



American Horticultural Therapy Association

Prepared by: American Horticultural Therapy Association (AHTA)

Copyright 2007

Editor: Elizabeth R. Messer Diehl, ASLA, HTM

Definitions and Positions

Introduction

Over the past decade many people have become aware of the positive benefits of human interaction with plants and gardens. The recent surge of interest in this relationship in combination with a great increase of horticultural activities in treatment programs have led to the use of numerous terms for these programs and activities such as therapeutic horticulture, garden therapy, social horticulture, and therapeutic gardening to name a few. Because these terms are used interchangeably it is difficult to distinguish one from another and horticultural therapy has often been used as the catch-all phrase. There are in fact some crucial differences between terms.

Likewise, gardens designed to support people-plant interactions and human well-being have been referred to as healing gardens, therapeutic gardens, and restorative gardens, among others. There are, however, some essential differences among garden types that can provide clarity to their design and purpose.

To increase understanding of the profession, the American Horticultural Therapy Association (AHTA) has put together the following outline to define the terms recognized by AHTA that are associated with people-plant relationships and to provide additional information on horticultural therapy.

Types of Programs

Horticultural Therapy

Horticultural therapy is the engagement of a client in horticultural activities facilitated by a trained therapist to achieve specific and documented treatment goals. AHTA believes that horticultural therapy is an active process which occurs in the context of an established treatment plan where the process itself is considered the therapeutic activity rather than the end product. Horticultural therapy programs can be found in a wide variety of healthcare, rehabilitative, and residential settings.

Therapeutic Horticulture

Therapeutic horticulture is a process that uses plants and plant-related activities through which participants strive to improve their well-being through active or passive involvement. In a therapeutic horticulture program, goals are not clinically defined and documented but the leader will have training in the use of horticulture as a medium for human well-being. This type of program may be found in a wide variety of healthcare, rehabilitative, and residential settings.

Social Horticulture

Social horticulture, sometimes referred to as community horticulture, is a leisure or recreational activity related to plants and gardening. No treatment goals are defined, no

therapist is present, and the focus is on social interaction and horticulture activities. A typical community garden or garden club is a good example of a social horticulture setting.

Vocational Horticulture

A vocational horticulture program, which is often a major component of a horticultural therapy program, focuses on providing training that enables individuals to work in the horticulture industry professionally, either independently or semi-independently. These individuals may or may not have some type of disability. Vocational horticultural programs may be found in schools, residential facilities, or rehabilitation facilities, among others.

Types of Gardens

Healing Gardens

Healing gardens are plant dominated environments including green plants, flowers, water, and other aspects of nature. They are generally associated with hospitals and other healthcare settings, designated as healing gardens by the facility, accessible to all, and designed to have beneficial effects on most users. A healing garden is designed as a retreat and a place of respite for clients, visitors, and staff and to be used at their desire. Healing gardens may be further divided into specific types of gardens including therapeutic gardens, horticultural therapy gardens, and restorative gardens. These garden types are likely to have overlap and the following definitions should be regarded as guidelines since no two gardens are the same.

Therapeutic Gardens

A therapeutic garden is designed for use as a component of a treatment program such as occupational therapy, physical therapy, or horticultural therapy programs and can be considered as a subcategory of a healing garden. A garden can be described as being therapeutic in nature when it has been designed to meet the needs of a specific user or population. It is designed to accommodate client treatment goals and may provide for both horticultural and non-horticultural activities. It should be designed as part of a multi-disciplinary collaborative process by a team of professionals. A therapeutic garden may exist on its own as an extension of an indoor therapeutic program area or it may be part of a larger healing garden.

Horticultural Therapy Gardens

A horticultural therapy garden is a type of therapeutic garden; it is designed to accommodate client treatment goals, but it is designed to support primarily horticultural activities. A horticultural therapy garden is also designed in such a manner that the clients themselves are able to take care of plant material in the garden.

Restorative Gardens

A restoration or meditation garden may be a public or private garden that is not necessarily associated with a healthcare setting. This type of garden employs the restorative value of nature to provide an environment conducive to mental repose, stress-reduction, emotional recovery, and the enhancement of mental and physical energy. The design of a restorative garden focuses on the psychological, physical, and social needs of the users.

Prevalence of Horticultural Therapy Programs and Healing Gardens

At this time horticultural therapy programs are not required to be registered or associated with any type of professional regulating body so it is difficult to say with precision how many programs are offered across the country or what types of programs are offered. The number of horticultural therapy and therapeutic horticulture programs has clearly increased over the past decade.

