Virginia Invasive Species Council
September 2, 2004 – 1:00 p.m.
Virginia Housing Development Authority

Virginia Invasive Species Council Members Present

W. Tayloe Murphy, Jr. Chair
Joseph H. Maroon, DCR
J. Carlton Courter, VDACS
Robert B. Stroube, DOH
James D. Starr, DOF for James W. Garner, Jr.
Raymond T. Fernald, DGIF, for William L. Woodfin
Jack Travelstead, VMRC for William A. Pruitt
Roger L. Mann, VIMS for John T. Wells
M. Brian Waymack, VDOT for Philip A. Shucet

Staff Present

Thomas L. Smith, DCR
Michael R. Fletcher, DCR
Kevin E. Heffernan, DCR
Richard K. Myers, DCR
James N. Meisner, Jr., DCR

Others Present

James Akerson, National Park Service, Shenandoah National Park
Jennifer Allen, The Nature Conservancy
Bill Bolin, Dominion Resources
Pam I. Dinkle, Tri County Lake Admin. Committee
Ruth Douglas, Virginia Native Plant Society
Frank Fulgham, VDACS
David Fuss, Middle Peninsula Planning District Commission
Greg Garman, Virginia Commonwealth University
Scott Harper, The Virginian-Pilot
Scott P. Johnson, VDOT
Rachel Muir, U.S. Geological Survey
Stacy Moulds, Alliance for the Chesapeake Bay
Steve Nash
Nikki Rovner, The Nature Conservancy
Rex Springston, Richmond Times-Dispatch
Sarah Upshur

Call to Order

Secretary Murphy called the meeting of the Virginia Invasive Species Council (ISC) to order.

Welcome and Introductions

Secretary Murphy asked members to introduce themselves and gave the following statement:

> I have the privilege of serving as Governor Warner's Secretary of Natural Resources and am chairman of the ISC. Thank you all for your willingness to serve and thank you to the members of the Advisory Committee.
>
> According to the National Invasive Species Council, hundreds, and perhaps thousands, of nonnative species have established populations in the United States. Invasive species continue to be introduced in new locations, with recent examples including the northern snakehead fish in Maryland and Virginia and the emerald ash borer in Michigan.
>
> The economic impact is staggering. According to the USDA, the Formosan termite causes at least $1 billion annually in damages and control costs in 11 states (in 2001 dollars). USDA also estimates that, if not managed, fruit flies could cause more than $1.8 billion in damage each year. (SOURCE: GAO **October 2002** INVASIVE SPECIES U.S. Department of Agriculture 2001)
>
> New plants, animals, and diseases come to the Commonwealth each year, and these invasive species cost Virginia more than $1 billion annually to eradicate, monitor and control. Across the country, the cost is estimated at $100 to 200 billion per year – more than for all natural disasters combined. (SOURCE: Cornell University economist/ecologist David Pimentel)
>
> Some state agencies have taken some steps against some invasive species. For example, the Department of Conservation and Recreation is trying to stop the proliferation of Phragmites, while the Department of Game and Inland Fisheries grapples with Zebra Mussels and now, the Snakehead Fish.
>
> But agencies working independently cannot achieve what the Commonwealth can accomplish in unity.
>
> To date, there has not been a serious, comprehensive, study of the invasive species problem in Virginia. We are here to address that. And to change it.
>
> To address any crisis, we must first identify the problem, and that's why we're here today. To learn more about the problems of invasive species confronting the Commonwealth, to name the Virginia Invasive Species Advisory Committee, and to charge them with further researching the breadth, width, and scope of the

problems we face. And finally, to plan for the creation of an invasive species annual report.

Virginia can act to stop the attack against our lands, waters, and precious natural resources. The Advisory Committee will be asked to deliver hard facts, to identify and prioritize invasive species, and to offer suggestions on how to counter attack these insidious plants and animals costing the Commonwealth billons of dollars.

In the end, with the presentation of an annual report, this Council will give the Commonwealth the vital ammunition it needs to begin to combat invasive species.

Ordinary citizens can get involved and it would be very meaningful. I come from the Northern Neck where Alice Welford has taken on the issue of phragmites and has done a great deal. We need to thank the agency personnel and the citizens who devote so much time and effort to this problem.

