

Background Information on the 1983 Western Spruce
Budworm Project in Eastern Oregon

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Per your request, this letter documents background information on the 1983 Western Spruce Budworm Project in eastern Oregon relating to Project organization, contract awards, training, and results for your use in responding to the GAO. This also summarizes the results of the critique in Portland on August 3 and 4, and lists major needs surfaced in the critique. We have prepared an Action Plan to address these needs should a project be forthcoming in the near future. A copy of this is enclosed.

PROJECT BACKGROUND

Based on an extensive aerial survey for defoliation and subsequent ground searches for egg masses, an Environmental Assessment Report was prepared which recommended, in January 1983, treatment of 1.4 million acres for control of western spruce budworm in the Blue Mountains of northeast Oregon. Monetary constraints at both the State and Federal level resulted in a project designed to aerially treat only 529,000 acres, primarily with Sevin 4-Oil $\frac{1}{2}$. About 179,000 acres had been treated in 1982 with Sevin 4-Oil $\frac{1}{2}$ and Orthene $\frac{1}{2}$. No area treated in 1982 was retreated in 1983. The 1983 Project was the largest use of helicopters for forest spraying ever made in North America. At the peak of spraying, 19 spray and nine observation helicopters were in use. A total of more than 1/2 million miles were driven and over 75,000 person hours were worked on the Project. Some 5,000 to 6,000 miles of perennial streams occurred in the spray area and were buffered. The Project was completed before the insects had developed beyond the treatable stage, and effectiveness on most of the area reached or exceeded Project goals.

Organization and Planning--The first organizational meeting of key project staff was held in late February, and planning and organizing began immediately thereafter. Being a cooperative venture, both Oregon State Department of Forestry and USDA Forest Service personnel were involved in virtually all phases of preparation and subsequent execution. Some of the preparatory tasks accomplished were: (1) selection of personnel (virtually all key staff had experience on large insecticide projects, as did about 50% of all others); (2) revisions of existing operations plans such as safety, air operations, and monitoring were made to meet the needs of the 1983 Project; (3) an entomological plan was prepared; (4) contracts for observation and application aircraft were written, advertised, and awarded; (5) several meetings with land managers were held to agree on area boundaries and treatment priorities; (6) contacts with private landowners in potential treatment areas were made; (7) numerous contacts with State legislative committees and groups were made;

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(8) supplies and equipment were purchased; (9) vehicles and radios were obtained; (10) maps were prepared; (11) office space and other accommodations with appropriate utilities were arranged; and (12) press releases were made.

Contracting--Awards for a total of eight observation helicopters were made to Rambling Rotors, La Grande, Oregon; Gem State Helicopters, Caldwell, Idaho; Mountain Air Helicopters, Albany, Oregon; and Hillcrest Aircraft, Lewiston, Idaho. These operators were all small business concerns. All helicopters furnished for observation and administration were Bell 206B's.

Application contracts, which also included the supplying, transporting, and storing of insecticide, were awarded to three companies. Unless justification can be shown to do otherwise, all Forest Service contracts of this nature must be to small business. It was determined that small business capacity was not great enough to do the entire project but could handle a significant portion.

The first contract for 132,517 acres or 25 percent of the total was awarded on May 25 to the Small Business Administration, who in turn negotiated the work to Spokane Helicopters, Spokane, Washington, under the 8A provision (minority-small business).

The second application contract was for 136,975 acres or 26 percent and was limited to small business. It was awarded to Golden Eagle Helicopters, Roseburg, Oregon, on May 24.

The third contract, 259,268 acres or 49 percent, was available to all bidders and was awarded to High Life Helicopters, Puyallup, Washington, on May 24. High Life had just recently grown into the large business category and is minority owned.

