli—rec
- Escherichia coli—pol A

Point mutation assays:
- Salmonella typhimurium/microsome (Ames test)
- Salmonella typhimurium 8-azaquanine resistance
- Escherichia coli WP–2
- Escherichia coli 343–113

Eukaryotic Systems

Fungus:
- Saccharomyces cerevisiae—mitotic recombination
- Saccharomyces cerevisiae—reversions
- Schizosaccharomyces pombe—forward mutations
- Saccharomyces cerevisiae—mitochondrial mutations
- Neurospora crassa—ad–3 reversions

Plant:
- Tradescantia—stamen hair system

Insect:
- Drosophila melanogaster—sex-linked recessive lethals

Mammal (in vitro):
- Unscheduled DNA Synthesis (human cells)
- Sister chromatid exchange (CHO cells)
- Chromosome aberrations (hamster and rat cells)
- Specific Locus mutations—
  - L5178Y cells—TK and HGPRT
  - P388F cells—TK and HGPRT
  - CHO cells—HGPRT
  - Human fibroblasts—HGPRT

Mammal (in vivo):
- Micronucleus (mouse)
- Chromosome aberrations
- Sister-chromatid exchange (mouse, rabbit)
- Sperm morphology (mouse)

Nongenetic Systems

- Hydroxylation of Biphenyl
- Local Graying of Hair
- *In vitro* Nuclear Enlargement
- Rabins Test
- Transformation (BHK Cells)

Table 8.—*Chemicals for Which Lifetime Bioassays Are In Progress*

Chemical	CAS No.	Route	Spec.
Acid black 52		Feed, intratr	RH
Acid orange #3	6373-74-6	Feed	RM
Agar agar	9002-18-0	Feed	RM
Agaritine	2757-90-6	Water	RM
Aldicarb	116-06-3	Feed	RM
Allyl isothiocyanate	57-06-7	Gav	RM
Allyl isovalerate	2835-39-4	Gav	RM
Aminoundecanoic acid	27323-47-3	Feed	RM
Aniline, p-chloro-	106-47-8	Feed	RM
Antimony oxide	1309-64-4	Feed	RM
Asbestos, amosite		Feed	RH
Asbestos, chrysotile SR		Feed	RH
Asbestos, chrysotile IR		Feed	RH
Asbestos, chrysotile SR		Inhal	R
Asbestos, chrysotile IR		Inhal	R
Asbestos, crocidolite		Feed	R
Ascorbic acid	50-81-7	Feed	RM
Benzene	71-43-2	Gav	RM
Benzoin	119-53-9	Feed	RM
Benzyl acetate	140-11-4	Gav	RM
Benzyl chloride	100-44-7	IP/IJ	M
2-biphenylamine HCl	90-41-5	Feed	RM
Bisphenol A	80-05-7	Feed	RM
HC blue 1	2784-94-3	Feed	RM
Blue 15B	574-93-6	Feed	RM
Bromoform	75-25-2	Gav	RM
Bromodichloromethane	75-27-4	Gav	RM
Butylated hydroxytoluene (BHT)	128-37-0	Feed	RM
Butyl benzyl phthalate	85-68-7	Feed	RM
n-Butyl chloride	106-69-3	Gav	RM
t-Butyl alcohol	75-65-0	Water	RM
Caprolactam	105-60-2	Feed	RM
Castor oil	8001-79-4	Feed	RM
Chlorobenzene	108-90-7	Gav	RM
Chlorodibromomethane	124-48-1	Gav	RM
3-Chloro-2-methylpropene	563-47-3	Gav	RM
C.I. disperse yellow 3	2832-40-8	Feed	RM
Cinnamyl anthranilate	87-29-6	Feed	RM
Coconut oil acid diethanolamine (con 2/1)	8040-31-1	SP	RM
Cyclohexanone	108-94-1	Water	RM
Cytembena	2126-70-7	IP/IJ	RM
D & C red No. 9	5160-02-1	Feed	RM
DBCP	96-12-8	Inhal	RM
Decabromodiphenyl oxide	1163-19-5	Feed	RM
Diallylphthalate	131-17-9	Gav	RM
Dibenzo-p-dioxin, 1,2,3,6,7,8-hexachloro	34465-46-8	SP	M
Dibenzo-p-dioxin, 1,2,3,6,7,8-hexachloro	34465-46-8	Gav	RM
Dibenzo-p-dioxin, 2,3,7,8-tetrachloro	1746-01-6	SP	M
Dibenzo-p-dioxin, 2,3,7,8-tetrachloro	1746-01-6	Gav	RM
Diesel fuel marine		Gav	R
Diesel fuel marine		SP	M
1,4-diamino-2,6-dichlorobenzene		Feed	RM
o-Dichlorobenzene	95-50-1	Gav	RM
p-Dichlorobenzene	106-46-7	Gav	RM
1,1-dichloroethylene	75-35-4	Gav	RM
Cis/trans-1,2-dichloroethylene	156-59-2 540-59-0	Gav	RM
1,2-dichloropropane	78-87-5	Gav	RM
Diethanolamine	111-42-2	Water	RM
Di(2-ethylhexyl)adipate	103-23-1	Feed	RM
Di(2-ethylhexyl)phthalate	117-81-7	Feed	RM
Diglycidylresorcinol ether	101-90-6	Feed	RM
n,n-Dimethyldodecylamine oxide	1643-20-5	Water	RM
Dimethylhydrogenphosphite	868-85-9	Gav	RM
Dimethyl methylphosphonate	756-79-6	Gav	RM
Dimethyl morpholinophosphonate	597-25-1	Gav	RM
Dimethylvinylchloride	513-37-1	Gav	RM
Diphenylamine, n-nitroso	86-30-6	Feed	RM
4,4'-diphenylmethane diisocyanate	101-68-8	Gav	RM
Disperse blue #1	2475-45-8	Feed	RM
Disperse yellow #3		Feed, intratr	RH
Dodecyl alcohol, ethoxylated	29718-44-3	Feed	RM
Ethane, 1,2-dibromo	106-93-4	Inhal	RM
Ethane, 1,1,1-trichloro	71-55-6	Gav	RM
Ether, bis(2-chloro-l-methylethyl)	108-60-1	Gav	M
Ether, bis(2-chloro-l-methylethyl)	108-60-1	Gav	R
Ethyl acrylate	140-88-5	Gav	RM

