Agricultural Management Guidelines for Participation in the Lost Pines Habitat Conservation Plan

1.0 Introduction

These agricultural guidelines were prepared for private landowners and agricultural managers in order to avoid, minimize and mitigate for impacts to the Houston toad (*Bufo houstonensis*) as a result of those agricultural activities described in the Lost Pines Habitat Conservation Plan (LPHCP). Anyone seeking incidental take authorization for agricultural activities that do not cause permanent habitat loss must submit a Notice of Intent (NOI) to implement and comply with the Agricultural Management Guidelines with the LPHCP Administrator on an annual basis. The Notice of Intent will include authorization for the County of Bastrop to enter the property for monitoring of compliance with this guideline and for biological monitoring for the Houston toad. Incidental take coverage will be extended upon the LPHCP Administrator issuing a Notice of Receipt (NOR) of the party's properly completed NOI[1]. Agricultural operations that do not follow these guidelines are not eligible for incidental take coverage under the LPHCP, and those operations must contact the U.S. Fish and Wildlife Service (Service) directly to obtain coverage for incidental take, if they desire such authorization.

The primary source for these guidelines was an inter-agency team formed in the early 1990s to develop agricultural guidelines for the Houston toad, as well as to encourage enhancement practices that would benefit the toad. The task force included the Natural Resource Conservation Service (NRCS), Texas Department of Agriculture (TDA), Texas Forest Service (TFS), Texas Parks and Wildlife Department (TPWD), and the Service (Linam and Grote 1995). Houston toads sometimes occur in semi-wooded areas that are also grazed. However, stock tanks with heavily impacted margins do not appear to be used by Houston toads, but may be used by the Houston toad after livestock access to the ponds is limited (Forstner 2001). Houston toads have been observed within stock tanks in pastures adjacent to forested areas. Postmetamorphic survival of the juveniles is influenced by the area immediately surrounding the stock tank (Forstner 2002; Thomas and Allen 1997). In 2003, a pilot project conducted by Environmental Defense, Dr. Mike Forstner, the County of Bastrop, and the Pines and Prairies Land Trust, with funding assistance from the National

[1] Technical terms are identified in bold type at the first use of the term and are defined in Section 6.0 (Definitions).

Wildlife Federation and the Sand County Foundation's Aldo Leopold Fund, demonstrated the benefits to the Houston toad of limiting livestock access to stock tanks.

1.1 Long Term Benefits To The Houston Toad

The Houston toad depends on healthy and mature forest ecosystems with mixed species composition, moderate canopy cover, an open understory layer with a herbaceous component, and shaded breeding pools. See Section 3.4 of the LPHCP. Unmanaged forests, and forests that sustain other types of land uses (such as agricultural activities) can become less suitable Houston toad habitat over time. Without active management, forests can be negatively impacted by cattle, pollutants, and vehicles. Active management of existing forests and minimizing negative impacts from various types of land uses within, and adjacent to, forested areas is essential to the long-term sustainability of Houston toad habitat in the Plan Area.

The LPHCP identifies the characteristics of suitable Houston toad habitat and provides the guidance, the mechanism, and the incentive for individual property owners to develop and sustain healthy and mature forests on their property. However, many common land management activities have the potential to negatively impact Houston toads in the short-term, such as: (1) using equipment to remove brush or thin forest stands, (2) implementing prescribed burns to manipulate forest vegetation and prevent large forest fires, and (3) using chemicals to help control non-native or invasive wildlife or plants. The LPHCP guidelines provide specific guidance for avoiding and minimizing short-term negative impacts to Houston toads resulting from common management practices in, and adjacent to, forest habitat.

2.0 Activities Covered

These practices relate to agricultural activities on (1) cultivated land, (2) improved pasture or hayland (not cropland), and (3) rangeland/native grazing lands/grazable woodlands/native pasture. Activities occurring on theses lands include controlling brush and weeds, installing and maintaining fences, grazing livestock and horses within recommended limits, dispersing animal wastes on fields and pastures, constructing stock tanks, and planting and harvesting crops or forage in areas dedicated to these uses prior to the approval of the LPHCP. Also, application of pesticides and herbicides, mowing fields and pastures, constructing and maintaining farm and ranch roads or trails, constructing water crossings for livestock or equipment, and any similar activities are addressed herein. Not covered under the LPHCP are impacts to toad habitat as a result of the conversion of native vegetation

communities to intensive agricultural uses. This includes creation of new crop fields, seeding native grasslands with sod grasses, clearing woodlands or overstocking grazing/stocking to levels not consistent with the guidelines of the NRCS for the type of vegetation and use.

