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**NATIONAL PARK SERVICE
BENCHMARK POSITION DESCRIPTION**

**Horticulturist
GS-437-12**

Introduction

The incumbent serves one or more parks as a specialist in the principles and practices of landscape management with advanced training in the science, theories, concepts, methods, and techniques of horticulture and related fields. The horticulturist is responsible for program development and implementation to protect and preserve physical characteristics, biotic systems, historic, and contemporary use of the parks' landscape.

Major Duties (80-100%)

Directs an intricate program of horticultural and landscape management activities involving sensitive and complex issues that may impact a wide variety of park resources and operations.

Represents the superintendent when working with others on horticultural matters. Develops and maintains liaisons and effective working relations with related groups and individuals, agencies, and the public. Attends management and professional conferences and other events for the purposes of exchanging information and advancing advocacy for park stewardship.

Serves as the professional horticulturist responsible for the identification, research, planning, treatment, preservation, and maintenance of landscapes. Performs duties associated with review, design, treatment, stewardship, and monitoring of landscapes.

Develops and prepares sections of the resources management plan dealing with horticulture and related landscape, vegetation, and soil management. Prepares specific action plans needed to manage the flora and soil components of landscapes.

Represents park on NPS regional task groups or similar organizations. Makes presentations in the parks, in public gatherings, and at professional meetings.

Assists other parks, centers, and support offices by providing direct professional and programmatic advice and support.

Carries out program management duties by developing and managing work plans and schedules, scopes of work, cost estimates, and budget proposals and/or grants to

justify funding requests and accomplish goals. May administer and track project and operation funds and prepare accomplishment reports, as needed. Maintains awareness of applicable funding sources within NPS and outside.

Develops and implements long range plans for the inventory, evaluation, documentation, preservation, research, and interpretation of horticultural and other landscape resources within the appropriate mission, objectives, and resources contexts.

Develops guidelines and solutions for complex or unusual landscape management problems, or where fixed processes and proven methods/models do not exist. Serves as principal coordinator for the preservation, restoration, and/or rehabilitation of cultural landscapes, including features such as tree and shrub plantings, formal gardens, fields, wetlands, ponds, trails, and roads. Responsible for preserving historically and/or botanically significant plants through field conservation and/or clonal propagation to protect the integrity and character of cultural landscapes. Supervises cultural landscape treatment and construction activities. Records all landscape preservation, restoration, rehabilitation or treatment activities for the historical record.

Performs data collection using advanced technology such as electronic data collectors when appropriate. Performs data entry and carries out quality control checks on data collection and entry performed by others. Conducts analysis of complex data. Determines and documents the significance of findings.

Negotiates cooperative and interagency agreements and other cooperative instruments needed to effectively carry out resource stewardship goals.

Identifies research needs, prepares requests for research proposals or statements of work, and provides oversight for scientific and historical research projects. Serves as Contracting Officer's Technical Representative for projects conducted through contracts, interagency agreements, and cooperative agreements. Evaluates research results for management implications.

Conducts and coordinates research projects related to the identification, documentation, evaluation, and treatment of landscapes. Examines historical documents, photographs, maps and drawings, and related items to develop knowledge of and data about specific cultural landscapes and their features, such as period design concepts, land use patterns, cultural traditions, period maintenance practices, period landscape character, and historic plant materials.

Designs, develops, tests, and implements scientific monitoring protocols for the long-term monitoring of landscapes and horticultural resources. Develops monitoring systems that address current management needs and improve quality and value of data collected. Conducts monitoring of landscape and associated resources, collects and analyzes data, evaluates significance of findings, prepares reports, makes

recommendations for follow-up.

Prepares management and scientific reports regarding the results of restoration, construction, inventory, monitoring, and research activities. Summarizes new and conventional information for use by scientists, managers, park staff, preservation communities, cooperators, and partners.

Determines effectiveness of landscape maintenance and management programs and operations as applied to acceptable horticultural standards. Conducts inspections, prepares recommendations and reports, and maintains detailed records and data of landscape maintenance operations, historical records, and the condition of landscape features.

Provides technical guidance for landscape management operations determining equipment and material requirements, and has items ready so as not to delay work. Explains work requirements, methods, and procedures based on horticultural standards. Trains crews to use proper techniques and may directly supervise work.