Table 8.—*Chemicals for Which Lifetime Bioassays Are In Progress—Continued*

Chemical	CAS No.	Route	Spec.
Ethyl tellurac	30145-38-1	Feed	RM
Ethylene chlorohydrin	107-07-3	SP	RM
Ethylene glycol monoethyl ether	110-80-5	Water	RM
Eugenol	97-53-0	Feed	RM
Fibrous glass		Inhal	R
Fluometuron	2164-17-2	Feed	RM
Fluorescein, disodium salt	518-47-8	Water	RM
Geranyl acetate	105-87-3	Gav	RM
Gilsonite	12002-43-6	SP	RM
Guar gum	9000-30-0	Feed	RM
Gum arabic	9000-01-5	Feed	RM
Gum tara		Feed	R
HC blue #2		Feed	RM
HC red #3		Feed	RM
8-hydroxyquinoline	148-24-3	Feed	RM
Lauric acid diethanolamine (Con I/I)	120-40-1	SP	RM
Lead dimethyl dithiocarbamate	19010-66-3	Feed	RM
Locust beam gum	9000-40-2	Feed	RM
Malaoxon	1634-78-2	Feed	RM
Malathion	121-75-5	Feed	R
Maleic hydrazide diethanolamine salt	5716-15-4	Water	RM
Malonaldehyde	542-78-9	Gav	RM
Mannitol	69-65-8	Feed	RM
Melamine	108-78-1	Feed	RM
Methapyrilene	91-80-5	Feed	RM
Methylenedianiline	101-77-9	Feed	RM
Methylene chloride	75-09-2	Gav	RM
Methylene chloride	75-09-2	Inhal	RM
Mirex	2385-85-5	Feed	R
Molybdate orange	12656-85-8	Feed	RM
Monuron	150-68-5	Feed	RM
Naphthalene	91-20-3	Gav	RM
Nitrofurantoin	67-20-9	Feed	RM
Oleic acid diethanolamine (Con I/I)	13961-86-9	SP	RM
Orange #10	1936-15-8	Feed	RM
4,4'-oxydianiline	101-80-4	Feed	RM
Pentachloroethan	76-01-7	Gav	RM
Phenol	108-95-2	Water	RM
Phenylbutazone	50-33-9	Water	RM
Phenytoin		Feed (prenatal/ postnatal).	RM
Phthalocyanine green	1328-53-6	Feed	RM
Polychlorinated biphenyl		Feed (prenatal/ postnatal).	RM
Propyl gallate	121-79-9	Feed	RM
Pyridine	110-86-1	Gav	RM
Red #14	3567-69-9	Feed	RM
Reserpine	50-55-5	Feed	RM
p-Rosaniline HCl	569-61-9	Feed	RM
Selenium sulfide	7488-56-4	Gav	RM
Selenium sulfide	7488-56-4	SP	M
Selsun	UNK	SP	M
Sodium dodecyl sulfate	151-21-3	Feed	RM
Sodium(2-ethylhexyl)alcohol sulfate	126-92-1	Feed	RM
Stannous chloride	7772-99-8	Feed	RM
Styrene oxide	96-09-3	Gav	RM
Sudan 1	842-07-9	Feed	RM
Sun yellow FCF	2783-94-0	Feed	RM
Telone	542-75-6	Gav	RM
1,1,1,2-tetrachloroethane	630-20-6	Gav	RM
Tetrachloroethylene	127-18-4	Inhal	RMH
Tetraethylthiuram disulfide	14239-68-0	Feed	RM
THPC	124-64-1	Feed	RM
THPS	UNK	Feed	RM
Toluene diisocyanate	584-84-9	Gav	RM
Tremolite		Feed	R
Trichlorfon	52-86-6	Feed	RM
Trichloroethylene	79-01-6	Gav	RM
Tris(2-ethylhexyl)phosphate	78-42-2	Gav	RM
Violet 3	1325-82-2	Feed	RM
Witch hazel	84400-12-7	SP	RM
Zearalenone	7645-23-0	Feed	RM
Ziram	137-30-4	Feed	RM

Table 9.—*Chemicals selected for Extensive Evaluation of Toxic Effects Including Carcinogenesis*

Compound	NCI No.	CAS No.
2-Amino-4-nitrophenol	C559958	99-57-0
2-Amino-5-nitrophenol	C55970	121-88-0
Ampicillin	C56086	69-53-4
Amyl nitrite (butyl nitrite)	C50179	110-46-3
Arsenicals, organic		
Benzathine penicillin G	C56100	1538-0-6
Benzofuran	C56168	271-89-6
Benzyl alcohol	C06111	100-51-6
2,2-Bis(bromomethyl)-1,3-propanediol.	C55516	3296-90-0
Boric acid		11113-50-1
Bromobenzene	C55492	108-86-1
1,3-Butadiene	C50602	106-99-0
2-Butanone peroxide	C55447	1338-23-4
Caffeine	C02733	58-08-2
Capsaicin		404-86-4
Carbon disulfide	C04591	75-15-0
Chloramine	C56382	55-86-7
Chlorendic acid	C55072	115-28-6

Table 9.—*Chemicals selected for Extensive Evaluation of Toxic Effects Including Carcinogenesis*—Continued

Compound	NCI No.	CAS No.
Chlorinated trisodium phosphate.	C55754	56802-99-4
Chloroacetophenone	C55107	532-27-4
Chlorobenzalmalononitrile	C55118	
Chlorowax 40	C53543	51990-12-6
Chlorowax 500	C53587	56509-64-9
Chlorpheniramine maleate		113-92-8
Cineol (eucalyptol)		470-67-7
Cinnamaldehyde	C56111	104-55-2
2,3-Dibromo-l-propanol	C55436	96-13-9
1,4-Dichlorobenzene	C54955	106-46-7
2,4-Dichlorophenol	C55345	120-83-2
Dichlorvos	C00113	62-73-7
Dimethylaniline	C56188	87-62-7
Diphenhydramine HCL	C56075	147-24-0
DMBA (positive control)	C03918	57-97-6
Ephedrine sulphate	C55652	299-42-3
Epinephrine HCL	C55663	55-31-2
1,2-Epoxybutane	C55527	106-88-7
1,2-Epoxyhexadecane	C55538	7320-37-8
Erythromycin stearate	C55674	114-07-8
Ethyl alcohol	C03134	64-17-5
Ethylbenzene		100-41-4
Ethyl bromide	C55481	74-96-4
Ethyl chloride	C06224	75-00-3
Ethylene oxide	C50088	75-21-8
Formaldehyde	C02799	50-00-0
Furosemide	C55936	54-31-9
Gibberellic acid	C55823	77-06-5
Glutaraldehyde	C55425	111-30-8
Glycidol	C55549	556-52-5
Hematoxylin	C55889	517-28-2
Hexabromobiphenyl (FF-1)	C53634	36355-01-8
Hexafluoroacetone	C08413	10057-27-9
Hexamethyl-p-rosaniline (gentian violet).	C55969	548-62-9
Hexylresorcinol	C55787	136-77-6
Hydrochlorothiazide	C55925	58-93-5
Hydroquinone	C55834	123-31-9
5-Hydroxytryptophan		56-69-9
Iodinated glycerol	C55469	5634-39-9
Isophorone	C55618	78-59-1
Isopropyl glycidyl ether		
d-Limonene	C55572	5989-27-5
Mercaptobenzothiazole		149-30-4
8-Methoxypsoralen	C55903	298-81-7
Methylbenzyl alcohol	C55685	98-85-1
Methyl carbamate	C55594	598-55-0
Methyldopa	C55721	555-30-6
Methyl methacrylate	C50680	80-62-6
Mycotoxins (ochratoxin, penicillic acid).		
Nalidixic acid	C56199	389-08-2
Naphthalene		91-20-3
2-Napthylamine, N pehnyl	C02915	135-88-6
5-Nitro-2-furaldehyde		698-63-5
Nitrofurazone	C56064	59-87-0
Oil of nutmeg		
Oxalic acid	C55209	144-62-7
Pentachloroanisole		1825-21-4
Pentachloronitrobenzene	C00419	82-68-8
Pentachlorophenol	C54933	87-86-5
Phenol	C50124	108-95-2
Phenolphthalein	C55798	77-09-8 5768-87-6
Phenylephrine hydrochloride	C55641	61-76-7
o-Phenylphenol	C50351	90-43-7
Polyurethane		9009-54-5
Propylene	C50077	115-07-1
Propylene oxide	C50099	75-56-9
Pyrrolizidine alkaloids		643-20-9
Retene	C55390	483-65-8
Rhodamine 6G	C56122	989-38-8
Rotenone	C55210	83-79-4
Sodium aluminosilicate	C55505	1344-00-9
Sodium dichloroisocyanurate	C55732	2893-78-9
Sodium fluoride	C55221	7681-49-4
Succinic anhydride	C55696	108-30-5
Sucrose		25702-74-3 9012-95-7 27616-49-5
Sulfamethazine		57-68-1
2,3,7,8-Tetrachlorodibenzofuran.		51207-31-9
Tetrachloroethylene (perchloroethylene).	C04580	127-18-4
Tetracycline hydrochloride	C55561	64-75-5
Tetracycline, oxy	C05209	79-57-2
Tetranitromethane	C55947	509-14-8
Tocopherol		1406-66-2
Toluene	C07272	108-88-3
Trimellitic anhydride		552-30-7
Vinylcyclohexene	C54999	108-94-1
Vinyl toluene		622-97-9
Wollastonite Ca-silicates	C55470	13933-17-0
Xylenes, mixed	C55232	1330-20-7