3.0 Guidelines for Existing Cultivated Land (Cropland)

Definition: Cropland - land used for the production of cultivated crops or land where some sort of tillage or cultivation is performed each planted year.

Discussion: This is not considered Houston toad habitat but these guidelines should be included in any management plan dealing with cropland. Houston toads may use the margins of the cropland.

In Bastrop County, crops grown in the Plan Area include potatoes, peanuts, small grains for grazing, oats, watermelons (small number of acres), flowers (one or two producers), blackberries, and Christmas trees.

Minimum guidelines are:

1. Manage crop residue near soil surface;
2. Crop rotation: planting of high residue crops as determined by soil needs;
3. Fertilizing and liming according to soil tests; and
4. Integrated pest management.

Practices approved for cultivated cropland in the Plan Area include:

1. Terraces (not constructed on sandy or shallow soils);
2. Waterway maintenance;
3. Contour plowing;
4. Livestock water and livestock troughs or earthen tanks or ponds; and
5. Fences (grazed cropland).

Enhancement practices for toads include:

1. Herbaceous buffers – maintain a 150-foot (45.7 meter) buffer around ponds, native bunchgrass, and woodland/forestland when conducting ground application of fertilizer, herbicides, or pesticides;

2. Fences – fence off all native vegetation, wooded areas, ponds, and riparian areas on grazed cropland;

3. Use tall native bunch grasses for waterways, if possible; and,

4. Control Fire Ants: Fire ants are believed to be a serious and increasingly important threat to Houston toads; control fire ant infestations by limiting soil disturbance, inspecting imported soil and nursery products thoroughly for fire ants, and properly disposing of trash; where fire ant treatment is needed, use a product that is labeled for pasture use (e.g., Extinguish or Justice), and follow the label directions.

4.0 Guidelines for Existing Improved Pastureland and Existing Hayland (not cropland)

Definition: Improved pastureland and existing hayland - grazing lands planted with introduced or domesticated native forage species that receive periodic renovation and/or cultural treatment, such as tillage, mowing, weed management, and irrigation. Grazable plants are not planted in rotation with crops.

Discussion: Pasture grasses in Bastrop County include Hybrid Bermuda grass and Bahia grass. This vegetation type is not considered Houston toad habitat. However, toads do use the margins (Forstner 2002) and often utilize stock tanks for breeding (Forstner 2000, 2001, 2002).

Practices approved for pastureland in the Plan Area include:

1. Pasture management (grazing height and frequency);

2. Nutrient management (fertilizer and manure management);

3. Integrated pest management[1]: weed control; brush management (maintenance)[1]; Bahia grass (*Paspalum notatum*) control in bermudagrass[1] (*Cynodon dactylon*); insecticides (grasshoppers and army worm control)[1];

4. Brush management (only individual plant treatment by approved herbicide, grubbing, or clipping)[1];

[1] These practices that were not approved by the 1995 team.
[2] Practices that were approved with criterion by the 1995 team.

5. Livestock watering by means of: a) existing troughs and pipelines; b) new troughs and pipelines[1]; c) existing ponds; and d) new ponds[2];
6. Fences (existing);
7. Fences (new)[1]; and
8. Critical area treatment and planting.

Enhancement practices for toads include:

1. Buffers (maintain a 150-foot buffer around ponds, native bunchgrass, woodland/forestland, and riparian areas when applying herbicides, pesticides, except for fire ants, or fertilizer);
2. Riparian forested buffer (allow water channels/pond perimeters to revert to wooded habitat);
3. Fence (fence woodland/forest areas, native bunchgrass areas, and riparian areas);
4. Rotational grazing; and,
5. Control fire ants around ponds during toadlet emergence. Consult with the LPHCP administrator for the latest information regarding period of likely toadlet emergence. Control fire ant infestations by limiting soil disturbance, inspecting imported soil and nursery products thoroughly for fire ants, and properly disposing of trash. Where fire ant control is needed, use a product that is labeled for pasture use (e.g., Extinguish or Justice), and follow the label directions.