Two requests for a temporary restraining order were filed in court against the USDA concerning the award of contracts on this Project. Heli-Jet Corporation filed a complaint on May 23, in the United States Claims Court, seeking a temporary restraining order, a preliminary injunction, and such other relief as appropriate. Golden Eagle Helicopters was the low bidder at \$6.57 per acre on a small business set-aside and Heli-Jet Corporation had bid \$8.83 per acre. A hearing was held on May 24. Heli-Jet Corporation sought to prevent the Government from making an award of the contract to another bidder. In this hearing, the plaintiff, in order to be successful, had to establish:

"(1) That the procurement procedure involved a clear and prejudicial violation of applicable statutes or regulations; or

"(2) That there was no rational basis for the agency's decision in a matter committed primarily to the contracting officer's discretion." Judge Yannello denied the motion for a temporary restraining order and a preliminary injunction.

132,517
136,975
259,268

528,760

Evergreen Helicopters also filed against the USDA concerning the award of the largest contract to High Life Helicopters. The plaintiff had questioned whether High Life would qualify as a "responsible" contractor as defined in Federal regulations. On June 8, a hearing was held in United States District Court for the District of Oregon. Judge Panner denied the plaintiff's request for a temporary restraining order.

The contract award of the 1982 Western Spruce Budworm Project was made to Spokane Helicopters. Golden Eagle Helicopters and High Life Helicopters worked together with Spokane Helicopters to treat 179,000 acres in the same general area as the 1983 Project. The performance of the applicators was judged good, and no major incidents or accidents occurred. In addition, High Life Helicopters had treated 7,700 acres in 1976 and 97,000 acres in 1977 for budworm control in the State of Washington under Forest Service contract and had performed in a credible manner. Therefore, there was no reason to believe that these firms could not perform successfully in 1983. After reviewing the contract award procedures, we feel that our award was appropriate.

During and after the Project, because of the spills and accidents, several questions were raised about the quality of the spray contractors. During the week of June 20, Contracting Officer, Richard E. Denker, visited the Project to assess the quality of contractors' pilots and equipment. This visit was prompted by the Willow Creek spill and subsequent aircraft accidents. In summary, he felt, from a contracting standpoint, that High Life Helicopters and Golden Eagle Helicopters performed satisfactorily. He did feel that Spokane Helicopters "needs stronger overhead support and financial development to become a viable self supporting firm."

Training--Intensive training was given to all personnel prior to the start of each phase of the operation. Total training of the Entomology Group covered about a week and included safety, map preparation, sampling procedures for populations and development, larvae instar identification, and spray deposition and efficacy. Cross training was provided some entomology personnel in limited phases of aerial operations.

Total training for the Air Operations group covered about 2 weeks. Subjects included were personnel and aircraft safety, helicopter operations, spray system calibration and characterization, contract administration, aerial observation, etc. All of the key air operations people were well experienced in large insect control projects.

Contractor Briefings -- A 1/2-day pre-work conference was held in John Day with the contractors, air operations officer and staff, contracting officer, and administrative contracting officer to explain the basics of the Project. Immediately after this session, the contracting officer and administrative contracting officer met with the three contractors to further define the requirements of the contract. Daily, the Air Operations Officer (who was also the contracting officer's representative) discussed block releases, accomplishments, problems, and their solutions with each of the contractors.

In addition, a special meeting was held in John Day about halfway through the Project between the Oregon Department of Environmental Quality representatives, air operations officer, and the three contractors to review State pesticide handling requirements and spill contingency plans.

Treatment--Actual treatment or spraying was scheduled to begin when the larvae (worm stage) in individual spray blocks had developed or grown to 50 percent in 4th instar or larger and tree buds were fully open. Once a spray block was released for treatment, the contractor had 72 hours in which to complete spraying.