TABLE 10.—*Chemicals nominated for Toxicologic or Carcinogenic Evaluation*

Compound	NCI No.	CAS No.
1-amino-2, 4-dibromoanthraquinone.		81-49-2
amphetamine	C55710	60-13-9
azodicarbonamide	C55981	123-77-3
benzaldehyde	C56133	100-52-7
benzilic acid, 4,4'-dichloroethyl ester.	C00408	510-15-6
N-butyl chloride	C06155	109-69-3
gama-butyrolactone	C55878	96-48-0
beta-cadinene (oil of cade)	C56008	523-47-7
carvone (caraway, dill seed)	C55867	99-49-0
catechol	C55856	120-80-9
chloramphenicol	C55709	56-75-7
chlordecone (Kepone)	C00191	143-50-0
chlorinated dibenzofurans		
chlorinated naphthalenes		
p-chloroaniline	C02039	106-47-8
chlorpromazine	C05210	69-09-0
chromium inorganic	C04273	7440-47-3
copper and inorganic compounds.	C08515	7440-50-8
corn oil	C00577	8001-30-7
curcumin		458-37-7
2,4-diaminophenol hydrochloride.		
4,4-diamino-2,2'-stilbenedisulfonic acid.		
cis-dichlorodiamine platinum (II).	C55776	15663-27-1
1,1-dichloroethylene	C54262	75-35-4
cis- & trans-1,2-dichloroethylene.	C51581	156-59-2
dichloropropane		26638-19-7
diethyl phthalate		84-66-2
3,4-dihydrocoumarin	C55890	119-84-6
dimethoxane ("dioxin")	C56213	828-00-2
3-3'dimethoxybenzidine	C02175	91-93-0
dimethyl sulfoxide	C00873	67-68-5
ethoxyethanol	C54853	110-80-5
ethylene glycol	C00920	107-21-1
furan	C56202	110-00-9
furfural	C56177	98-01-1
furfuryl alcohol	C56224	98-00-0
glycol	C00817	9005-65-6
H C yellow No. 4	C56019	52551-67-4
hexachlorobutadiene		87-68-3
hexachlorocyclopentadiene	C55607	77-47-4
hexachloroethane	C04604	67-72-1
hormones		
hydroxyacetanilide		
4-hydroxyacetanilide	C55801	103-90-2
indomethacine	C56144	53-86-1
iron compounds		
isoproterenol HCL	C55630	7683-59-2
lead oxide		1335-25-7
lithium and compounds		7439-93-2
manganese compounds	C02517	7439-96-5
mercury (metal)	C04375	7439-97-6
mercuric chloride		7487-94-7 43412-44-8
phenyl mercuric acetate		
methapyriline	C09018	91-80-5
methyl coumarin	C55812	92-48-8
o-methylhydroxylamine		67-62-9
methyl ethyl ketone peroxide		1338-23-4
monochloroacetic acid	C08264	79-11-8
monochloroethane		75-003
monosodium methane arsenate.		
navy fuels JP-5	C54784	
nitrobenzene		98-95-3
nitrophenols		
p-nitropenol	C55992	100-02-7
N-nitrosodiethanolamine	C55583	1116-54-7
nitrotoluene		1321-12-6
octachlorodibenzodioxin	C03678	3268-87-9
oleic acid, methyl ester, cis		
organophosphates		
palladium (2+) chloride		
pentachloroethane	C53894	76-01-7
pentaerithritol tetranitrate	C55743	78-11-5
petroleum distillates		
phenol, 2,2'-thiobis(4,6-dichloro).	C02948	97-18-7
D-phenylalanine		673-06-3
N-phenylhydroxylamine		100-65-2
pichloram	C00237	1918-02-1
platinum and compounds		7440-06-4
polyvinylpyrrolidone polymers		
potassium azide		20762-60-1
probenecid	C56097	57-66-9
quercetin		522-12-3
p-quinone	C55845	106-51-4
resorcinol	C05970	108-46-3
rhodamine	C56122	989-38-8
sodium azide	C06462	26628-22-8
sodium dichloroisocyanurate	C55732	2893-78-9
styrene	C02200	100-42-5
talc	C06008	14807-96-6
L-taurine		107-35-7
tellurium		13494-80-9
tetrahydrofuran		109-99-9
tetrakis (hydroxymethyl) phosphonium chloride.	C55061	124-64-1
titanium & compounds—titanium.	C04251	7440-32-6
titanium oxide	C04240	13463-67-7
titanium ferrocene	C04502	1271-19-8
trichloroethylene	C04546	79-01-6
trichloropropane		25735-29-9
2,4,6-trinitrotoluene	C56155	118-96-7
tris (4-bromophenyl) phosphate.		
tris (2-chloroethyl) phosphate		115-96-8
vinyl cyclohexene dioxide		
vinylidene fluoride		
vitamin D		1406-16-2
vitamin D_3		67-97-0
witch hazel	C50544	84400-12-7
xylenesulfonic acid, sodium salt.	C55403	1300-72-7
2,6-xylidine	C56188	87-62-7

Table 11.—*Chemicals Studied for Behavioral or Neurologic Effect*

Chemicals	CAS No.
Carbon disulfide [a]	75-60-5
Chlordecone	143-50-0
Caffeine [b]	58-08-2
Ethanol [b]	64-17-5
Ethylene oxide	75-21-8
Lithium carbonate	554-13-2
Mercaptobenzothiazole	149-30-4
Methyl bromide	74-83-9
Methyl chloride [b]	74-87-3
Methylethyl ketone [c]	78-93-3
Polybrominated biphenyl	
Propylene oxide	75-56-9
Selenium	7488-56-4
Toluene [c]	108-88-3
Valium [b]	439-14-5
Xylene	1330-20-7

[a] Human subject study.