Similarly, there is currently no comprehensive list of existing healing gardens. However, healing gardens are regularly featured in local and national publications and are being built with increasing frequency in a variety of settings. As awareness grows of the role these gardens play in effecting positive outcomes, people are requesting the creation of these types of gardens on an increasing basis. In the early 1990's, there were few examples. Today, examples exist in most cities in public and private settings. AHTA developed the first therapeutic garden characteristics in 1995 and awarded the first Therapeutic Garden Design Award in 1997. AHTA has collaborated with the American Society of Landscape Architects (ASLA) on the development of healing gardens across the country.

Benefits of Horticultural Therapy and Therapeutic Gardens

The benefits of involvement in horticultural activities and exposure to nature can be seen in cognitive, psychological, social, and physical realms and research continues to reveal these connections across many groups of people. The following list includes some of the benefits that have been cited in the literature. Please note that many of these studies report on specific populations and the benefits may or may not be applicable to all groups.

Cognitive Benefits:

Enhance cognitive functioning (Kaplan & Kaplan, 1989; Cimprich, 1993; Herzog, Black, Fountaine & Knotts, 1997)

Improve concentration (Wells, 2000; Taylor et al., 2001)

Stimulate memory (Namazi & Haynes, 1994).

Improve goal achievement (Willets & Sperling, 1983).

Improve attentional capacity (Hartig, Mang & Evans, 1991; Ulrich et al., 1991; Ulrich & Parsons 1992; Ulrich, 1999; Taylor et al., 2001)

Psychological Benefits:

Improve quality of life (Willets & Sperling, 1983; Waliczek et al., 1996)

Increase self-esteem (Moore, 1989; Blair et al., 1991; Smith & Aldous, 1994; Feenstra et al., 1999; Pothukuchi & Bickes, 2001)

Improve sense of well-being (Relf et al.1992; Ulrich & Parsons, 1992; Galindo & Rodrieguez, 2000; Kaplan, 2001; Jarrott, Kwack & Relf, 2002; Barnicle & Stoelzle Midden 2003; Hartig, 2003)

Reduce stress (Ulrich & Parsons, 1992; Whitehouse et al., 2001; Rodiek, 2002)

Improve mood (Wichrowski, Whiteson, Haas, Mola & Rey, 2005; Whitehouse et al., 2001)

Decrease anxiety (Mooney & Milstein, 1994)

Alleviate depression (Relf, 1978; Mooney & Milstein, 1994; Cooper Marcus & Barnes, 1999)

Increase sense of control (Relf et al., 1992)

Improve sense of personal worth (Smith & Aldous, 1994)

Increase feelings of calm and relaxation (Moore, 1989; Relf et al., 1992)

Increase sense of stability (Blair et al., 1991; Feenstra et al., 1999; Pothukuchi & Bickes, 2001)

Improve personal satisfaction (Blair et al., 1991; Smith & Aldous, 1994; Feenstra et al., 1999; Pothukuchi & Bickes, 2001)

Increase sense of pride and accomplishment (Hill & Relf, 1982; Matsuo, 1995)

Social Benefits:

Improve social integration (Kweon, Sullivan & Wiley, 1998)

Increase social interaction (Langer & Rodin, 1976; Moore, 1989; Perrins-Margalis, Rugletic, Schepis, Stepanski, & Walsh 2000).

Provide for healthier patterns of social functioning (Langer & Rodin, 1976; Kuo, Barcaicoa & Sullivan, 1998)

Improved group cohesiveness (Bunn, 1986)

Physical Benefits:

Improve immune response (Hartig, Mang & Evans, 1991; Ulrich et al., 1991; Ulrich & Parsons 1992; Ulrich, 1999)

Decrease stress (Rodiek, 2002)

Decrease heart rate (Wichrowski, Whiteson, Haas, Mola & Rey, 2005)

Promote physical health (Ulrich & Parsons, 1992; Kweon, Sullivan & Wiley, 1998; Cooper Marcus & Barnes, 1999; Armstrong, 2000; Rodiek, 2002)

Improve fine and gross motor skills and eye-hand coordination (Moore, 1989)

People & Facilities Benefiting from Horticultural Therapy & Therapeutic

Gardens People of all ages and special needs can benefit from involvement in horticultural therapy. Programs operate throughout the United States as well as in other countries and can be found in the following facility and program types:

Vocational, pre-vocational, occupational, and rehabilitation programs

Psychiatric hospitals and mental health programs

Substance abuse programs

Hospitals, clinics, and skilled nursing facilities

Hospice and palliative care programs

Cancer centers

Correctional facilities

Shelters for the homeless and victims of abuse

Public and private schools Assisted living and senior centers

Adult day care

Community and botanic gardens

Horticultural Therapists

Horticultural therapists are specially educated and trained professionals who involve the client in any phase of gardening - from propagation to selling products - as a means of bringing about improvement in their life. As members of treatment or care teams, horticultural therapists determine individual goals and work plans to help clients improve skills and maximize abilities.