Review of Council Actions since the last meeting

Secretary Murphy said that since the December meeting the Council has been working to establish the advisory committee. Invitations have been mailed and those invited have accepted. DCR staff have also worked to collect and review examples of state management plans from around the U.S. as well as the national invasive species management plan.

He said that the goal is to make the Council more effective in working to control and manage non-native invasive species.

Presentations on key invasive issues and their environmental and economic impacts

Department of Forestry

Mr. Starr from the Department of Forestry gave the following presentation:

Invasive Species: Impact on Forests

American Chestnut

- Chestnut blight wiped out the predominant tree in the eastern hardwood forest
- Major timber species
- Major food supply for humans and animals
- Impact in the billions

Tree of Heaven

- Is present all over the state
- Readily invades in any forest opening, roadsides
- Prolific seeder, sprouts readily and hard to control

Oriental Bittersweet

- It is an aggressive invader that threatens all vegetation levels of forested and open areas.
- It grows over other vegetation, completely covering it, and kills other plants by preventing photosynthesis, girdling, and uprooting by force of its massive weight.
- Oriental bittersweet appears to be displacing the native climbing bittersweet, *Celastrus scandens*, which occurs in similar habitats, through competition and hybridization.

Autumn & Russian Olive

- Forest openings and open land are being taken over in the western part of Virginia
- Prolific seeder and birds scatter the seeds for miles

Kudzu

- A vine that when left uncontrolled will eventually grow over almost any fixed object in its proximity including other vegetation.
- Kudzu, over a period of several years will kill trees by blocking the sunlight.
- Herbicides can control kudzu, but only after several years of treatment.

Gypsy Moth

- Defoliation has affected over 5 million acres
- Tree mortality affected an estimated $60 million worth of timber
- Reduction or elimination of Oak impacts the food supply of many animals
- Many oaks are replaced by species of low value for wildlife and commerce

Hemlock Wooly Adelgid

- Insect retards or prevents tree growth causing needles to discolor from deep green to grayish green, and to drop prematurely. The loss of new shoots and needles seriously impairs tree health. Defoliation and tree death can occur within several years.
- Hemlock is expected to be essentially gone in 15 years

Sudden Oak Death

- Not known to be in Virginia's forests as yet
- Spread with the moving of nursery stock
- Fungus probably spread between trees by insects
- Could devastate our hardwood forest
- DOF is cooperating in national survey

Emerald Ash Borer

- Larva feed under the bark, girdle and kill the tree
- Only control is cut down affected trees
- Recent outbreak in northern Virginia resulted in trees being cut down
- Handled by APHIS through VDACS
- DOF continues to monitor ash conditions

Conclusion

- Our native forest species are being replaced by Tree-of-Heaven, Oriental Bittersweet, and many other species.
- Native species are being killed, displaced, and replaced by exotic pests, including chestnut blight, Gypsy Moth, Hemlock Wooly Adelgid, Sudden Oak Death, Emerald Ash Borer, and others.
- Future forests will probably be drastically different from today's forests.

Secretary Murphy asked how one would assess a species that is known to be non-native.

Mr. Starr said that it would be wise to consider this with any exotic plant, many of which are available from nurseries. It would be wise to be cautious about introducing anything.

Rachel Muir said that there are efforts at the federal level and some of the states to assess species that are invasive, particularly species from abroad and she will share this information with the Council.

Secretary Murphy said that this is an issue that the Council and advisory committee need to address. Many of these invasive species are being brought to the Commonwealth intentionally.

It was noted that similar analysis has been done regarding fish introduced into the Great Lakes region. An animal that is not restrained by the limits of their natural environment may become invasive in a new environment.

Department of Game and Inland Fisheries

Mr. Fernald gave the report for the Department of Game and Inland Fisheries.

He addressed the situation with snakehead fish. He noted that an isolated population of snakehead fish was found in Maryland in 2000 and was destroyed.

The Game and Inland Fisheries Board banned snakehead fish in the summer of 2002. It is illegal to have a snakehead fish either dead or alive in Virginia without a specific permit.

The U.S. Fish and Wildlife Service has prohibited the interstate transport of snakehead fish.

The snakehead belongs to a family of fish made up of about 25 different species native to Africa. They grow from two inches to well over five feet. The species seen in Virginia have been between 33-35 inches. The fish are used for various purposes, including as a food source in much of Asia and Africa.