5.0 Guidelines for Native Grazing Lands – Rangeland, Grazable Woodland, and Native Pasture

Discussion: These are considered toad habitat. The types of practices that are involved with these vegetation types depend upon the landowner or land manager's objectives. In addition, any landowner who wants to manage for wood products or timber production must also refer to the Forest guidelines (Appendix E). Christmas tree farms are an agricultural use and are covered by these guidelines. The land use will be determined by the land manager's objectives or the site potential. If these vegetation types are managed for livestock grazing or wildlife management, the land use would be rangeland or native pasture.

If the landowner's objective is forest, then the land use would be forestland or grazeable woodland. The practices remain virtually the same but the order of importance changes. The land user's objective might be timber production but will graze livestock until the tree canopy becomes so great that there is no forage produced.

Beneficial grazing of plant communities requires consideration of plant types. Use and management of native grazing land and improved pastureland must revolve around use and management of plants. The measure of productivity for grazing land is neither the number of animals nor the number of acres but the amount and quality of plants. Plants are the crops produced on grazing land. Animals are used to harvest the crops. Plants are managed chiefly through the manipulation of grazing animals; such management must be based on the needs of the plants and livestock. Plants manufacture food in their leaves and green stems from the minerals and water they take from the soil and from the elements from the air. The sun supplies the energy. Perennial plants use the manufactured food for maintenance, growth, and reproduction and as a reserve for resuming growth following defoliation or dormant periods. Vigorous plants produce more top growth than they need to manufacture food for their maintenance and reproduction. This excess plant material can be safely harvested. If too much photosynthetic tissue is repeatedly removed from the plants from overgrazing or clipping, the plant becomes less vigorous, less competitive, and more susceptible to damage by drought, heat, insects, or disease. All herbivores have the ability to over use or graze plants, and while livestock are the most commonly considered, this also includes insects, rodents, and rabbits. If over use continues, the plant will die. Plants in the community compete with each other for moisture, sunlight, nutrients, and space. Healthy plants are better competitors than unhealthy ones. The proper degree of use plus occasional rest during the critical growing period is essential to production and the desirable changes in the plant community.

A healthy woodland is recognized as an important factor for Houston toad habitat. The habitat must also be protected from catastrophic wildfires, caused by the buildup of excessive fuel loads in wooded areas. Catastrophic wildfires generate so much heat that the trees are killed, the soil sterilized, and burrowing animals, including the Houston toad, are threatened. Fuel loads in woodlands can be estimated by forestry professionals and managed through selective clearing/pruning/cutting/removal, grazing, and prescribed burns. Prescribed burns should be done in accordance with the Forestry Guidelines of the LPHCP.

NOTE: Compliance with this guideline for Native Grazing Lands does not necessarily equal the requirements for maintaining an agricultural exemption under the Tax Code of Texas or guidelines adopted by the Bastrop Central Appraisal District for maintaining or acquiring an agricultural exemption. The owners of tracts of land less than

400 acres (162 hectares) should investigate and consider qualifying for the agricultural land in wildlife management use exemption under the Texas Tax Code.

Practices approved for livestock grazing in Native Grazing Lands within the Plan Area include:

1. Proper grazing use or prescribed grazing/proper woodland use in which no more than 50% of the normal annual growth is grazed;
2. Deferred grazing or planned grazing system;
3. Brush management (chemical, mechanical, and biological);
4. Livestock water: pipelines and troughs (existing); pipelines and troughs (new construction); new and existing ponds (construction is not allowed during the Houston toad breeding season or emergence period (January 1 through June 30);
5. Critical area shaping and planting;
6. Manure management;
7. Wildlife upland habitat management;
8. Fences (existing); and
9. Fences (new).