[b] Includes human subject study and interaction of methyl chloride, caffeine, ethanol and valium.

[c] Includes human subject study and interaction of toluene, methyl ethyl ketone, and xylene.

[FR Doc. 79-22733 Filed 7-23-79; 8:45 am]

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federal register

Tuesday
July 24, 1979

Part V

Department of Health, Education, and Welfare

Office of Education

Financial Assistance for Local Educational Agencies in Areas Affected by Federal Activity

DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE

Office of Education

45 CFR Part 114

Financial Assistance for Local Educational Agencies in Areas Affected by Federal Activity

AGENCY: Office of Education, HEW.

ACTION: Final Regulations.

SUMMARY: These final regulations govern the award of Federal assistance to school districts that enroll certain categories of children receiving free public education in areas affected by Federal activities. They are designed to ensure the safety of children who are educated on federally owned property, and to make certain that handicapped children have access to educational programs located on federally owned property.

EFFECTIVE DATE: These regulations are expected to take effect 45 days after they are transmitted to Congress. Regulations are usually transmitted to Congress several days before they are published in the **Federal Register.** The effective date is changed by statute if Congress disapproves the regulations or takes certain adjournments. If you want to know the effective date of these regulations, call or write the Office of Education contact person.

FOR FURTHER INFORMATION CONTACT: Mr. William L. Stormer, Office of Education, Room 2107A, 400 Maryland Avenue, SW., Washington, D.C. 20202, Telephone: (202) 245–8427.

SUPPLEMENTARY INFORMATION:

A. Background

Section 10 of Pub. L. 81–815 provides for direct Federal construction of school facilities for children residing on Federal property. It was adopted to serve two situations where the Commissioner should take the responsibility to provide school facilities for children residing on Federal property:

Section 10(a)(1)—where State law precludes the expenditure of funds to educate children on Federal property.

Section 10(a)(2)—where the local educational agency (LEA) is unable to provide a suitable free public education for children residing on Federal property.

The Commissioner published in the **Federal Register** on February 14, 1979 a Notice of Proposed Rulemaking (44 FR 9727). During the period allowed for comments in response to the proposed regulations, two comments were received. Comments and responses are included in section B of the preamble.

Priority Ranking

Funding priorities for section 10 were initiated to distribute limited funds. Groups for establishing priority in funding at present are as follows:

1. Repairs to existing federally-owned school facilities for children's safety.

2. Upgrading for facility transfer where an LEA has assured the Commissioner that it will apply for and accept ownership of the federally-owned facilities.

3. Upgrading or new construction or both to provide facilities for unhoused students.

4. New construction, remodeling, or rehabilitation necessary to permit the implementation of a contemporary education program.

Authority to Initiate Study

The Commissioner of Education directed the initiation of an in-depth study to analyze section 10 school construction needs.

Findings

The findings of the in-depth study projected a total cost estimate of $198,231,641 ($200 million) in FY 1976 dollars to repair, upgrade, or construct school facilities to provide for contemporary educational programs.

Construction estimates for upgrading existing facilities to meet life safety and handicapped access standards total approximately $10.5 million in 1976 dollars.

Estimates for construction of replacement facilities where upgrading is not sufficient to meet life safety standards total approximately $60 million in 1976 dollars.

For the purpose of this estimate, it is assumed that the responsible LEA is unable to provide a suitable free public education for the children concerned. A determination to this effect, of course, will be required prior to the initiation of any extensive remodeling or new construction.

The in-depth study disclosed many instances where existing school facilities are simply inadequate to house the total number of pupils enrolled. Large numbers of children are required to be housed in makeshift facilities, such as those that have been abandoned from the use they originally served.

Some of the pupil membership increases have resulted from Department of Defense programs to construct additional on-post military family housing units at an accelerated pace over the past several years, or from a change in the basic mission the installation serves.

The safety of children being educated in buildings under the Commissioner's cognizance is a first priority. A portion of the construction needed to bring existing facilities up to life safety standards requires only repairs or upgrading activities. Construction can be performed which will meet life safety standards and achieve access for the handicapped equal to that called for by section 504 of the Rehabilitation Act of 1973.

Certain section 10 facilities, however, cannot be made life safe (i.e., old wooden buildings with an unacceptable "burn rate") and, therefore, construction of replacement facilities is required.

In these cases, the current priority system precludes the Commissioner from targeting money toward major renovation or new construction efforts.

Amendment to the Regulations

Modification of the priorities, by regulation, of the existing funding priority groupings to be promulgated are as follows:

(1) Emergency repairs for the children's safety.

(2) Upgrading and new construction to meet life safety and handicapped access standards.

(3) Upgrading to provide facility transfers to LEAs.

(4) Upgrading to provide facilities for unhoused children.

(5) Upgrading and/or new construction to provide contemporary educational programs.

Criteria by which to judge "suitable free public education" and "ability to provide suitable free public education" have never been defined in the regulations or the law. Without established criteria and a revision of priorities, applicants cannot be sure of their eligibility status. These two amendments will alleviate the present shortcoming.

This definition of "suitable free public education" is distinguished from the definition of "free appropriate public education" in section 602 (18) of the Education of the Handicapped Act. Although the definitions may have similar application to the situation of handicapped children in certain instances, the latter definition applies specifically to special education and related services.

The primary standard against which to measure an LEA's suitability will be that which is commonly provided in the State. The school attended by a pupil residing on Federal property must be

within the State's established maximum commuting distance from that pupil's home.

The programs of instruction offered or which can be offered must meet minimum standards for State accreditation or approval. In the event a State has not established minimum educational requirements, the Commissioner then may apply appropriate accreditation associations' standards to assess suitability of the LEA's program of instruction.

Examination will also be made of the ability of the LEA to provide suitable free education, particularly as it applies to school construction. Operational indicators would be the percentage of the LEA's bonded indebtedness; the present level of debt service; and the amount of resources the LEA has, State, local, and Federal, to provide minimum school facilities for the children to be housed.

B. Summary of comments and responses

The following is a summary of the comments received and the responses of the Commissioner.

§ 114.5 Determination of priority indices and priority grouping for applications.

(1) *Comment.* A commenter urged that "upgrading to provide facilities for unhoused children" be raised from number four (4) priority to number two (2) priority, at least for long standing applications.

Response. No change has been made in the regulations. Section 3 of Pub. L. 81–815 provides that the Commissioner shall by regulation prescribe an order of priority, based on relative urgency of need, to be followed in approving applications in the event the funds appropriated under the Act are less than necessary to accommodate all applications. The funds allocated will be reserved for applications on this priority listing in order of priority indices.