Certification

Licensing and certification are not currently required to be a horticultural therapist. AHTA offers voluntary professional registration for horticultural therapists that meet specific education and experience criteria.

Training & Education

Many universities, colleges, and community colleges offer classes and certificates in horticultural therapy and some offer degree programs. New classes, programs, and distance-learning opportunities are being offered all the time; check the AHTA website or the internet for the latest options. AHTA has a core curriculum that it requires of all AHTA-accredited certificate programs that includes the following course types:

Horticultural Therapy Specialization

Horticultural therapy techniques and special needs populations

Horticultural therapy programming (assessment, goal planning, activity planning, task analysis)

Program funding

Research

Grant writing

Horticulture Sciences

Plant propagation

Greenhouse or nursery production/management

Botany, soil science, entomology, IPM, plant pathology/physiology

Landscape design

Floral design

Therapy/Human Sciences

Psychology

Sociology

Group dynamics

Vocational rehabilitation

Special education

Recreation/therapeutic skills and services

Anatomy/physiology

Sign language, CPR, crisis intervention

History of Horticultural Therapy

The use of horticulture to sooth the senses dates as far back as 2000 BC in Mesopotamia where the lush agricultural plots that lay in the fertile river valleys of the Tigris and Euphrates rivers provided inspiration for the first designed gardens in this otherwise very arid landscape (Jellicoe & Jellicoe, 1995). Around 500 BC, the Persians began creating gardens to please all of the senses simultaneously by combining beauty,

fragrance, music (water) and cooling temperatures in the garden. In the 1100's St. Bernard described the benefits of a hospice garden at a monastery in Clairvaux, France, referring to the therapeutic benefits of privacy, green plants, birdsong, and fragrance (in Gerlach-Spriggs, Kaufman & Warner, 1998).

In 1812 Dr. Benjamin Rush, a professor of the Institute of Medicine and Clinical Practice at the University of Pennsylvania and known for his role in the development of modern psychiatry, published his book *Medical Inquiries and Observations Upon Diseases of the Mind*. In it he stated that "digging in a garden" was one of the activities that distinguished those male patients who recovered from their mania from those that did not (Rush, 1812 p.226). Agricultural and gardening activities were included in both public and private psychiatric hospitals, and Friends Asylum for the Insane was the first known example, opening in 1813 in Philadelphia. In 1879, Friends built the first greenhouse to enhance its long tradition of horticultural therapy (Friends Hospital, 2005).

In the 1940s veteran hospitals were established by the U.S. government to care for wounded servicemen. Members of garden clubs and the horticulture industry brought flowers to the hospitals, as well as plant-based activities (Relf, 2006). Toward the end of the 1950s Alice Burlingame, trained in psychiatric work, occupational therapy, landscape architecture, and greenhouse production, established horticultural therapy programs with volunteers from the National Farm and Garden Bureau. In addition, Burlingame taught horticultural therapy courses at Pontiac State Hospital for occupational therapy externs (Relf, 2006). In 1960 she authored the first book on horticultural therapy with Dr. Donald Watson, *Therapy through Horticulture* (Watson & Burlingame, 1960). Working under Dr. Karl Menninger from 1946-1953 at the Menninger Clinic, Rhea McCandliss became one of the first professional horticultural therapists. In 1972 the Menninger Foundation teamed with the Horticulture Department at Kansas State University to provide training for undergraduate students in the mental health field, and this would lead to the first horticultural therapy curriculum in the U.S. (Relf, 2006). Several other universities followed suit and in 1976 the first Ph.D. in Horticultural Therapy was awarded to P. Diane Relf by the University of Maryland. In 1973 a group of horticultural therapy professionals established the Council for Therapy and Rehabilitation through Horticulture (NCTRH) holding its first conference at the National Arboretum and USDA National Agricultural Library. In 1988 the organization changed its name to the American Horticultural Therapy Association (AHTA). AHTA is a 501(c)3 nonprofit organization and currently has approximately 900 members, 25% of whom are professionally registered.

AHTA's Mission, Values & Goals

Mission

To advance and promote the practice of horticulture as therapy to improve human well-being.

