

Workforce Planning:  
A Memo to the U.S. Forest Service Director

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To: Ivana Hire, U.S. Forest Service Director  
From: Vi Conduit, Senior Human Resources Analyst  
Subject: **Workforce planning for FY 2006 and beyond**

## **Introduction**

In public organizations, which are service and information oriented, employees tend to be the most significant resource. Personnel-related costs generally constitute between 50 and 70%, or more, of an operating budget, so the need for planning in this area is crucial (Shafritz, 2001, p. 134). Organizations must view their personnel resources as their most significant category of investment, requiring considerable effort, time, and cost to recruit, select, evaluate, train, and staff effectively (Shafritz et al., 2001, p. 136).

This memo addresses the workforce planning needs of the U.S. Forest Service, taking into account future demographic and other changes within the wider labor force as well as future program changes and projected attrition rates within the agency. Hiring younger personnel with particular skills and experiences, retaining knowledge held by future retirees, and utilizing more flexible work schedules made possible by new technology are among the recommendations.

### **I. General assessment of the future of the work and workforce.**

There are several elements that organizations need to consider for the future of work and the workforce. First, *attrition projections-forecasting*, which is the impact of changes in the quantity of specific categories within the workforce because of separations, especially retirements, as these workers usually represent the deepest part of the organization's knowledge base. Second, *adjustment projections-forecasting*, the impact of changes in the current workforce involving those employees who change some aspect of their status, like functional skills, preference, employment categories, grade level. The last is *recruitment projections-forecasting*, the impact of current recruitment efforts and special policy programs, such as minority recruitment, lateral entries, or special highly skilled functional categories. (Shafritz et al., 2001, p.149).

Effective HR planning must involve a systematic process of analyzing external conditions and organizational needs, and indicating management strategies and tactics to make responsive changes. The changes that an organization can undergo vary from technology, demographics or work arrangements, since these three trends will influence the world of work in the 21<sup>st</sup> century.

These changes may have several impacts upon the labor force. Future technological developments will increase the demand for highly skilled workers, affecting *the nature of work and job skill requirements*. Employees will have to adapt throughout the course of their careers to changing technology and product demand. Consequently, in the absence of a strong increase in the supply of skilled workers in response to the higher returns of education, wage dispersion will likely remain at current levels or continue to widen. Therefore, employers that do offer benefits may move toward more personalized structures, meeting the employee circumstances and impact *wages and benefits*.

Changing work arrangements will affect *the nature of employer –employee relationships and work locations*: advances in IT continue to weaken the bonds between work and place, and a greater proportion of the labor force will be working at home or in other locations removed from their employer's headquarters. The agency needs to be aware that technological progress will continue to affect how the government agencies should be organized, where work is actually conducted, and the delivery of work-related training. Demographic trends will continue to evolve in terms of workforce composition by gender, age, race, ethnicity, language, and family responsibilities affecting *the size and composition of the workforce*. In particular, the labor force will grow at historically low rates. Accommodation should be made by the agency to ensure that they can hire from a broader demographic range—including retirees, women with children, and those with disabilities (Karoly & Panis, 2004).

## **II. Assessment of Future Needs**

“The Mission of the USDA Forest Service is to sustain the health, diversity, and productivity of the Nation’s forests and grasslands to meet the needs of present and future generations” (USDA Forest Service 3). Over the next five years, this mission will change as the health of the forests and the needs of Americans change. These changes are reflected in the strategic plan for 2004 – 2008. Six program goals have been developed to carry out the mission over the next five years. These goals are: to reduce risks from fires and invasive plant species, provide outdoor recreation opportunities, help meet the energy needs of citizens, improve the watersheds, and conduct research and development. Many of the Forest Service programs involve working with other agencies, private contractors, community groups, and individuals such as volunteers or home owners.

Past fire control techniques have led to dense, combustible forests. Program changes over the next five years will include an increase in the acreage of land where combustible matter (fuel) is removed or reduced (USDA Forest Service 5-6). Also, there will be an increase in the number of acres covered by partnership agreements with forest neighbors, including states, tribes, and private landowners. A third objective is to reduce the costs of fighting fires (USDA Forest Service 6-7). Invasive species decrease the health of the forests; therefore, increasing the risk of wildfire. Invasive species management programs involve cooperation with forest neighbors and partner organizations (USDA Forest Service 9).

Meeting the energy needs of the nation includes providing trees to be used for fuel, and transportation of energy sources, including wells and pipelines. Meeting energy needs within the conservation mission of the agency is an increasingly complex matter, dealing with the competing forces of the need to decrease environmental pollution while contributing to economic growth. Program objectives include increasing efficiency of issuing permits, and increasing tons

of small-diameter trees used (USDA Forest Service 14-16).