The safety of children being educated in buildings under the Commissioner's cognizance is a first priority. A portion of the construction needed to bring existing facilities up to life safety standards requires only repairs or upgrading activities. Construction can be performed which will meet life safety standards and achieve access for the handicapped equal to that called for by section 504 of the Rehabilitation Act of 1973.

Certain facilities cannot be made life safe. In some instances they are old wooden frame buildings with an unacceptable burn rate. Therefore, construction of replacement facilities is necessary. In these cases, the current priority system precludes the Commissioner from targeting money toward the replacement of those facilities. This in effect, will provide proper space for many of the currently unhoused pupils since they are presently required to be housed in makeshift facilities that have been abandoned from the use they originally served. It is estimated that it will take $90 million in 1979 dollars to construct replacement facilities where upgrading is not sufficient to meet life safety standards.

(2) *Comment.* A commenter questioned whether the Advisory Council on Historic Preservation had been consulted in developing procedures to assure that this program contributes to the preservation and enhancement of sites and structures of historic, architectural, or archeological significance.

Response. No change has been made in the regulations. The amendments to the regulations are, in this instance simply to revise the priority grouping for funding eligible applications and to define the terms "suitable free public education" and "ability to provide suitable free public education."

C. Location of changes in the Regulations to Implement the New Amendments in Pub. L. 81–815

Under § 114.1 (*Definitions*)—Add a new definition (a) "Ability to provide suitable free public education" before (a) "Act" and redesignate paragraph (a) as (a–1).

Add a new definition (w-1) "Suitable free public education" after (w) "Subpriority indices."

Under § 114.5 (*Determination of priority indices and priority groupings for applications*)—Under subparagraph (b)(2) add a new item (ii) and change (ii) to (iii), (iii) to (iv), and (iv) to (v). The new priority is as follows:

(ii) Applications in cases where upgrading or new construction or both is necessary to meet life safety and handicapped access standards.

D. Citation of legal authority

The reader will find a citation of statutory or other legal authority in parentheses on the line following each substantive provision.

(Catalog of Federal Domestic Assistance Nos. 13.477, School Assistance in Federally Affected Areas—Construction)

Dated: June 6, 1979.

Ernest L. Boyer,

U.S. Commissioner of Education.

Approved: July 16, 1979.

Joseph A. Califano, Jr.,

Secretary of Health, Education, and Welfare.

Accordingly Part 114 of 45 CFR is amended in § 114.1 by adding new paragraph (a) and redesignating paragraph (a) as (a–1), and adding new paragraph (w–1) after paragraph (w); and by revising § 114.5(b) to read as follows:

PART 114—ASSISTANCE FOR SCHOOL CONSTRUCTION IN AREAS AFFECTED BY FEDERAL ACTIVITIES

§ 114.1 Definitions.

As used in this part, the term:

(a) *Ability to provide a suitable free public education for the purposes of section 10 of the Act.* The Commissioner considers a local educational agency (LEA) able to provide a suitable free public education if the LEA—

(1) Has the authority under State law to provide suitable free public education to pupils residing on Federal property;

(2) Has not refused to provide that education;

(3) has the authority to provide educational facilities on property it does not own where the LEA determines that the property is necessary to serve pupils residing on Federal property; and

(4) Has the actual or potential financial resources and/or facilities to provide that education.

* * * * *

(w–1) Free public education is considered "suitable" for purposes of section 10 of the Act if—

(1) The primary language of instruction is English; and

(2) The school facility which a pupil attends or would attend is within the State's established maximum commuting distance from a pupil's home; and

(3) The programs of instruction offered or which can be offered with combined local, State, and Federal resources meet standards for State accreditation or approval. If the particular State has not established standards for accreditation or approval, the Commissioner applies appropriate accreditation associations' standards to assess suitability of the LEA's program of instruction; or

(4) In the judgment of the Commissioner, an arrangement under section 10 would operate, because of adverse social and political factors, to the serious detriment of the children to be served.

(20 U.S.C. 640(a)(2))

* * * * *

§ 114.5 Determination of priority indices and priority groupings for applications.

* * * * *

(b) For requests under section 10 of the Act, a priority index will be determined for the first pending requested project of each applicant by adding—

(1) The percentage that the estimated number of children for whom minimum school facilities are to be provided is of the total estimated number of all children residing and attending school on the installation at the close of the applicable period; and

(2) The percentage of the estimated school membership at such installation which is without minimum school facilities as of the same time.

However, in no case will the combined percentage used in determining the priority index exceed twice the percentage arrived at in subparagraph (1) of this paragraph. In determining the order of priority for approving applications under section 10, applications will be classified in priority groups for funding from funds allocated for applications under section 10 as prescribed in paragraph (c) of § 114.4. A priority listing will be established for each such group in the following order:

(i) Applications requesting major repairs necessary for the safety of school children or to prevent further deterioration of existing school facilities;

(ii) Applications in cases where upgrading or new construction or both is necessary to meet life safety and handicapped access standards;

(iii) Applications in cases where the LEA which operates the school program in school facilities located on Federal property has given assurance and a firm commitment to the Commissioner that, upon completion of the proposed project, it will accept ownership of such school facilities under section 10(b) of the Act;

(iv) Applications in cases where there are unhoused pupils; and

(v) Applications requesting the construction of capacity or noncapacity school facilities, or the rehabilitation or remodeling of existing school facilities which is required to bring the school facilities up to a standard which will permit the offering of a contemporary educational program.

(20 U.S.C. 640)

* * * * *

[FR Doc. 79-22745 Filed 7-23-79; 8:45 am]

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federal register

Tuesday
July 24, 1979

Part VI

Department of the Interior

Fish and Wildlife Service

Proposed Listing with Endangered Status for the American Crocodile and the Saltwater Crocodile Outside Papua New Guinea

DEPARTMENT OF THE INTERIOR

Fish and Wildlife Service

[50 CFR Part 17]

Endangered and Threatened Wildlife and Plants; Proposed Listing with Endangered Status for the American Crocodile Throughout its Range and the Saltwater Crocodile Exclusive of the Papua New Guinea Population

AGENCY: Fish and Wildlife Service, Interior.

ACTION: Proposed rule.

SUMMARY: The Service proposes that the American crocodile (*Crocodylus acutus*) and the saltwater crocodile (*Crocodylus porosus*) populations outside of Papua New Guinea be listed as Endangered species. This action is being taken because both species have suffered serious losses of habitat throughout their ranges and have been subject to extensive poaching for their hides. The Papua New Guinea population of *C. porosus* is not being included in this proposed action because of the assurances of the government of Papua New Guinea that crocodile farming is under strict control within that country and that wild populations are not being jeopardized by such activity. The Florida population of *C. acutus* is already listed as Endangered under provisions of the Act. This rule would provide additional protection to wild populations of both species, presently listed on the Appendices to the Convention on International Trade in Endangered Species of Wild Fauna and Flora, by futher restricting commercial trade in their parts and products.

DATES: Comments from the public must be received by October 26, 1979. Comments from the governments of the countries where these species occur must be received by October 26, 1979.