Values

- 🕒 Quality of life is related to the connection to the natural world.
- 🕒 Curiosity and attraction to nature are inherent human qualities; individuals respond positively to green plants and colorful flowers.

- ⌚ Working with plants promotes emotional, mental and physical health and well-being.

Goals

- ⌚ **Capacity building:** to develop the resources and relationships needed to carry out AHTA's mission and vision
- ⌚ **Information and education:** to be the best source of information about the benefits of horticultural therapy and therapeutic gardening
- ⌚ **Membership community:** to be an effective organization, responsive to members, supporters, and the public
- ⌚ **Professional standards:** to describe and promote high standards of practice

References

- Armstrong, D. (2000). A community diabetes education and gardening project to improve diabetes care in a northwest American Indian tribe. *Diabetes Educator* 26(1), 113-120.
- Barnicle, T. & Stoelzle Midden, K. (2003). The effects of a horticultural activity program on the psychological well-being of older people in a long-term care facility. *HortTechnology* 13(1), 81-85.
- Blair, D., Giesecke, C. & Sherman, S. (1991). A dietary, social, and economic evaluation of the Philadelphia urban gardening project. *Journal of Nutrition Education* 23:161-167.
- Bunn, D.E. (1986). Group cohesiveness is enhanced as children engage in plant stimulated discovery activities. *Journal of Therapeutic Horticulture* 1:37-43.
- Cimprich, B. (1993). Development of an intervention to restore attention to cancer patients. *Cancer Nursing* 12(4), 22-27.
- Cooper Marcus, C. & Barnes, M. (1999). *Healing gardens: Therapeutic benefits and design recommendations*. Chichester, UK: J. Wiley.
- Feenstra, G., McGrew, S. & Campbell, D. (1999). *Entrepreneurial community gardens: Growing food, skills, jobs and communities*, Publication 21587. Davis CA: University of CA- Davis.
- Friends Hospital (2005). *Healing with plants: The wonders of horticultural therapy*. Retrieved October 22, 2006 from <http://www.friendshospitalonline.org/History.htm>
- Galindo, M. & Rodrieguez, J. (2000). Environmental aesthetics and psychological well-being: Relationships between preference judgements for urban landscapes and other relevant affective responses. *Psychology in Spain* 4: pp.13-27.
- Gerlach-Spriggs, N., Kaufman, R.E. & Warner, S.B. (1998). *Restorative gardens: The healing landscape*. New Haven and London: Yale University Press.
- Hartig, T. (2003). Restorative environments: Guest editor's introduction. *Environment and Behavior* 33 (4), 475-479.
- Haller, R. & Kramer, C. (Eds.). (2006). *Horticultural therapy methods: Making connections in health care, human service, and community programs*. Binghamton, NY: The Haworth Press.
- Hartig, T., Mang, M. & Evans, G.W. (1991). Restorative effects of natural environment experiences. *Environment and Behavior* 23(1), 3-26.
- Herzog, T., Black, A., Fountaine, K., Knotts, D. (1997). Reflection and attentional recovery as distinct benefits of restorative environments. *Journal of Environmental Psychology* 17(2) 165-170.