Develops landscape maintenance plans, specifications, and schedules. Conducts feature inventories and condition assessments, determines stabilization and corrective work needed, establishes routine and cyclic maintenance program, sets operational priorities, keeps records of maintenance activities and evaluates effectiveness of landscape maintenance operation.

Incorporates appropriate Geographic Information System (GIS) technology into job to provide comprehensive and scientifically sound answers to inquiries from managers and others. Uses automatic methods of data collection, analysis or illustration. Inputs data into digital form and uses computer applications for data analysis, manipulation, and presentation.

Prepares environmental assessments (EAs) related to park projects in compliance with the National Environmental Policy Act and ensures compliance with the National Historic Preservation Act. Evaluates EAs and environmental impact statements prepared by other agencies for projects that may effect park resources.

Conducts plant inventories, identifies plant species, determines threatened/endangered or rare status, and documents location and range. Collects, prepares and documents representative plant specimens for the park herbarium. Designs floral displays.

May serve as integrated pest management coordinator to identify pests, monitor activity and damage, set action thresholds, establish treatment, monitor results, evaluate treatments, and prepare reports.

May supervise seasonal, temporary, permanent, VIP, and other personnel, but less than 25% of the time.

Factor 1. Knowledge Required by the Position Level 1-7; 1250 points

Knowledge of NPS planning and management requirements and guidelines so that plans result in programs that provide adequate long-term protection for park resources.

Professional knowledge of the scientific theories, practices, and principles which underlie the discipline of horticulture. Ability to use this knowledge to recognize a substantial range of horticultural problems and the scientific implications of these problems.

Comprehensive knowledge of the fields of horticulture, botany, plant physiology, genetics, plant pathology, entomology, and soil sciences. Ability to employ methodology from these disciplines skillfully and with precision in different work situations.

Ability to make refined observations, interpret their horticultural implications, and make accurate and precise reports on the results of these observations.

In-depth knowledge of program management and administration of budget, contracts, and personnel.

Knowledge of horticultural history including period design, plant varieties, and maintenance techniques.

Knowledge of all practical aspects of horticultural and landscape construction procedures. Ability to select ways in which horticultural methods, procedures, and techniques can be applied, adapted or modified to solve problems.

Knowledge of scientific data acquisition and analysis standards, methods, and recording techniques so that the incumbent can efficiently manage the collection and summation of data, and accomplish data analysis in a way that is highly credible and meets scientifically acceptable standards.

Knowledge of regulations, policies, and guidelines regarding the management and monitoring of horticultural resources, including genetic integrity of witness plants and threatened historic cultivars, in order to assure that program goals and objectives reflect national priorities and policies.

Knowledge of NPS guidelines, procedures, and techniques required for the preservation, mounting, labeling, storage, and cataloguing of specimens in order to insure that specimens are adequately preserved and properly accessioned into the park's natural history collection.

Knowledge of current NPS guidelines and regulations concerning integrated pest management and the applications of various pesticides.

Knowledge of computer hardware, software, and application so that information, primarily field data, can be processed, summarized, and reports generated.

Skill in oral and written communication in order to insure that plans are well written and easily understood; scientific reports and journal articles are of high scientific credibility; pertinent information is shared effectively with others; and oral presentations are well designed, informative, and clearly convey the intended message.

Factor 2. Supervisory Controls Level 2-4; 450 points

The supervisor sets the overall goals and resources available. Guidance is provided only to determine priorities, approve work plans, and assist in working through unprecedented situations that have a bearing on the overall program.

The incumbent independently plans, designs, implements, and manages the program with a minimum of direct supervision. Independent judgement is required on a regular basis in developing, testing, and refining procedures and methods, and in the application of these methods in the field. The incumbent resolves most problems that arise and coordinates the work both within the work unit and with other park divisions. The incumbent keeps the supervisor informed of progress, potentially controversial problems, and concerns, issues or other matters having far-reaching implications.

The supervisor evaluates the completed work based on general adequacy in meeting program or project objectives, expected results, and compatibility with other work. Work produced is considered technically correct and is normally accepted without significant change.