ADDRESSESS: Submit comments to Director (OES), U.S. Fish and Wildlife Service, Department of the Interior, Washington, D.C. 20240. Comments and materials relating to this rulemaking are available for public inspection during normal business hours at the Service's Office of Endangered Species, 1000 N. Glebe Road, Arlington, Virginia.

FOR FURTHER INFORMATION CONTACT: Mr. John L. Spinks, Jr., Chief, Office of Endangered Species, U.S. Fish and Wildlife Service, U.S. Department of the Interior, Washington, D.C. 20240 (703/235–1975).

SUPPLEMENTARY INFORMATION:

Background

The American crocodile, *Crocodylus acutus*, ranges throughout the Caribbean Sea, and on the Pacific Coast of Central and South America from Mexico to Ecuador in primarily coastal waters. Portions of the following countries are known to have or have had populations of this species: United States, Mexico, Colombia, Venezuela, Ecuador, Guatemala, El Salvador, Honduras, Nicraragua, Costa Rica, Panama, Trinidad and Tobago, Jamaica, Cuba, Haiti, the Dominican Republic, and Belize. The Florida population is currently listed as Endangered and its Critical Habitat has been determined (see the Federal Registers of September 25, 1975 [40 FR 44149–44151] and September 24, 1976 [41 FR 41914–41916]).

On May 23, 1975, Professor Federico Medem of the Faculty of Science of the National University of Columbia petitioned the Secretary of the Interior to list, under protection of the Endangered Species Act of 1973, the American crocodile throughout its range. However, only the Florida population was actually proposed and eventually listed.

The saltwater, or estuarine, crocodile, *Crocodylus porosus*, ranges throughout Southeast Asia and includes the countries of Australia, Papua New Guinea, Indonesia, Philippines, Malaysia, Thailand, Burma, Bangladesh, India, Cambodia, Vietnam, and Sri Lanka. This species may be the largest of reptiles, with reports of lengths well over 20 feet (7 meters), although leatherback sea turtles may weigh more.

All populations of the saltwater crocodile and all populations of the American crocodile, with the exception of those in Florida, were proposed as Endangered under the Similarity of Appearance clause of the Act (Federal Register of April 6, 1977; 42 FR 18287–18291); no final action has been taken as of this date on that proposal. Populations of *C. acutus* are listed on Appendix II (other than Florida which is on Appendix I) and *C. porosus* on Appendix I (other than Papua New Guinea which is on Appendix II) On the Convention of International Trade in Endangered Species of Wild Fauna and Flora.

In the Federal Register of February 5, 1979 (44 FR 7060–7061), the Fish and Wildlife Service published a Notice of Review on the status of these species. Information contained in the notice summarized existing knowledge concerning their status and the reasons for conducting the review. Persons who desire to review these data should consult this document or the *Endangered Species Technical Bulletin* of March, 1979; these documents are available from the Office of Endangered Species, U.S. Fish and Wildlife Service, Washington, D.C. 20240.

A total of 15 comments were received in response to the notice. These comments are summarized below:

Pong Leng-EE (Wildlife Conservation Division, Thailand): Mr. Leng-EE agreed that wild populations of the estuarine crocodile are in need of protection in Thailand but requested an exception to any rulemaking for those crocodiles raised on a breeding farm in Samutprakarn province.

Henry Norries (First Secretary, Embassy of Papua New Guinea, Washington, D.C.): Mr. Norries included a report on the status, protection and management of crocodiles in Papua New Guinea. Parts of this report are reprinted below.

1. *Status.*—Papua New Guinea is inhabited by two species of crocodiles: the saltwater or estuarine crocodile, *Crocodylus porosus* and the freshwater crocodile, *Crocodylus novaeguineae.*

The saltwater crocodile was extensively hunted in the 1950's and 1960's and has been generally much reduced in major rivers and estuaries. Residual populations still exist in certain major rivers and their tributaries, but no reliable estimates are available about the present status of the population. It is believed that the ban on export of skins greater than 20" belly-width provides reasonable protection of the adult population. However, a high proportion of the juveniles are vulnerable to the hunter. There are no indications that the program of farming crocodiles has resulted in an increased decline of the wild population.

The freshwater crocodile is well established in large expanses of freshwater swamp, which restricts the proportion of juveniles which can be caught. Because it occurs in these strongholds in reasonable numbers and because efficient hunting in these areas is generally almost impossible, there does not seem to be any indication that this species may be endangered. The species has, however, been virtually eliminated from the major rivers.

2. *Protection.*—The following laws are relevant to crocodile protection in Papua New Guinea:

1. The fauna (Protection and Control) Act of 1966, its amendments of 1970 and Regulations of 1974;

2. The Customs (Prohibition) Act Regulations, and

3. The Crocodile Trade Act, 1966.

Under these acts and regulations, the illegal and commercial export of crocodile skins has been controlled.

Records are being kept on the export of all crocodile skins.

Crocodiles over 20" belly-width cannot be legally traded; this serves to protect the adult population.

Illegal skins are confiscated and offenders prosecuted.

3. *Management.*—Crocodiles in Papua New Guinea are managed by the National Crocodile Project, assisted by a UNDP/FAO project since 1 January 1977. The objectives of the management program are the following:

1. Prevent species extinction;

2. Assess stocks and enhance recovery towards ecologically optimal levels, and

3. Develop controlled commercial utilization in such a way that ultimately a sustained utilization can be obtained.

With assistance from the UNDP/FAO project, a network of village, business and government crocodile farms has been established as follows (March 1979):

Village farms, 130.
Business Farms, 10.
Government farms, 5.

The objective of the farming program is to raise crocodiles to commercial slaughtering size and to reduce mortality (which is presumed to be higher in the wild).

During the last three years a captive breeding program has been established and the following number of crocodiles of breeding age are kept on the government farm at Moitaka:

Female *C. novaeguineae*, 24.
Male *C. novaeguineae*, 13.
Female *C. porosus*, 30.
Male *C. porosus*, 16.

This program has been successful insofar as most captive females have laid eggs and hatchlings have been successfully reared for three years in succession. This year mortality among hatchlings will be reduced considerably, because of improved facilities. The breeding program of saltwater crocodiles will be stepped up considerably.

The government has agreed with UNDP to extend the FAO project on assistance to the crocodile skin industry to include monitoring and a program has been planned for implementation. It should therefore be possible by the end of 1979 to produce a report on population trends and to arrive at a better undertstanding of whether or not the saltwater crocodile population is over-exploited.

Dr. Leslie Garrick: Dr. Garrick offered additional information to that contained in the Notice of Review on American crocodile populations in the Canal Zone, Dominican Republic, and Jamaica. He suppported listing this species on appendix I of the Convention.

Stefan Graham (Director, Baltimore Zoo): Mr. Graham supported protection for these species because of the threats of taking for hides and lack of protection in many areas of their ranges.

Ray Pawley (Curator of Reptiles, Brookfield Zoo): Mr. Pawley provided data on crocodile populations in the Dominican Republic, particularly at Isla Cabritos. He recommended encouraging the protection of the two breeding groups of American crocodiles occurring at Isla Cabritos.