Enhancement practices for toads include:

1. Planned grazing systems;
2. Fence existing ponds and provide a lane to water for livestock. As an enhancement practice for ponds used to water livestock, fence part of the edge of the pond to limit access by livestock and protect the pond edge, but allow livestock access to a smaller area (approximately 30 percent or less of the pond edge);
3. Fence and control livestock grazing in riparian areas;
4. Fence large wooded areas without herbaceous vegetation suitable for grazing;
5. If forestland is the land use, do not graze unless for a prescribed purpose;
6. Modified pond construction; and
7. Control fire ants – control infestations by limiting soil disturbance, inspecting imported soil and nursery products thoroughly for fire ants, and properly

disposing of trash. Where fire ant treatment is needed, use a product that is labeled for pasture use (e.g., Extinguish or Justice), and follow the label directions.

6.0 BRUSH MANAGEMENT

The guidelines below represent a means for avoiding or minimizing the take of individual toads during brush management activities. Brush management will mitigate for any short term negative impacts to the Houston toad by increasing the quality and quantity of land that can provide habitat for the Houston toad.

The guidelines for brush management within the Plan Area include:

1. Removal of trees and brush with heavy mechanical equipment (e.g., bulldozers or tractors) must be conducted outside of the breeding season and emergence period of the Houston toad (January 1 through June 30). Hand clearing (e.g., chainsaws, clippers, axes, etc.) for the selective removal of trees and branches may be used at any time. However, no hand clearing is allowed within Water Management Zones (WMZ) during the breeding season and emergence period of the Houston toad;

2. Brush removal practices using heavy mechanical equipment are prohibited within WMZs. Hand clearing and manually stacking slash and brush is allowed within WMZs outside of the Houston toad breeding season and emergence period, but a minimum 50 percent canopy must remain within the WMZ. The guidelines for constructing toad friendly ponds (Wildlife Management Guidelines, Section 8.2)should be consulted for determining recommended vegetation layout adjacent to water features. For example, the deep end of a pond should receive more sunlight than the shallow end of a pond;

3. The application of herbicides for brush management is prohibited within WMZs;

4. Herbicides may be used outside of the Houston toad breeding season and emergence period (January 1 through June 30) according to the product label, as necessary, outside of WMZs, but application is limited to individual plant treatment or ground application only; and,

5. Whether using heavy mechanical equipment, hand clearing, or herbicides to remove trees and brush, landowners must use the single-tree selection or

group selection techniques listed below, and not exceed the allowable amount of tree removal listed under each technique.

A. Single-tree selection is an allowed method of thinning/harvest in occupied Houston toad habitat. The residual stand (trees remaining following the timber operation) must contain no less than 80 square feet per acre (18 square meters per hectare) average basal area which simultaneously maintains toad habitat; or,

B. Group selection is allowable within occupied Houston toad habitat if implemented using the following criteria:

- Group selection is not allowed within WMZs;
- Maximum group size is not to exceed five acres regardless of tract size but cannot exceed 20 percent of the tract;
- Maximum width of any group is not to exceed 100 feet (30.5 meters);
- Harvest cycles for group cuts are set at intervals of 7 years or more;
- Consecutive (by harvest cycle), adjacent group harvests are not allowed. Harvests should cycle in a mosaic pattern on each parcel;

Brush control techniques within tame pasture or native pasture are not restricted because these areas are not considered to be Houston toad habitat. However, landowners are encouraged to maintain trees and brush within pastures to provide cover for wildlife. Brush found in tame or native pastures within 50 feet (15 meters) of a water feature without any adjacent forested area should be removed by hand clearing. Landowners are encouraged to maintain brush piles, where practicable, to supply cover for wildlife.

7.0 PRESCRIBED BURNING

7.1 Forestlands

Prescribed burning is a wildlife management tool practiced within forestlands to remove excess tree litter and understory vegetation, such as cedar (Juniperous spp.) and yaupon (*Ilex vomitoria*), to prevent the understory from becoming too thick and shading out

desirable grasses, forbs, and browse. Prescribed burns in post oak-dominated forestlands are most successful just after leaf drop and prior to the onset of winter rains in November or December. For guidelines regarding prescribed burning within forested stands see the Forest Management Guidelines of the LPHCP. The prescribed burning in forestlands guidelines represents a means for avoiding or minimizing the take of individual toads during prescribed burns. The removal of excess tree litter and understory vegetation will mitigate any short term negative impacts to the Houston toad by increasing the quality and quantity of land that can provide habitat for the Houston toad.