The fish have been exported from those areas for three uses: 1) food source, 2) the aquarium trade and 3) in some traditions there are religious connotations under which a fish might be released as part of a prayer ceremony.

An inter-jurisdictional management team has been established to develop protocols for dealing with the fish and to establish a toll free number to report sightings of the fish.

At this point there is no solid evidence that the fish has been reproducing in Virginia waters.

The Department is in the final process of obtaining two federal grants, a Wildlife Habitat Incentives Program grant from NRCS and a grant from the U.S. Fish and Wildlife Service. These grants are to help deal with the eradication of zebra mussels.

Department of Agriculture and Consumer Services

Mr. Courter gave the following presentation for the Department of Agriculture and Consumer Services:

VDACS' Statutory Authority

- Virginia Pest Law (§§3.1-188.20 – 3.1-188.31:2) Provides regulatory authority to protect Virginia's agricultural and horticultural interests from new or existing injurious plant pests.

- Virginia Noxious Weed Law (§§3.1-296.11 – 3.1.296.21) Provides regulatory authority to control designated detrimental plants that are not widely disseminated in the Commonwealth.

Agricultural & Horticultural Invasive Pests Established in Virginia

Mile-a-Minute	Multiflora Rose
Thistles	Phragmites
Hemlock Wooly Adelgid	Resident Canada Geese
Black Vulture	Purple Loosestrife*
Johnsongrass	Hydrilla
Kudsu	Gypsy Moth*
Mute Swan	Coyote*

*These pests have current statutes and regulations

Agricultural & Horticultural Invasive Pests Threatening Virginia

Asian Longhorned Beetle**	Cotton Boll Weevil*
Imported Fire Ant*	African Honey Bee**
Sudden Oak Death**	Karnal Bunt of Wheat
Bacterial Wilt of Geraniums**	Pine Shoot Beetle*
Emerald Ash Borer**	Giant Salvinia**
Giant African Snail	Brown Garden Snail**
Plum Pox Virus	Soybean Rust

* Active regulatory programs in place
**Eradication programs recently conducted

Red Imported Fire Ant *Solenopsis invicta* (insect)

- Infests over 300 million acres in the southeastern United States since arriving from South America in 1920's.
- Feeds on almost any plant or animal material, damaging 57 species of agricultural crops including corn, soybeans, potatoes, peanuts & nursery stock.
- Aggressively and repeatedly sting when disturbed.

Bacterial Wilt of Geraniums *Ralstonia solanacearum race 3 biovar 2*

- On Homeland Security Select Agent List
- Over 200,000 VA plants valued at $300,000 destroyed

Major Threat to VA Crops:

Tomatoes - $41 million value

Potatoes - $20 million value

Peppers - $3 million value

Sudden Oak Death *Phytophthora ramorum* (fungus)

- 64 known Hosts and Associated Hosts
  Rhododendron
  Camellia
  Viburnum
  Lilac
  Mountain Laurel
  Southern Red Oak
  Northern Red Oak

- Potential Economical & Environmental Impacts
  - Nursery Industry
    - VA Woody Plant Sales in 2002 at $400 million
  - Urban Landscapes
    - Property Values, Energy Costs, Air/Water Quality
  - Natural Resources
    - Hardwood Forests make up 78% of VA timberland

Emerald Ash Borer (*Agrilus planipenni*) *A* new invasive species in Virginia

- A Fairfax County elementary school received 13 infested ash trees from a Maryland nursery that had unknowingly received 200 infested trees from a Michigan nursery.
- ½ mile radius around the infested site was surveyed and all ash trees were identified and removed.
- 100 residential trees and 180 trees in a wetland/wooded area were removed and burned.
- A sentinel tree survey is ongoing to ensure eradication.
- The eradication effort will exceed $350,000 in VA.

Impact: The Big Picture
Increased Invasive Species Threat

- Increased New Pest Risks
  - Foreign trade and travel
  - Green Industry pest risks
  - Bio-terrorism Select Agent List

- Decreased State Resources
  - Increased reliance on federal, locality
  - and landowner funding

- USDA 2005 Budget Request
  - $175 million for current pest eradication
  - $100 million for new pest survey/detection

Marine Resources Commission

Mr. Travelstead gave the report for the Marine Resources Commission.

As recently as the 1980s, the value of the Virginia oyster industry was around $800,000. Currently it is valued around $200,000.