Watersheds contained within Forest Service lands provide drinking water for an estimated 3,400 towns and cities. Program objectives around watershed health include maintaining habitat, increasing acres of forest under watershed maintenance, and increasing monitoring of water quality. Program activities include cleaning up hazardous material, monitoring water quality, and working with community groups (USDA Forest Service 16).

Research and development activities in the next five years will focus on increasing overall efficiency of work, related to the other five program goals. Program managers throughout the agency will need to have high levels of technical knowledge to execute quality programs as well as having the diplomatic skills to bring together necessary partners.

### **III. Competencies needed from the workforce.**

The U. S. Forest Service must be cognizant of the affects that attrition has on the core competencies of the workforce. The expected growth of the agency and natural attrition may cause the workforce to be reduced to skeleton crews, in terms of experience, which would compromise the agency's ability to perform and fulfill its mission. With attrition comes the loss of expertise in the field that, in many cases, cannot be quickly replaced; the loss of a valuable knowledge base must be addressed in order to alleviate transitions within the agency.

The Forest Service has an increased need for highly skilled workers that can bring knowledge of stewardship to the field and technological experience to facilitate the agency's capabilities in adjusting to its changing environment. The agency must be aware of changing demographics and needs of this new workforce and incorporate a plan that is adaptive to the needs of both the agency and potential employees. As the Forest Service begins to address quality control and plan for the future needs of the agency, it must be conscious of these changing technologies, demographics, attrition problems, and new work arrangements. It is

necessary to recruit employees that can enhance the agency's knowledge base and ensure agency competency.

To ensure that the agency competency rate is maintained, training in new technological fields should be addressed internally and externally. New recruits should have skills reflective of current technological trends, so that they can help the agency adapt to new systems of operation that may be useful in the agency and with community partnerships. While ensuring that these new recruit's skills are brought up to par with agency professionals, the agency must also be mindful of the lateral attrition of individuals within the agency and include an interoffice adaptive training plan as part of its core training program. The agency must continually identify new technologies and offer training to its entire staff to ensure that the agency's competency rate stays at a high level.

The U. S. Forest Service must recruit individuals that understand the conditions for preserving the large-scale ecosystem that this agency governs. These individuals must understand the ideas of stewardship and have training in ecological and social sciences disciplines in order to help the agency deal with future cultural and environmental changes. Agency personnel must also have the ability to develop relationships and build community partnerships with other government entities and local groups, as this is central to the agency's mission and strategic goals.

The efficient use of technological skills in all specified fields, whether an agent is dealing with biodiversity in the field or commanding a research project, is necessary to ensure agency competency. These individuals must understand agency policy and management decisions to integrate their technical experience and improve proper execution of all planned projects. Permanent staff should be sufficiently qualified and capable of managing part-time, seasonal, and flexible time staff under their direction. Ensuring that *all* staff has current technological

skills and a comprehensive training in their specified field, further allows the agency to manage and maintain issues of quality control.

**IV. Analysis of Forester Workforce**

A Marcov Chain analysis demonstrated, in particular, the effects of attrition upon the aging Forest Service workforce. To align the workforce with future agency needs, the agency should decrease permanent staff and focus hiring on younger personnel with lower to mid-range levels of experience. This will encourage retention of inner core competencies and lower personnel costs by allowing for the use of non-agency service providers.

The Marcov Chain analysis predicted attrition of 136 employees, approximately 5.5% of the total workforce in 2005. This number is smaller than the 2004 separation total of 154 (6%), but roughly the same percentage. In both time periods, the greatest attrition occurred in the fifty to fifty-five and fifty-five to sixty age ranges and in the thirty to thirty-four and thirty-five years and higher experience categories (see Figure 1). Current attrition rates predict the Forest Service will continue to lose older and experienced workers at a higher rate than other workforce categories.

<b>Figure 1</b>	50-55 & 55-60 ages	All other ages	30-34 & 35 and older, exp.	All other exp. categories	Total Workers	%
2004 separations	105	49	104	50	154	6
2005 attrition rates	90	46	89	46	136	5.5

2004 accession numbers demonstrated the agency's attempts to address service needs through the hiring process. Over 75% of the accessions were in the under 40 year age categories, and the under 10 years of experience categories (Figure 2). Accessions in 2004 were only a third of the number of separations. The implication being that the Forest Service is fazing out permanent full-time employees as sole service providers.

<b>Figure 2</b>	Under 40 yrs of age	40 and older	Under 10 yrs. of Exp.	10 years or more exp.	Total Workers	%
2004 Accessions	35	8	35	8	43	2

To align their workforce with future agency needs, the agency should continue to focus hiring on younger personnel with lower to mid-range levels of experience. Such personnel are more likely to have creative ideas and fresh perspectives about future agency development. Employees just beginning their careers are more apt to travel and work in rugged, sometimes dangerous conditions. With more recent training, younger personnel will possess up-to-date knowledge on current trends in conservation, recreation development, fire prevention, and innovative uses of technology. These abilities will help move the Forest Service closer toward long-term goals.

