

**Biological Advisory Team
for the
Hays County Regional Habitat Conservation Plan**

**NOTICE OF OPEN MEETING
(Also available at www.hayscountyhcp.com)**

A meeting of the Biological Advisory Team (BAT) for the Hays County Regional Habitat Conservation Plan (RHCP) will be held as follows:

Date & Time: **June 3, 2008; 9:00 a.m.**

Location: **Texas Rivers Center, Room 107, 951 Aquarena Springs Drive, San Marcos, TX 78666 (map at <http://www.maps.txstate.edu/trc.html>)**

Members of the Hays County Commissioners Court may attend, but no deliberation will occur and no action will be taken.

Members of the Hays County RHCP Citizens Advisory Committee (CAC) may attend, but no deliberation will occur and no action will be taken

The following subjects will be considered for discussion and/or action at said meeting:

1. Call to order.
2. Approve minutes from March 28, 2008 BAT meeting.
3. Citizens' comments.
4. Review project schedule and major milestones.
5. Review options for species coverage in the Hays County RHCP.
6. Review golden-checked warbler habitat map.
7. Review preliminary draft Habitat Conservation Plan.
8. Discuss and take appropriate action on agenda items for next meeting.
9. Adjourn.

BIOLOGICAL ADVISORY TEAM "BAT" MEETING
Hays County Regional Habitat Conservation Plan

MINUTES

WHEN: March 28, 2008

WHERE: Texas Rivers Center, Room 226
951 Aquarena Springs Drive, San Marcos, TX 78666

Attendance:

BAT Members

- Craig Farquhar (Chair)
- Terri Siegenthaler
- Lee Elliott
- Linda Laack
- Randy Gibson
- Garry Stephens
- Cal Newnam

HCP Consultant Team

- Clifton Ladd, Amanda Aurora (Loomis Austin)
- Jean Krejca (Zara Environmental)
- Melinda Taylor (Smith/Robertson)

Other Attendants:

- Aimee Roberson (US Fish and Wildlife Service)
- Rachel Ranft (The Nature Conservancy)

1. Call to order. BAT Chair Craig Farquhar called the meeting to order at 9:05 am.
2. Approve minutes from February 28, 2008 BAT meeting. BAT members reviewed and approved the minutes from the February 28, 2008 meeting with no changes.
3. Citizens' comments. No citizen comments were made.
4. Review project schedule and major milestones. Clifton Ladd reviewed the overall project schedule and summarized discussions from the Commissioner's Court February 26, 2008 work session and the Citizen's Advisory Committee (CAC) meeting on March 27, 2008. Mr. Ladd reported that the consensus of the CAC expressed at the March 27 meeting was to proceed with a conservation strategy that incorporated a small initial preserve block and a rolling conservation bank, with the ultimate goal of satisfying Hays County's contribution to recovery goals for the covered species. Mr. Ladd also reported that the NEPA scoping meeting would likely be held in June.
5. Review options for species coverage in the Hays County RHCP. The BAT unanimously voted to finalize the recommendations for species coverage under the plan, with minor spelling corrections and the addition of a note regarding the northern Hays County

populations of *Eurycea* salamander as either *E. nana* or *E. sorsorum*. The BAT also discussed the development of “no take” guidelines for addressing impacts to listed salamanders. The consensus of the BAT was that there may not be a biological basis for expanding the use of the existing TCEQ optional water quality measures to other species without further study. BAT member Randy Gibson agreed to review the TCEQ optional measures and suggest possible changes for use in the plan.

6. Review progress on habitat maps and proposed habitat determination process. Jean Krejca presented updated maps of karst species of concern that include known localities of the species of concern included to be included in the RHCP. The BAT discussed proposed processes for habitat determinations under the plan. The BAT consensus was that habitat determinations should be made using on-site assessments, instead of map-based assessments. Some BAT members were not comfortable with the TPWD description of vireo habitat presented in Campbell (2003), particularly the 6-ft canopy height and lack of criteria regarding vertical cover. The BAT recommended that another description be used, such as the habitat description from Birds of North America account for the black-capped vireo.
7. Review preserve design criteria. The BAT discussed the use of “core habitat” to define biologically valuable habitat in the preserve. The BAT consensus was that the concept adequately considered a number of biological considerations relevant to preserve design. The BAT was concerned about the proposed minimum preserve block size for the vireo, and suggested that the proposed 40 acre minimum size was not sufficient. Amanda Aurora and Melinda Taylor described concepts related to the proposed Recovery Credit Bonus, where additional mitigation credit would be generated when the overall preserve size reached certain size thresholds approaching the recovery goals. The BAT was uncertain about the biological validity of this concept, but made no recommendations for or against the idea.
8. Discuss and take appropriate action on agenda items for next meeting. Clifton Ladd announced a planned field trip to view golden-cheeked warblers, springs, and karst features in Hays County as a joint meeting of the BAT and the CAC on April 26, 2008. The BAT agreed that the next formal meeting would be June 3, 2008 to discuss comments on the first draft HCP document.
9. Adjourn. BAT Chair Craig Farquhar adjourned the meeting at 12:07 pm.