Update on Environmental Impact Statement to Evaluate Oyster Restoration Alternatives

- The purpose of this EIS is to identify the preferred alternative(s) for establishing an oyster population that reaches a level of abundance in Chesapeake Bay that would support sustainable harvests comparable to harvest levels during the period 1920-1970.
- A need exists to restore the ecological role of oysters in the Bay and the economic benefits of a commercial fishery through native oyster restoration and/or an ecologically compatible non-native oyster species that would restore these lost functions.

Maryland and Virginia's Proposed Actions

- Introduce the Suminoe oyster, *Crassostrea ariakensis*, propagated from the Oregon stock in accordance with the ICES Code of Practices.
- Continue native oyster (*C. virginica*) restoration efforts in those areas of the Chesapeake Bay where conditions are most favorable to achieve the Bay's oyster restoration goals.

Identified Alternatives for EIS Evaluation

- Alternative 1- continue native oyster restoration program.

- Alternative 2- expand native oyster restoration program.
- Alternative 3 – implement temporary harvest moratorium on native oysters and an oyster industry compensation (buy-out) program in Maryland and Virginia.
- Alternative 4 – establish and/or expand native oyster aquaculture program.
- Alternative 5 – establish non-native aquaculture program.
- Alternative 6 – introduce and propagate an alternative oyster species, or strain of C. ariakensis.
- Alternative 7 – introduce C. ariakensis and discontinue C. virginica restoration.
- Alternative 8 – combination of alternatives.

EIS Schedule

- Implementing Research Framework
  - Preliminary research results October 31, 2004
  - Final research results December 31, 2004
- Developing Modeling and Assessment Frameworks
  - C. virginica assessment November 31, 2004
  - C ariakensis assessment January 15, 2005

MD DNR and PRFC Funded Projects

- Resistance to pathogens (Dermo, MSX) and risk to viruses
- Spawning behavior (gametogenesis, fecundity, and spawning cues, species interactions)
- Larvae tolerances, behavior and substrate preferences
- Assessment for fouling of water intake pipes
- Competitive interactions between Eastern and Suminoe oyster
- Examination of Suminoe oyster reefs in China
- Larva dispersal model
- Population growth model
- Socio-economic assessment
- Cultural assessment
- MES assist in EIS coordination and development.

Other Research Projects and Data Sources

- Virginia Seafood Council Field Trials
  - Growth and mortality rates
- NOAA
  - Population genetics
  - Pathogens and viruses
  - Predation mortality
  - Filtration rates
  - Reef building
- North Carolina Field Investigations
- U.S. West Coast Observations

- National Research Council Report

Demographic Oyster Model

Will assess growth and population dynamics of oysters under implementation of strategies for the proposed action and alternative actions, using best available knowledge of C. virginica and C. ariakensis.

Ecological Risk Assessment

- Evaluate the following risk factors identified in the NRC Report:
  - Ability to re-establish a self-sustainable oyster population comparable to 1920-1970 abundance levels.
  - Altering oyster diseases in the Bay.
  - Increasing human health risks and impacts to the oyster fishery.
  - Ability to re-establish oyster reefs and associated benefits.
  - Distribution of oysters in the Chesapeake Bay.
  - Competition for food with other filter-feeders.
  - C. ariakensis becoming an invasive or nuisance species.
  - C. ariakensis dispersal beyond Chesapeake Bay.

Socio-Economic Assessment

- Economic benefits from:
  - Commercial oyster fishery
  - Other (non-oyster) commercial fisheries
  - Recreational fishing community
  - Water quality improvements

Cultural Assessment

- Cultural beliefs and values of:
  - Commercial watermen communities
  - Environmentalists
  - Recreational boating and fishing community
  - Seafood consumers
  - Scientists and natural resource managers

Cointroduction of Pathogens, Parasites, Viruses and Hitchhiker Organism

- National Research Council Report
  - Strict application of ICES protocols significantly reduces this risk.
- Taylor Shellfish Company, Washington
  - C.a. stocks examined by two certified laboratories and found to be specific pathogen free.
- UMBI COMBS

- Has not discovered any pathogens of concern to date.
- Conducting a viral risk assessment.

Is C. ariakensis a reef builder?