Maintaining current attrition rates along with a hiring emphasis on younger workers primes the agency to adopt, what Thompson and Mastracci (2005) refer to as the “Core-Ring Model.” This model utilizes workers in “nonstandard work arrangements,” i.e., seasonal, term, volunteer and contractors, to fulfill supplemental tasks that support the Forest Service objectives. The model retains an inner core of permanent employees that fulfill duties directly related to the agencies mission (p. 9-10). Adopting this model will allow for contributions from outside providers while retaining core values.

The Forest Service can rely on attrition to phase out their older workforce, and bring in only enough new employees to retain core competencies. Some service needs can be fulfilled by volunteers and outside providers, but it’s necessary to retain some experienced personnel that develop their careers within the agency. Their intimate knowledge of the inner workings of the agency, its obstacles and objectives, will prove invaluable when adapting to changing service needs.

## **V. Projection of Core-Ring Model Adoption**

If the agency decides to formally adopt some version of the Core-Ring model, expect to see a significantly different future workforce. Announcing that some primary Forest Service

activities will be outsourced, or increasingly fulfilled by temporary and seasonal help, will affect the way current employees view their job status. Attrition will increase among many age and experience categories. For the purposes of this analysis workers are grouped into five categories:

**Category V** The most affected will be those workers with vast experience already at retirement age. The older cadre may feel jaded or concerned about the new direction of the agency, or they may feel vulnerable with the new arrangement and may opt to leave before being terminated.

**Category IV** While higher than the original forecast, fully experienced workers near retirement age will have smaller attrition rates as they depend on the agency's need of their experience to carry them safely through the transition period.

**Category III** Attrition shoots up again for employees with significant experience, but young enough, in light of the new changes, to feel that they should leave the agency in pursuit of positions within other governmental or private organizations.

**Category II** While still relatively young, these workers will have relatively lower attrition rates as they want to build and maximize their experience before considering leaving the agency.

**Category I** The least experienced and youngest workers will have little change in their attrition rates. Work continues to be a temporary, semi-permanent affair with already fairly high turnover.

Using this rationalization of how groups of workers will react to a formal adoption of a Core-Ring model, the transition rates used in the Markov Chain analysis above need modification. Figure 3 projects an aggressive forecast of attrition from the assumptions provided above (please see attached spreadsheet for details).

<b>Figure 3</b>	I	II	III	IV	V	Total	% Workforce Lost
Original 2005 Attrition	8	7	12	19	90	136	6%
Revised 2005 Attrition	12	9	79	31	171	302	14%
<b>Net Loss due to Core-Ring</b>	-4	-2	-55	-67	-81	-166	

As shown, a move to a Core-Ring work arrangement will lead to increased voluntary attrition among the most experienced in the agency. In addition to the recruitment of additional younger workers, two other methods should be utilized to take advantage of the Core-Ring arrangement--increased training and contracting of annuitants.

A Core-Ring model necessitates having a cadre of workers knowledgeable of not only the skills and abilities to do the job, but of a robust program knowledge of the variety of Forest Service responsibilities. The remaining experienced workers, especially those in Category III, need to be provided with excellent training opportunities to improve both managerial and program skills. These individuals can then best be used to identify program goals and manage the increased temporary workforce to accomplish them.

In addition, the vast experience of annuitants should not be discarded after they leave (Thompson and Mastracci 2005, p. 9). As the agency moves to a more flexible workforce, the expertise of recent retirees should be utilized as the need arises. For example, the core staff can manage annuitants to help forecast the severity and resource needs of the upcoming fire season, or they can be used as contractors to provide insight into how many acres of forest should be protected for increased watershed use.

## **Conclusion**

The objectives of the Forest Service are expanding while the future of available workers is uncertain. A strong focus on workforce planning is essential to meet the Strategic plan for 2004-2008. The Forest Service should commit additional resources to better understand how technological advancement and changing demographics, especially the slow growth of the labor market, will affect recruitment and attrition. Given current trends, the provided spreadsheet forecast predicts a workforce that has lost a great number of experienced employees at the end of 2005. Without adequate recruitment, training and alteration of work arrangements, the agency is heading toward a depleted workforce.

The Forest Service should consider implementing a Core-Ring personnel structure that features a cadre of experienced and skilled staff to manage a growing number of part-time, temporary, or contract workers to implement strategic goals. Moving toward the Core-Ring

model will have an even greater impact on increasing attrition rates in the short term. However, this problem can be mitigated by increasing recruitment among younger workers and the temporary hiring of annuitants when needed. Utilizing technology to increase competencies of existing personnel and capitalizing on nonstandard work arrangements, will allow for the most effective use of human resources.

### **Bibliography**

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