Hays County HCP Basic Schedule of Major Milestones and Decision Points

	November - December 2007	January 2008	February 2008	March 2008	April - May 2008	June 2008	July - August 2008	September 2008	October 2008	November 2008	December 2008	January 2009	February - March 2009	April - May 2009	June 2009
Major Task or Milestone	Initial Conservation Strategy: Presentations, Background, and Early Discussion	Species List for RHCP	RHCP Alternatives and Initial Conservation Program Design	Funding Strategy	Prepare 1st Complete Draft HCP	Review 1st Draft HCP and Hold Public NEPA Scoping Meeting	Prepare 2nd Draft HCP and Prepare EIS	Review 2nd Draft HCP and First Draft EIS	Prepare 3rd Draft HCP and Draft EIS	Review 3rd Draft HCP and Draft EIS	Prepare Final Draft HCP and Preliminary Draft EIS	Submit Complete Application Package and Hold Public Hearing (rcqd' by TPWD Code)	NEPA Public Hearing and Respond to Public Comments	Prepare Final HCP and EIS; Review and Comment on FWS Documentation	Receive Incidental Take Permit
CAC Responsibilities or Actions		Reviewed and Provisionally Accepted Recommended Draft Species List	Review and Discuss RHCP Alternatives	Identify Preferred RHCP Alternative and Provide Feedback on Preferred Funding Mechanisms		Review and Provide Comment on Draft HCP		Review and Provide Comment on Draft HCP and Draft EIS		Possible Meeting to Review and Provide Comment on Draft HCP and Draft EIS					
BAT Responsibilities or Actions		Recommended Draft Species List	Review and Discuss Mitigation Assessments and Preserve Design Criteria	Provide Feedback on Adequacy of Mitigation Assessments and Preserve Design Criteria		Review and Provide Comment on Draft HCP		Review and Provide Comment on Draft HCP and Draft EIS		Possible Meeting to Review and Provide Comment on Draft HCP and Draft EIS					
Commissioner's Court Actions			Work Session to Review Species List, Habitat Maps, Draft Alternatives, and Funding Options							Review and Comment on Draft HCP and Draft EIS		Approve All Documents for Submittal to USFWS (Final Draft HCP and Preliminary Draft EIS)		Review and Approve Final HCP and EIS	Begin Program Implementation

HAYS COUNTY HABITAT CONSERVATION PLAN

BIOLOGICAL ADVISORY TEAM

RECOMMENDATIONS FOR SPECIES INCLUSION IN THE HAYS COUNTY HABITAT CONSERVATION PLAN

JUNE 3, 2008

Deleted: APRIL 14, 2008

The Biological Advisory Team (BAT) of the Hays County Habitat Conservation Plan (Hays County HCP) was asked to propose a list of species to include in the plan and to provide recommendations for the most appropriate type of coverage for included species. This proposal is the BAT's consensus recommendation for consideration by the Citizens Advisory Committee and the Hays County Commissioners Court.

With the assistance of the consultant team, the BAT assembled a comprehensive list of rare or sensitive species known to occur in Hays County based on the following sources:

1. All federal and state listed threatened or endangered species, or designated candidates for such listing;
2. All species tracked by the Texas Parks and Wildlife Department on the Annotated County List of Rare Species for Hays County (as of August 8, 2007) or the Texas Natural Diversity Database (as of October 2, 2006);
3. All species known to occur in Hays County that were included on recent federal listing petitions filed by the Forest Guardians or Karst Waters Institute; and
4. Other species identified by BAT members as rare or sensitive.

This initial comprehensive list of species of concern in Hays County included 115 taxa, including a number of plants, invertebrates, fish, amphibians, reptiles, and mammals. The BAT refined this comprehensive list of species of concern by selecting species that met the following preliminary criteria:

Deleted: 112

Deleted: species

1. All federally listed species;
2. All state-listed amphibians and reptiles;
3. All species with a NatureServe¹ global rank of G1 through G2G3; and
4. All species endemic to Hays County.