- NRC Report (pg. 92-93)
  - "It is common knowledge among oyster (workers) in China that C. ariakensis is a reef builder."
  - "…several reports that in India and Pakistan the oyster can be found on both hard substrates and muddy creek bottoms."
  - "Like other oyster species, larvae of C. ariakensis must settle on solid surfaces."
- 2004 Investigative Trip to China
  - Examined an oyster reef comprised of C. ariakensis and C. gigas in Laizhou Bay, China.

Will C. ariakensis pose increased human health risks resulting in additional fishery closure areas, and have an economic impact to the oyster fishery?

- NRC Report
  - "…there is no reason to expect the human health risks of C. ariakensis harvested from the Chesapeake Bay to be any different from those of consuming C. virginica…"
- MDE/VDH Letter to DNR
  - "…we concur with the NAS NRC report and see no reason to expect any different human health risks associated with C. ariakensis than are associated with C. virginica and see no reason to expect an increase in closed shellfish areas due to the introduction of C. ariakensis.

Oregon Stock – Genetic Bottleneck?

- U.S. West Coast Observations
  - No apparent inbreeding, resulting in slower growth or survival rates, appears to have occurred.
- Virginia Seafood Council
  - Field trials have not indicated any growth or survival impairments that may be related to inbreeding.
- Virginia Institute of Marine Sciences
  - Examining the potential use of other strains of C. ariakensis if needed.
- Hatchery Production
  - Oregon stock is suitable to initiate an introduction, and if necessary, additional stock diversity can be incorporated into hatchery program.

EIS Schedule: Where we are going

- Complete DRAFT EIS February 2005

  - Decision Point – Identify Preferred Alternative or Determine if Additional Information is Needed
- Public Review March 25 – May 8, 2005
  - Decision Point – Identify Preferred Alternative or Determine if Additional Information is Needed
- Publish Final EIS June 2005
- Record of Decision – Preferred Alternative
- Implement Preferred Restoration Alternative

Virginia Institute of Marine Science

Mr. Mann spoke on behalf of the Virginia Institute of Marine Science.

He said that he was delighted to attend the meetings of the Virginia Invasive Species Council.

He noted that Virginia has enormous diversity in its aquatic systems, from mountain streams all the way to the ocean.

He said that it would be expected to see a larger influx of invasive species. For example there are as many as 160 invasive species in the estuaries of the Chesapeake Bay, and perhaps the temperature and salinity extremes of the bay have prevented the successful establishment by other potentially invasive species. He commented on several extremely invasive species that threaten the bay such as the rappa welk first found in the bay in 1998 and some 10,000 individuals have been collected to date, and the European Green Crab and Asian Shore Crab are knocking at the Bay's door. He noted that once there is an invasive species in an open system it is almost impossible to get rid of it, and the real key is establishing a system to keep new invasives from arriving.

Mr. Mann said that it is important, yet difficult to balance serving the environmental needs vs. the economic needs of the country and the Commonwealth.

He said that Virginia is the world epicenter of hard clam agriculture. That has become a significant industry. Stocks of animals are starting to move up and down the coast. When things are moved as part of trade, even with native species there is the risk of transporting invasive species and diseases.

Virginia Department of Conservation and Recreation

Mr. Maroon noted that Mr. Smith would make the presentation for the Department of Conservation and Recreation. He commented that the scope of the issue is somewhat mindboggling and noted the significance of dealing with this issue just days after the floods resulting from Tropical Storm Gaston.

Mr. Smith made the following presentation:

Invasive Species in Virginia Forests and Waterways

Aliens – are not always detrimental – these species can be very beneficial – wheat, soybeans, tulips, etc.

Invasive alien plants typically exhibit the following characteristics:

- Rapid growth and maturity
- Prolific seed production
- Highly successful seed dispersal, germination and colonization
- Rampant vegetative spread
- Ability to out-compete native species
- High cost to remove or control

Impacts of Invasives

- 2nd leading cause in U.S. for decline in biological diversity
- Growth impact on valuable timber species
- Increased risk of wildfire and resulting property damage
- Block scenic viewsheds and negatively impact property values
- Clog important waterways
- Increased costs in maintaining open powerline rights-of-way
- "Invasive species…cause damage in the U.S… that is estimated to cost in the billions of dollars annually. In addition to their economic costs, invasive species can have a devastating effect on natural areas." U.S. General Accounting Office September 5, 2003.