The first block was released for treatment on June 10. However, spraying did not begin until June 12 due to inclement weather. Spraying continued about every day until it was completed on July 17. The average spray day began at approximately 5 a.m. and lasted 2½ to 3 hours. As many as 19 spray and nine observation helicopters were used at the peak of spraying. The most acres sprayed in any day was 40,692. The mishaps which occurred during this application phase were:

1. GOLDEN EAGLE HELICOPTERS -- Tank truck spilled 1,890 gallons of mixed Sevin 4-Oil½ into Willow Creek.
2. SPOKANE HELICOPTERS -- Helicopter crash at Snowbeard Mountain. Two gallons of mix fell on dry ground.
3. HI-LIFE HELICOPTERS -- 10-20 gallons of mix fell into Chapin Creek when a spray tank shifted, tripping the dump valve; 180-190 gallons fell on dry ground.
4. SPOKANE HELICOPTERS -- 60 gallons of mix fell on the road in a 3-mile stretch of Highway 19 when the end of a hose fell off a truck and was dragged along the highway.
5. HI-LIFE HELICOPTERS -- 4 gallons were dumped on a dirt road in the Rudio Mountain Unit when a hose fitting came loose.
6. SPOKANE HELICOPTERS -- 400 gallons were spilled on dry ground at an Antelope Mountain heliport when a helicopter lost power and crashed.
7. HI-LIFE HELICOPTERS -- 10-20 gallons of mix were spilled into Cow Creek when a helicopter struck a tree, forcing a hard landing.
8. HI-LIFE HELICOPTERS -- About 2-1/2 miles of Cow Creek were accidentally oversprayed.
9. SPOKANE HELICOPTERS -- About 9-1/2 miles of Cottonwood Creek were accidentally oversprayed.

The Project was completed during the critical period of western spruce budworm development--to be effective spraying must take place before pupation occurs. In most units, larvae populations were reduced to the target originally set. This is discussed in the next section.

During the second day of the critique, a larger group of Forest Service and Oregon Department of Forestry people met to review the previous day's summary and list issues and concerns.

The major points resulting from this discussion are:

1. We need to meet with appropriate State and Federal agencies who have resource management and/or enforcement roles well in advance of a project to let them know what is proposed and define the role of each agency. In Oregon, the agencies included would, as a minimum, be: Oregon Departments of Forestry, Agriculture, Environmental Quality, State Police, Fish and Wildlife, Employee Compensation, and Transportation; U.S. Fish and Wildlife Service; and Federal Aviation Administration.

2. Some Project personnel are still uncertain as to their authority/responsibility under a full-service contract. Some people perceived that they can't instruct a pilot to shut down if he/she has a drooling nozzle or provide recommendations on improving spray application to a pilot. This sort of action can be done under a full-service contract and must be emphasized to every person working on a project.

3. On a project of this size and complexity, public awareness is essential. In 1983, we utilized the Malheur National Forest PIO on a part-time basis. She did an excellent job when called upon. We feel, however, that we need a full-time PIO to develop and carry out an information plan for this type of project. This person should be assigned at an early stage and allowed to work through the completion of the project to provide a continuity in public information releases.

4. Results from biological monitoring indicate some variability in treatment effectiveness. This could be tied to weather during application, terrain, stand conditions, spray equipment, pilot error, or other facets of application. We need to identify the conditions/situations that resulted in both good and marginal results and emphasize the "good" practices in future operations.

5. Spills and accidents are undesirable. Several significant ones occurred on the 1983 Project. We need to identify practices and procedures that can prevent or minimize spills and accidents in future projects.

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We hope that the information included in this letter will be of value to you. We have enclosed an Action Plan that we have prepared to investigate the major items discussed above.

JEFF M. SIRMON
Regional Forester

Enclosure

cc:

LeRoy Kline
Jim Space
Jim Stewart
Fiscal Management
Administrative Services
Aviation & Fire Management

PEBuffam:pjj 11/3/83

ACTION PLAN

Pursuant to the Project Critique, the following plan of action is herewith presented:

ITEM I

Situation: Several agencies did not feel in retrospect that they had early enough orientation to the 1983 Project plans to plan for and carry out their responsibilities.

Who: LeRoy Kline (OSDF), 1984 Project Liaison Officer, Paul Buffam, and 1984 Project Director.