Peter C. H. Pritchard (Florida Audubon Society): On behalf of the Florida Audubon Society, Dr. Pritchard supported a proposal to list both species as Endangered. With regard to crocodile farms, Dr. Pritchard states:

> In some areas, such as Papua New Guinea, the estuarine crocodile is harvested under a reasonably controlled program, and it is probably not necessary for this harvest to be stopped at present. Similarly, estuarine crocodiles are raised commercially on several farms in South-east Asia. However, there is no need for hides from these operations to be exported to the United States, and indeed it would be better if these hides were exported to other areas, such as France and Italy, over which the United States has no control, so that they may partially displace the demand for hides from other areas or of truly endangered crocodilian species.

Seymour Levy (Safari Club International): Mr. Levy provided information on crocodile farming in Papua New Guinea and stressed the need for providing economic incentive. He also stated that he hoped the estuarine crocodile would be retained on Appendix II to the Convention instead of transferring it to Appendix I.

A. de Vos (Project Manager, FAO, Papua New Guinea): Mr. de Vos took issue with Dr. Faith Campbell's statements on crocodile scarcity contained in the Notice of Review by indicating that estuarine crocodiles can be observed "regularly in some numbers" in the Fly, Bensbach, and Turama Rivers. Mr. de Vos also included a statement by M. Raga outlining the crocodile industry in Papua New Guinea in relation to crocodile conservation. Mr. Raga states "even though there may have been some over-exploitation of the wild crocodile population of Papua New Guinea in recent years, the populations of both species (*C. porosus* and *C. novaeguineae*) are far from threatened at present."

The Service also received information from U.S., embassies in Haiti, Ecuador, Costa Rica, Malaysia and Papua New Guinea which stated that: officials in Malaysia believe the estuarine crocodile to be very endangered; that officials in Papua New Guinea do not believe a ban on the importation of crocodile skins to be in the best interests of either that country or the conservation of the species; that the crocodile is almost extinct in Haiti although there may be a few in Lake Saumatre; studies are underway on the crocodile in Ecuador; crocodiles are uncommon in Costa Rica and there is illegal trade of skins to Nicaragua.

The most completed data on both species were supplied by Dr. F. Wayne King of the New York Zoological Society. He submitted two reports which summarize the known status of these species: "Review of the status of the American crocodile, *Crocodylus acutus*" by F. W. King, H. W. Campbell, and F. Medem, and "Review of the status of the estuarine or saltwater crocodile, *Crocodylus porosus*" by F. W. King, H. W. Campbell, H. Messel, and R. Whitaker. Both reports are extensive and document the decline of the two crocodiles. The summaries are reprinted below:

"In summary, there appears to be no area within the historic range of *Crocodylus acutus* where healthy populations exist without serious threat from exploitation and/or habitat degradation. The species exists today only in isolated, small populations scattered in the more isolated and impenetrable areas within the historical range and, wherever found, it is still hunted commercially or for local consumption (both eggs and flesh) or killed as vermin. Wherever data exist, over-exploitation for hides is clearly indicated as a major factor in the reduction of populations to the present lows, but today this threat is compounded by habitat degradation and/or increased human activities (commercial fisheries, etc.) in the remaining habitat. The species is recognized as endangered by the IUCN/SSC Crocodile Specialist Group."

Crocodylus porosus is a wide-ranging species which is virtually extinct or reduced to small populations throughout the bulk of its range. Very few actual population data are available for the species, but all available observations indicate dramatic population reductions from historical levels as a result of unregulated hide exploitation, vermin control, and habitat loss. The volume of hides being traded internationally has dropped from over

100,000/year to fewer than 20,000/year in the last decade (Fuchs, personal comm.), while prices have been rising. The species is unprotected over most of its range and is most heavily commercialized in those countries without the protection of any program of census or management. The species is only managed, by any modern concept of wildlife management, in Papua New Guinea which still, however, has no active census program. It is effectively protected only in Australia where extensive studies suggest no actual recovery over the last five years.

The proposal of the government of India to place its population of *Crocodylus porosus* on Appendix I of the Convention on International Trade in Endangered Species of Wild Fauna and Flora is fully supported by the available data, but the vast majority of all other *C. porosus* populations are equally threatened with extinction. Clearly closure of international trade in hides and other products of *C. Porosus* is mandated by the available information. Recognition of the status of the wild populations led the IUCN/SSC Crocodile Specialist Group in 1978 to recommend placement of *Crocodylus porosus* on Appendix I of the CITES. We concur with the recommendation and urge the entire species (all populations) be placed in Appendix I of the CITES until the wild populations have recovered and adequate, national management programs for the species are developed and implemented.

Robert O. Wagner (American Association of Zoological Parks and Aquariums): On behalf of the AAZPA, Mr. Wagner supported the listing of the two crocodiles because of rather dramatic population declines in recent years.

This should be deleted or broadened. We are also relying on other evidence we had before the review and Office of Endangered Species' professional expertise. The Director has determined that the American crocodile populations outside of Florida and all populations of the estuarine (saltwater) crocodile, except those of Papua New Guinea, should be proposed as Endangered species. Those populations of *C. porosus* in Papua New Guinea will be continued to be considered for listing under the Similarity of Appearance clause of the Act (see the **Federal Register** of April 6, 1977 (42 FR 18287–18291)); a decision concerning this population will be made at a later time.

Section 4(a) of the Act (16 U.S.C. 1531 et. seq.) states:

General—(1) The Secretary shall by regulation determine whether any species is an endangered species or a threatened species because of any of the following factors:

(1) The present or threatened destruction, modification, or curtailment of its habitat or range;

(2) Overutilizastion for commercial, sporting, scientific, or educational purposes;

(3) Disease or predation;

(4) The inadequacy of existing regulatory mechanisms; or

(5) Other natural or man-made factors affecting its continued existence.

This authority has been delegated to the Director.

Summary of Factors Affecting the Species

These findings are summarized herein under each of the five criteria of Section 4(a) of the Act. These factors, and their application to the American crocodile outside of Florida and the estuarine crocodile populations outside of Papua New Guinea, are as follows:

1. *The present or threatened destruction, modification, or curtailment of its habitat or range*—The increasing human population throughout the ranges of these species has resulted in a loss of much available habitat for the crocodiles. Because crocodilians do not tolerate much disturbance, especially during nesting seasons, human populations have impacted the species by harrassment as well as by direct destruction of suitable basking and nesting sites. This problem (habitat destruction due to encroaching human population) is especially severe in Central America, the Caribbean, and South America (for the American crocodile) and Southeast Asia, such as Sarawak and Sri Lanka (for the estuarine crocodile). It is most probable that the continuing expansion of human populations in these areas will result in increasing amounts of habitat destruction and harrassment (i.e. curtailment of its range) in the future.