Examples of Least Wanted Plant Invaders of Upland Forests and Wetlands

- Japanese stiltgrass (*Micorstegium vimineum*)
- Tree-of-Heaven (*Ailanthus altissima*)
- Garlic mustard (*Alliaria petiolata*)
- Common Reed (*Phragmites australis*)
- Purple Loosestrife (*Lythrum salicaria*)
- Giant Salvinia (*Salvinia molesta*) – why we need resources for early detection

Tree-of-Heaven (*Ailanthus altissima*)

- Native to China; introduced to Europe and then America in late 1700s
- Very fast growing tree; can grow in extreme environments
- Prolific seed producer and stump sprouter
- Quickly colonizes disturbed areas
- Very shade tolerant, but can invade into open fields
- Produces chemicals toxic to other plants (alleopathy)

- Sexual and asexual reproduction
- Control – hand pulling, herbicide

Tree-of-Heaven Impacts

- Displace native herbs and trees through prolific growth and toxin in the leaves and bark
- Forest health and biodiversity impacts
- Prolific in urban areas damaging sewers, water lines, roads and foundations

Japanese Stiltgrass (*Microstegium vimineum*)

- Native to Asia, from India to Japan. First discovered in the US in 1919 in Tennessee.
- Very shade tolerant annual; common in riparian areas and floodplains
- Produces abundant seeds every year
- Seeds are viable in the soil up to 5-7 years
- Easily invades scoured areas prone to frequent flooding
- Control – hand pulling late in the season, very selective herbicide control

Stiltgrass Impacts

- Dense growth and rootmats crowd out native vegetation with devastating biodiversity impacts
- In forests it prevents the development of tree seedlings thus stopping reproduction

Garlic Mustard (*Alliaria petiolata*)

- Native of Europe introduced to the U.S. by settlers. First recorded on Long Island in 1868
- Occurs in moist to dry habitats such as roadsides, floodplains, forest edges and interiors
- Control – hand pulling, herbicide, bio-control under development.

Garlic Mustard Threats

- One of the most serious invaders of northeastern and Midwestern forests
- Replaces many native flowering plans occupying the forest floor: trilliums, Virginia bluebells, spring beauty, wild ginger, bloodroot, toothworts, and others
- Caused the decline of West Virginia white butterfly (*Pieris virginiensis*) due to chemicals toxic to the butterfly's eggs

Phragmites

- A rhizomatous coarse perennial wetland grass that can grow up to 4 meters tall, with broad leaf blades and a feathery purplish inflorescence, turning brown after seed production.
- Worldwide distribution.
- Often forms dense monotypic patches.

Phragmites Threats

- Displaces native plant species such as wild rice, cattails, orchids
- Displaces wildlife by providing little food or shelter
- Poses a significant fire hazard to homeowners
- Blocks scenic views and impacts property values
- Inhibits mosquito control efforts

Purple loosestrife (*Lythrum salicaria*)

- Introduced to North America in ship ballast early 1800s
- Very attractive, easy to grow and popular in the horticultural trade
- Control – hand pulling, chemical, bio-control research underway

Purple loosestrife Threats

- Forms large monotypic stands displacing native plant and animal species; alters wetlands processes
- Several species of birds (Virginia rail, sora, least bittern, American bittern, marsh wren) do not nest in areas dominated by loosestrife

Salvinia molesta

- Possibly the World's Worst Weed – according to the U.S. Army Corps of Engineers
- This plant is native to South America and first reported in U.S. in 1997
- Now reported in North Carolina, South Carolina, Hawaii, Alabama, Texas, Mississippi, Louisiana, Florida, and now Virginia
- Popular in the aquarium and landscaping trade
- Under ideal conditions can reportedly double in biomass in 48 hours
- This occurrence is the northernmost known site in the United States

Salvinia molesta Threats

- Rapid rate growth, doubles in 48 hours
- The way it grows – it reproduces as pieces break off
- Mats of Salvinia can be three feet deep – eliminating sunlight, displacing native submerged vegetation
- As Salvinia dies, and decay causes a significant decrease in dissolved oxygen in the water.

He noted that Salvinia, like the Zebra mussel is an example of Virginia's lack of resources to deal with new introductions. In both cases an extremely invasive species has been found, but the resources do not exist to eradicate it.