- Hill, C. & Relf, P.D. (1982). Gardening as an outdoor activity in geriatric institutions. *Activities, Adaptations and Aging* 3(1):47–54.
- Jarrott, S.E., Kwack, H.R. & Relf, D. (2002). An observational assessment of a dementia-specific horticultural therapy program. *HortTechnology* 12(3), 402- 410.
- Jellicoe, G. & Jellicoe, S.(1995). *Landscape of man* (2nd ed.). London: Thames and Hudson, 1995.
- Kaplan, R. & Kaplan, S. (1989). *The experience of nature*. New York: Cambridge University Press.
- Kaplan, R. (2001). The nature of the view from home: Psychological benefits. *Environment and Behavior* 33 (4), 507-542.
- Kuo, F.E., Bacaicoa, M. & Sullivan, W.C. (1998). Transforming inner-city landscapes. Trees, sense of safety and preference. *Environment and Behavior* 30(1), 28-59.
- Kweon, B.S., Sullivan, W.C. & Wiley, A.R. (1998). Green common spaces and the social integration of inner-city older adults. *Environment and Behavior* 30(6), 832-858.
- Langer, E. & Rodin, J. (1976). The effects of choice and enhanced personal response for the aged: A field experiment in an institutional setting. *Journal of Personality and Social Psychology* 34(2), 191-198.
- Matsuo, E. (1995). Horticulture helps us to live as human beings: Providing balance and harmony in our behavior and thought and life worth living. *Acta Horticulturae* 391:19–30.
- Mooney, P.F. & Milstein, S.L. (1994). Assessing the benefits of a therapeutic horticulture program for seniors in intermediate care. In M. Francis, P. Lindsay & R.J. Stone (Eds.), *The healing dimension of people-plant relations: Proceedings of a research symposium* (pp.173-187). University of CA.
- Moore, B. (1989). *Growing with gardening: A twelve-month guide for therapy, recreation, and education* (pp. 3-10). Chapel Hill: University of North Carolina Press.
- Namazi, K.H. & Haynes, S.R. (1994). Sensory stimuli reminiscence for patients with Alzheimer's disease: Relevance and implications. *Clinical Gerontology* 14(4), 29–45.
- Perrins-Margalis, N., Rugletic, J., Schepis, N., Stepanski, H., & Walsh, M. (2000). The immediate effects of group-based horticulture on the quality of life of persons with chronic mental illness. *Occupational Therapy in Mental Health* 16(1), 15-30.
- Pothukuchi, K. & Bickes, J. (2001). *Youth nutrition gardens in Detroit: A report on benefits, potential, and challenges*. Detroit, MI: Wayne State University.
- Relf, P.D. (1978). Horticulture as a recreational activity. *American Health Care Association Journal* 4(5), 68–71.
- Relf, P.D. (2006) Agriculture and health care: The care of plants and animals for therapy and rehabilitation in the United States. In J .Hassink & M. van Dijk (Eds.), *Farming for health* (pp.309-343). The Netherlands: Springer.
- Relf, D., McDaniel, A. & Butterfield, B. (1992). Attitudes toward plants and gardening. *HortTechnology* 2:201–204.
- Rodiek, S. (2002). Influence of an outdoor garden on mood and stress in older persons. *Journal of Therapeutic Horticulture* 13: pp13-21.
- Rush, B. (1812). *Medical inquiries and observations upon diseases of the mind*. Philadelphia: Kimber & Richardson. Retrieved October 22, 2006 from <http://deila.dickinson.edu/theirownwords/title/0034.htm>
- Simson, S. & Straus, M. (1998). *Horticulture as therapy: Principles and practice*. Binghamton, NY: The Haworth Press.

Smith, D.V. & Aldous, D.E. (1994). Effect of therapeutic horticulture on the self-concept of the mildly intellectually disabled student. In M. Francis, P. Lindsay & R.J. Stone (Eds.), *The healing dimension of people-plant relations: Proceedings of a research symposium* (pp.215-221). University of CA.

Taylor, A.F., Kuo, F.E. & Sullivan, W.C. (2001). Coping with ADD: The surprising connection to green play settings. *Environment and Behavior* 33:54–77.

Ulrich, R.S., Simons, R.F., Losito, B.D., Fiorito, E., Miles, M.A., & Zelson, M. (1991). Stress recovery during exposure to natural and urban environments. *Journal of Environmental Psychology* 11: 201-230.

Ulrich, R.S. & Parsons, R. (1992). Influences of passive experiences with plants on individual well-being and health. In D. Relf (Ed.), *The role of horticulture in human well-being and social development* (pp.93-105). Portland, OR: Timber Press.

Ulrich, R.S. (1999). Effects of gardens on health outcomes: Theory and research. In C. Cooper Marcus & M. Barnes (Eds.), *Healing gardens: Therapeutic benefits and design recommendations* (pp.27-86). New York: Wiley.

Waliczek, T.M., Mattson, R.H. & Zajicek, J.M. (1996). Benefits of community gardening to quality of life issues. *Journal of Environmental Horticulture* 14:204–209.

Watson, D.P. & Burlingame, A.W. (1960). *Therapy through horticulture*. New York: Macmillan.

Wells, N.M. (2000). At home with nature: Effects of “greenness” on children’s cognitive functioning. *Environment and Behavior* 32:775–795.

Wichrowski, M., Whiteson, J., Haas, F., Mola, A. & Rey, M. (2005). Effects of horticultural therapy on mood and heart rate in patients participating in an inpatient cardiopulmonary rehabilitation program. *Journal of Cardiopulmonary Rehabilitation* 25(5), 270-274.

Whitehouse, S., Varni, J.W., Seid, M., Cooper-Marcus, C., Ensberg, M.J., Jacobs, J.R. & Mehlenbeck, R.S. (2001). Evaluating a children’s hospital garden environment: Utilization and consumer satisfaction. *Journal of Environmental Psychology* 21: 301-314.

Willems, H.C., & Sperling, A. (1983). *The role of the therapeutic recreationist in assisting the oncology patient to cope*. New York: Futura.