What: A meeting will be called with Oregon Departments of Forestry, Agriculture, Environmental Quality, State Police, Fish and Wildlife, Employee Compensation, Transportation, U.S. Fish and Wildlife, FAA, and NTSB, to discuss roles and responsibilities and contingencies should there be a project in 1984. A contingency plan will be developed by those agencies having responsibility for spill cleanup and coordination. A prework meeting will also be held with the contractors to explain the roles of the different agencies and that of the contractor.

When: Complete by March 15, 1984, if there is a project in 1984.

ITEM II

Situation: Some project personnel were uncertain as to their authority/responsibilities under a full service contract.

Who: Air Operations Officer, Contracting Specialist, Aviation Specialist, Project Director, and LeRoy Kline and Paul Buffam.

What: We need to insure that everyone on the Project understands their roles and responsibilities. We will put together a revised training program for all project personnel to be given before start of next project, including roles and responsibilities of the different positions and authority under a full-service contract. Responsibilities of the contractor will be handled at the prework conference.

When: Complete by May 1, 1984, if there is a project in 1984.

ITEM III

Situation: Better public awareness is needed on a project of this size and complexity. A well-trained, experienced information specialist should be assigned full-time to a project of this kind to provide meaningful and timely input to the public.

Who: Deputy Regional Forester Space.

What: Select PIO as member of key staff to prepare and carry out an information plan.

When: March 1984, if there is a project in 1984.

ITEM IV

Situation: Some erratic results have occurred in insect mortality in treatment areas. An objective review of application, insecticides, weather, stand characteristics, etc., is needed to design an effective process.

Who: Entomologists (Bridgwater, Joseph, and Hostetler), Air Operations (J. Warner), Aviation Management, Contracting, LeRoy Kline and Paul Buffam.

What: Review past results and develop criteria for conduct of future aerial application that will result in objective application. We will consider specifying smaller aircraft, rotary nozzles, spray boundary or swath markers, treating buffer strips along streams with B.t., an observation plane for each spray plane, and only one spray block to be treated at a time. These criteria will be included in future project plans.

When: By March 1, 1984.

ITEM V

Situation: Too many spills and aircraft accidents occurred on the 1983 Project. Future projects should enforce procedures that will prevent such accidents/spills or minimize their impact.

Who: Kline, Buffam, and 1984 Project Director.

What: We will formulate procedures to prevent spills/accidents and/or minimize their impact and list these in future project plans. We will consider requiring pilot cars for tank trucks; prespray inspection of tank trucks for spill equipment; requiring that no heliports be located adjacent to or in meadows; rotary atomizer nozzles be used to minimize the number of small and large spray droplets; spraying buffer strips along streams with B.t.; requiring an observation plane for each spray plane; requiring smaller, slower-flying spray aircraft; and using more markers to identify block boundaries and critical no-spray areas.

When: By April 15, 1984.

END

1983 Suppression Projects-
estimated costs by project

	acres	Prop. of total acres	\$
Aldrich	118,824	0.1915	\$929,140
Butte	6,094	0.0098	\$47,652
Logan	107,751	0.1736	\$842,555
King	16,991	0.0274	\$132,861
Matlock	88,883	0.1432	\$695,017
Miller Prairie	132,670	0.2138	\$1,037,408
Putney	40,266	0.0649	\$314,859
Pearson	25,270	0.0407	\$197,598
Pogue Pt-A	14,121	0.0228	\$110,419
Pogue Pt-B	11,123	0.0179	\$86,976
Pogue Pt-C	12,280	0.0198	\$96,023
PA	16,899	0.0272	\$132,141
Rudio Mtn	23,978	0.0386	\$187,495
Snow	5,377	0.0087	\$42,045
Total	620,527	1.0000	\$4,852,189

Total Dollars \$4,852,189

Estimates from Sirmon memo:

total acres:	524,561
costs per acre:	\$9.25
 acres* cost =	 \$4,852,189