Invasive Plants on the Web

- Where to find more information; DCR in cooperation with the Virginia Native Plant Society, has identified 108 invasive alien plant species that threaten natural ecosystems. www.dcr.virgnia.gov/dnh/invlist.pdf
- http://tncweeds.ucdavis.edu/
- http://www.invasive.org/eastern/srs/
- www.invasivespecies.gov
- http://plants.ifas.ufl.edu/seagrant/aquinv.html

Council Discussion on actions needed and Charge to the Virginia Invasive Species Advisory Committee

Secretary Murphy read the *Code of Virginia* citation for the Virginia Invasive Species Council addressing the Invasive species management plan.

> § 10.1-2606. (Effective until July 1, 2006) Invasive species management plan.
>
> Within 18 months following July 1, 2003, or as soon thereafter as funding allows, the Council shall prepare and issue the first edition of a state invasive species management plan, which shall recommend performance-oriented goals and objectives and specific measures of success for state agency efforts concerning invasive species. The management plan shall be developed through a public process in consultation with state agencies and stakeholders.
>
> The first edition of the management plan shall include a review of existing approaches and authorities for preventing the introduction and spread of invasive species, including ways of identifying pathways by which invasive species are introduced and minimizing the risk of introductions via those pathways, shall identify research needs and shall recommend measures to minimize the risk that introductions will occur. If recommended measures are not authorized by law, the Council shall develop and recommend to the Governor and General Assembly legislative proposals for necessary changes in authority.
>
> The Council shall update the management plan every three years. The second and subsequent editions of the plan shall evaluate and report on success in achieving the goals and objectives set forth in the previous edition of the plan. The plan shall identify the personnel, other resources and additional levels of coordination needed to achieve the plan's identified goals and objectives. The Council shall assess the effectiveness of the provisions of this chapter at least once each five

years and shall report to the Governor and the General Assembly on whether the provisions of this chapter should be revised.

Secretary Murphy acknowledged that this is an ambitious charge. He noted that he had requested that each of the agencies involved contribute funds to match an offer of funding from the Nature Conservancy. To date the Department of Conservation and Recreation has committed $5,000.

The Department of Health and Department of Transportation each pledged $1,000 and the Department of Forestry pledged and unspecified amount. Secretary Murphy asked the other Council members to please consider this request.

Secretary Murphy noted that the 18-month requirement set out in the Code does not lend much time to the development of a plan. He said that part of the statute requirement includes the identification of pathways in order to minimize the risk of introduction along those pathways.

The Council has the authority to develop recommendations for the Governor and the General Assembly with regard to non-native species.

Ms. Muir noted that there is a model at the federal level that may be helpful for state efforts that has specific recommendations. She agreed to get that information to Secretary Murphy.

Secretary Murphy said that he would like the Advisory Council to review the materials to be provided by Ms. Muir and then to report back to the Council with recommendations.

Mr. Nash said that there are other sources of knowledge and experience, including quite a long list of non-governmental organizations that have been concerned about the state and who have as part of their mission the charge to deal with invasive species. He suggested it would be good for the Council to hear from these organizations.

Secretary Murphy asked each agency to provide a summary of activities and programs with regard to invasive species. He asked that each agency provide the requested information to Mr. Smith at DCR by September 30th.

Mr. Maroon noted that the authorization for the Virginia Invasive Species Council will expire on July 1, 2006. A continuance may be possible, but justification would need to be provided to the General Assembly.

Secretary Murphy said that he would like to see some significant results by the end of calendar year 2005.

Next Meeting

The next meeting was set for Wednesday, December 15 at 11:00 a.m. The location is to be determined.

Public Comment

Secretary Murphy called for public comment.

Sarah Upshur commented regarding the lack of funding. She said that if the knowledge base was amplified there were other groups that would participate in the study and funding. She gave the example of an anglers group being interested in the control of the snakehead fish or timber management organizations being interested in protecting the forests.

Secretary Murphy noted that was in line with prior comments by Steve Nash regarding government and educational groups.

Stacy Moulds and Ruth Douglas commented that their organizations currently have programs focused on invasive species public outreach and they are ready to work with the Council on this issue.

James Akerson encouraged the Council to consider not only addressing species that are newly arrived to the state, but also the need to manage invasive species on special lands and habitats that may be plagued by widespread invasive species, for example tree-of-heaven and others on significant park land or phragmites in high priority tidal marsh systems.

There being no further comment, the meeting was adjourned.