Factor 3. Guidelines Level 3-4; 450 points

Guidelines include laws, regulations, policies, scientific protocols, plans, procedures, and any additional directions given and defined by the supervisor. Policies and precedents are applicable but are stated in general terms; guidelines are scarce or of limited use. Guidelines are often inadequate to deal with the more complex or unusual problems, or with novel, undeveloped or controversial aspects of horticultural resources management encountered at the field level. These kinds of situations occur when precedents or guides point toward conflicting decisions; recent court decisions or legislation may appear to require a technical decision at variance with existing guides; there may be relatively few precedents or guides which are pertinent to specific methods; or proven methods are incomplete. The employee uses initiative and resourcefulness in deviating from traditional methods or researching trends and patterns to develop new methods, criteria or proposed new policies.

Factor 4. Complexity Level 4-5; 325 points

The work includes varied duties requiring many different and unrelated processes and methods that are applied to a broad range of activities or substantial depth of analysis. Decisions regarding what needs to be done include major areas of uncertainty in approach, methodology, or interpretation and evaluation processes that

result from such elements as continuing changes in program, technological developments or conflicting requirements. The work requires originating new techniques, establishing criteria or developing new information.

Horticultural activities can require substantial initiative and skill in building consensus and obtaining public and cooperating agency support. The incumbent must be able to exercise professional skills in horticultural research, evaluation, and practice. The work includes varied duties requiring many different and unrelated processes and methods that are applied to (1) a broad range of subjects or (2) substantial depth of analysis.

Assignments involve sensitive and complex issues that require solving problems concerned with novel, undeveloped or controversial aspects. The problems are difficult due to the abstract nature of the concepts or the existence of serious conflicts among scientific requirements, program direction, and administrative requirements. These conditions create major areas of uncertainty in the decision-making process. Information collected must be reorganized, interpreted, and presented to reflect supportable hypotheses and themes. The incumbent must be able to examine separate subject areas to draw upon research and sources of related fields.

The incumbent must be especially versatile and innovative in order to recognize new approaches, devise new or improved techniques or strategies for obtaining effective results, or anticipate future trends and requirements. In addition, the incumbent must be able to (1) exercise good professional judgement in ensuring the appropriate consideration of horticultural resources in the overall picture of park operations, development, interpretation, and resources management, (2) identify resources, evaluate their significance, develop management options that take into account all levels and areas of concern, and (3) prepare plans to preserve, conserve, mitigate impacts, and manage the resources.

Factor 5. Scope and Effect Level 5-4; 225 points

The purpose of the work is to develop and implement plans and strategies to protect resources and resolve problems with solutions that achieve management objectives. The successful accomplishment of the duties of this position provides the professional foundation of the horticultural program. The work involves establishing criteria, formulating projects, assessing program effectiveness or investigating or analyzing a variety of unusual conditions, problems or questions. The product or service affects a wide range of agency activities, major activities or issues, or the operation of other agencies or entities. Activities developed and conducted by the incumbent are essential to maintaining the integrity of the landscape. Information gained through research, inventory, and monitoring provide the scholarly and professionally credible basis for management decisions.

The work influences the effectiveness or acceptability of agency goals and programs by managers or specialists in outside agencies. Programs carried out by the incumbent directly affect the preservation or enhancement of the ecological and cultural integrity

of parks and surrounding landscapes.

Factor 6. Personal Contacts Level 6-3; 60 points

Contacts are made with horticulturists, resources managers, and subject matter experts of other agencies, researchers, and other members of the scientific and landscape preservation community, science and management staff of other parks, preservation organizations, the media, the general public, universities, and other park staff. Contacts typically are not established on a routine basis, and the role and authority are identified and developed during the course of the contact.

Factor 7. Purpose of Contacts Level 7-2; 50 points

The purposes of the contacts are to provide professional advice to managers and other staff; to exchange information; to provide instruction and services; to coordinate and advise on mutual work efforts and research; to insure compliance with laws and regulations; to train; to procure supplies and materials; and to secure cooperation for park programs from other agencies, individuals or interest groups.

Factor 8. Physical Demands Level 8-2; 20 points

The position may require strenuous physical activity including periods of standing, walking, climbing, and lifting and carrying heavy objects. Some activities will occur in physically dangerous areas or settings. Documentary research and report writing work is sedentary, which entails the ability to concentrate and write for long periods of time.

Factor 9. Work Environment Level 9-2; 20 points

Work is performed both indoors and outdoors in all types of weather. Employee is exposed to inclement weather, wide temperature ranges, chemicals, and machine noises and hazards.

Total Points 2850

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