7.2 Native Pastures

Prescribed burning is used to maintain oak savannah and native grassland communities, where native grasslands are interspersed with forest mottes. Prescribed burning will remove old grass litter and any young, invasive woody plants (e.g., cedar, locust, or elm) within the native pastures. The removal of the grass litter will increase bare ground area, thus promoting forb growth that will provide browse for deer, seeds for birds, and insects for many wildlife species, including the Houston toad. Late summer (e.g., August and September) burns are very effective in killing unwanted woody growth within pastures, but the combination of low humidity and high temperatures make these fires more difficult to manage. Safer conditions exist just after the first frost between November and December when humidity levels are higher and temperatures are lower.

The guidelines for prescribed burning in native pastures represent a means for avoiding or minimizing the take of individual toads during prescribed burns. The removal of excess tree litter and understory vegetation will mitigate any short term negative impacts to the Houston toad by increasing the quality and quantity of land that can provide habitat for the Houston toad.

1. Prescribed burning within native pastures is allowed at any time, but all water features must be avoided;

2. The burn must be conducted in accordance with Texas Commission on Environmental Quality (TCEQ) rules (Texas Administrative Code Title 30 - Part 1 -SubChapter B Chapter 111.211 and 111.219, as amended);

3. Prescribed burning should be conducted on approximately one-third of native pasture acreage each year; and

4. Disked firebreaks and firelines will be 10 to 20 feet (3.0 to 6.1 meters) wide and will not be constructed during the breeding season and emergence period of the Houston toad (January 1 through June 30). Firebreaks will not be constructed within WMZs.

8.0 Definitions

Brush Management – Removal, reduction, or manipulation of non-herbaceous plants.

Cropland – Land used for the production of cultivated crops or land where some sort of tillage or cultivation is performed each planted year.

Cultivated Land – see Cropland.

Forestland – land in which the climax vegetation is composed principally of trees and understory shrubs, with various quantities of grasses, grasslike plants, and forbs. The forested area includes only pine, pine-hardwood regions of this state and principal bottomland hardwood forest along major streams.

Grazable Woodland – forestland that produces, at least periodically, sufficient understory vegetation suitable for forage that can be grazed without significantly impairing wood production and other forest values.

Hayland – see Improved Pasture.

Improved Pasture – Grazing lands planted with introduced or domesticated native forage species that receive periodic renovation and/or cultural treatment, such as tillage, mowing, weed management, and irrigation. Grazable plants are not planted in rotation with crops.

Integrated Pest Management – A strategy for pest control that emphasizes activities that reduce pest problems and controls pests using non-toxic or least-toxic methods.

Native Grazing Land – land used primarily for production of native forage plants, maintained or manipulated primarily through grazing management. Native grazing land includes rangeland, grazable woodland, native pasture, individually or collectively.

Native Pasture – land on which the native vegetation (climax or natural potential plant community) is used primarily for production of plants for forage. Native pasture includes cutover forestland and forested areas that were cleared and use in the past for cropland.

Plan Area – The 124,000-acre permit area of the LPHCP representing potential Houston toad habitat in Bastrop County.

Proper Grazing Use, or Prescribed Grazing – a degree and time of use of the current years growth, which if continued, will maintain or improve the range condition consistent with conservation of natural resources. Managing the controlled harvest of vegetation with grazing animals.

Rangeland – land on which native vegetation (climax or natural potential plant community) is predominantly grass, grass-like plants, forbs, or shrubs suitable for grazing or browsing use. Rangeland includes natural grasslands, savannas, many wetlands, some deserts, tundra, and certain forb and shrub communities.

Water management zone (WMZ) – A buffer area immediately adjacent to stream channels (areas at least 3 feet (0.9 meters) wide where a sufficient amount of water has scoured away the vegetation) or other water bodies, such as ponds, wetlands, springs, or seeps. The purpose of a WMZ is to protect important breeding and emergence habitat for the Houston toad, in addition to protecting water quality. The minimum width for an WMZ is 50 feet (15 meters) from all edges of the buffered feature. WMZs are not within or adjacent to treed areas. Consult definition of Primary Habitat. Water Management Zones are often referred to as Streamside Management Zones in literature.

9.0 Literature Cited

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