2. *Overutilization for commercial, sporting, scientific, or educational purposes*—This is the major factor involved in the decline of both *C. acutus* and *C. porosus*. The hides are extremely valuable in the production of fashionable leather luxury items; this has led to the severe decline or elimination via hunting of virtually all populations of both species where not protected. Indeed, even in countries with restricted taking of and commerce in crocodiles, poaching continues to severely impact crocodilian populations. In some countries, poorly managed and ill-conceived commercial crocodile farming schemes have also resulted in a drain on populations, particularly of *C. porosus*, since they often rely on young collected in the wild. Some farms have gone as far as to hybridize *C. porosus* with protected species in order to circumvent trade and conservation restrictions, thus resulting in a drain on both species involved. Commercial exploitation can be expected to continue as prices are high and regulatory mechanisms are weak or lacking.

3. *Disease or predation*—These factors are probably not significant in the decline of *C. acutus* and *C. porosus*. However, natural predation may seriously affect the ability of populations already reduced through overexploitation and habitat destruction to maintain themselves.

4. *The inadequacy of existing regulatory mechanisms*—While many of the countries where these species occur have laws to protect crocodilians, they are often ignored, unenforced, or impossible to enforce because of lack of manpower, funds, or magnitude of the problem. The lack of effective means to protect crocodilians is a major problem in the conservation of wild populations of these species; this is especially true with both *C. acutus* and *C. porosus*.

5. *Other natural or man-made factors affecting its continued existence*—Malicious killing of these crocodilians occurs wherever they are found and undoubtedly contributes to their decline, especially in areas near human populations. Crocodiles are also take accidently by fishing nets and are killed whenever encountered especially *C. porosus*, where the species has a reputation as a maneater.

Effects of the Rulemaking

Endangered species regulations already published in Title 50 of the Code of Federal Regulations set forth a series of general prohibitions and exceptions which apply to all endangered species. The regulations referred to above, which pertain to Endangered species, are found at Section 17.21 of Title 50, and are summarized below.

With respect to the American crocodile and estuarine crocodile (except the Papua New Guinea population), all prohibitions of Section 9(a)(1) of the Act, as implemented by 50 CFR 17.21, would apply. These prohibitions, in part, would make it illegal for any person subject to the jurisdiction of the United States to take, import or export, ship in interstate commerce in the course of a commercial activity, or sell or offer for sale these species in interstate or foreign commerce. It also would be illegal to possess, sell, deliver, carry, transport, or ship any such wildlife which was illegally taken. Certain exceptions would apply to agents of the Service and State conservation agencies.

Regulations published in the **Federal Register** of September 26, 1975 (40 FR 44412), codified at 50 CFR 17.22 and

17.23, provided for the issuance of permits to carry out otherwise prohibited activities involving Endangered or Threatened species under certain circumstances. Such permits involving Endangered species are available for scientific purposes or to enhance the propagation or survival of the species. In some instances, permits may be issued during a specified period of time to relieve undue economic hardship which would be suffered if such relief were not available.

Endangered Species Act Amendments of 1978

The Endangered Species Act Amendments of 1978 specify that the following be added at the end of subsection 4(a)(1) of the endangered Species Act of 1978:

At the time any such regulation (any proposal to determine a species to be an Endangered or Threatened species) is proposed, the Secretary shall by regulation, to the maximum extent prudent, specify any habitat of such species which is then considered to be critical habitat.

Since the species under consideration in the rulemaking are not domestic, this amendment does not apply.

The Endangered Species Act Amendments of 1978 further state the following:

(B) In the case of any regulation proposed by the Secretary to carry out the purposes of this section with respect to the determination and listing of endangered or threatened species and their critical habitats in any State (other than regulations to implement the Convention), the Secretary—

(i) shall publish general notice of the proposed regulation (including the complete text of the regulation), not less than 60 days before the effective date of the regulation;

(I) In the **Federal Register**; and

(II) If the proposed regulation specifies any critical habitat, in a newspaper of general circulation within or adjacent to such habitat;

(ii) Shall offer for publication in appropriate scientific journals the substance of the **Federal Register** notice referred to in clause (i)(I);

(iii) Shall give actual notice of the proposed regulation (including the complete text of the regulation), and any environmental assessment or environmental impact statement prepared on the proposed regulation, not less than 60 days before the effective date of the regulation to all general local governments located within or adjacent to the proposed critical habitat, if any; and

(iv) Shall—(I) if the proposed regulation does not specify any critical habitat, promptly hold a public meeting on the proposed regulation within or adjacent to the area in which the endangered or threatened species is located, if request therefore is filed with the Secretary by any person within 45 days after the date of publication of general notice under clause (i)(I), and

(II) If the proposed regulation specifies any critical habitat, promptly hold a public meeting on the proposed regulation within the area in which such habitat is located in each State, and, if requested, hold a public hearing in each such State.

In the case of the two crocodiles herein considered, Section 4(B)(i)(I) above is hereby complied with. In addition, the following scientific journals will be notified of the proposal and offered a copy of the **Federal Register** document for either publication or distribution to scientists: Copeia, Herpetologica, Herpetological Review, and the Journal of Herpetology. Since these species are not domestic and no critical habitat is included in the proposal, none of the other amended subsections of this Section are applicable.

Public Comments Solicited

The Director intends that the rules finally adopted will be as accurate and effective as possible in the conservation of any Endangered or Threatened species. Therefore, any comments or suggestions from the public, other concerned governmental agencies, the scientifc community, industry, private interests, or any other interested party concerning any aspect of these proposed rules are hereby solicited. Comments particularly are sought concerning:

(1) Biological or other relevant data concerning any threat (or the lack thereof) to the American crocodile and Estuarine crocodile;

(2) Additional information concerning the range and distribution of these species.

National Environmental Policy Act

A draft environmental assessment has been prepared pursuant to the Executive Order 12114 and is on file in the Service's Washington Office of Endangered Species, Suite 500, 1000 N. Glebe Road, Arlington, Virginia. It addresses this action as it involves the two crocodilians.

The primary author of this rule is Dr. C. Kenneth Dodd, Jr., Office of Endangered Species (703/235–1975).

Regulations Promulgation

Accordingly, it is proposed that Part 17, Subchapter B of Chapter I, Title 50 of the U.S. Code of Federal Regulations be amended as follows:

1. By adding the American crocodile throughout its range and the estuarine crocodile (exclusive of the Papua New Guinea population) to the list, alphabetically, under "Reptiles" as indicated below:

§ 17.11 Endangered and threatened wildlife.

* * * * *

Species		Range			Status	When listed	Special rules
Common name	Scientific name	Population	Known distribution	Portion endangered			
Reptiles:							
Crocodile, American	Crocodylus acutus	N/A	U.S.A. (FL); Mexico, S. & C. America; Caribbean.	Entire	E	10	N/A
Crocodile, Saltwater (estuarine)	Crocodylus porosus	Entire, except Papua New Guinea	Southeast Asia, Australia, Papua New Guinea, Pacific Islands.	Entire, except Papua New Guinea.	E		N/A

Note.—The Department of the Interior has determined that this rule is not a significant rule and does not require preparation of a regulatory analysis under Executive Order 12044 and 43 CFR 14.

Dated: July 12, 1979.

M. Spear,

Acting Director, Fish and Wildlife Service

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