¹ NatureServe is a non-profit conservation organization whose stated mission is to provide the scientific basis for effective conservation action. NatureServe and its network of natural heritage programs are a leading source for information about rare and endangered species and threatened ecosystems. The NatureServe conservation status of a species or community is designated by a number from 1 to 5, preceded by a letter reflecting the appropriate geographic scale of the assessment (G = Global, N = National, and S = Subnational). The numbers have the following meanings: 1 = critically imperiled; 2 = imperiled; 3 = vulnerable to extirpation or extinction; 4 = apparently secure; 5 = demonstrably widespread, abundant, and secure.

The BAT further reviewed the comprehensive and filtered lists of species of concern to arrive at the recommended list of species of concern to address in the Hays County HCP. Several species meeting the above criterion, after further review from the BAT, were removed from the list based on one or more of the following reasons:

- The species was not likely to occur within the anticipated coverage area of the plan (i.e., the portion of Hays County within the Edwards Plateau ecoregion, generally west of Interstate Highway 35);
- Recent research or known life history characteristics of the species suggest that it is likely to be more common than otherwise indicated by the NatureServe ranking; and/or
- The species would not be likely to benefit from the anticipated conservation actions to be implemented under the plan (i.e., the habitat types used by the species were not compatible with the habitat of the recommended covered species).

This recommended list of species of concern for the Hays County HCP includes 58 species, shown in Table 1.

The BAT identified three levels of coverage for recommended species of concern to be addressed in the Hays County HCP:

1. Covered Species – Hays County should seek incidental take authorization for species in this category. The HCP must adequately describe the expected amount of take and impacts to the species and demonstrate that the benefits provided by mitigation measures in the conservation program satisfy the issuance criteria for an incidental take permit. This option may be appropriate for federally listed species that would experience take by activities covered by the HCP or species that may become listed in the foreseeable future and would likely experience take by covered activities.
2. Evaluation Species of Concern – Incidental take authorization for species of concern in this category may become necessary over the term of the Hays County HCP incidental take permit; however, including these species as “covered” is not justified at this time. Evaluation species of concern may be currently unlisted, but could become listed in the foreseeable future (many have already been petitioned for listing). Sufficient information on these species may also be lacking to support the level of analysis required to meet the issuance criteria for incidental take authorization. Hays County should include conservation measures to benefit evaluation species of concern, where practicable, and support research to help fill existing data gaps on the biology, habitat, distribution, or management of these species. The research supported

Deleted: ;

by the HCP may help preclude the need to list these species, or it could help facilitate obtaining incidental take coverage if these species become listed in the future.

3. Additional Species of Concern – Hays County should not seek incidental take authorization for species in this category because the species is not currently listed as threatened or endangered, the species is not likely to experience take from covered activities, or insufficient information is available to adequately evaluate take and mitigation. However, recognizing the rarity or sensitivity of these species, the HCP should include conservation measures to benefit additional species of concern, where practicable.

Deleted: ;

The BAT assigned each of the species of concern recommended for inclusion in the Hays County HCP to one of the three coverage categories. The BAT recommends that the current body of knowledge and expected regulatory needs justify including the golden-cheeked warbler and black-capped vireo as covered species under the plan. The County should seek incidental take coverage for these two species.

The BAT assigned the remaining 56 species of concern to a coverage category considering the likelihood of future listing, the current body of knowledge on the species, and potential overlaps with expected conservation measures for covered species.

The BAT recommends that unlisted karst species (both terrestrial and aquatic) be considered as a group as “evaluation species of concern.” The specific list of karst species included in the plan under this category is less important if the plan focuses on the karst environment itself. Little is known about karst habitats in Hays County in general, but the possibility for future listing of one or more of these species is high. Supporting research on karst habitats and the distribution of rare karst species across the County would provide valuable information that would support conservation and planning efforts in the county. The BAT also recommends that the Cagle’s map turtle be included as an evaluation species of concern, since it has been petitioned for listing in the past. Needed research could include additional surveys to define its distribution in Hays County and the effectiveness of conservation/management practices. The proposed list of evaluation species of concern includes 40 karst species.

Deleted: (39 terrestrial or aquatic karst species and the Cagle’s map turtle)

The BAT recommends that the species not classified as “covered” or “evaluation species of concern” be included in the Hays County HCP as “additional species of concern.” These species include several of the currently listed aquatic species, as well as unlisted plants and surface aquatic species. Conservation measures likely to be included in the plan, such as habitat protection for the golden-cheeked warbler and black-capped vireo, could provide secondary conservation benefits for these additional species by protecting similar habitats. The proposed list of additional species of concern includes 16 species (three unlisted plants, one listed plant, six unlisted invertebrates, two listed invertebrates, and four listed vertebrates). Included among the four listed vertebrates in this category is the *Eurycea* salamander observed from a few locations in

Deleted: six listed aquatic species, three unlisted plants, and six unlisted surface aquatic species

Deleted: T

Deleted: also includes

northern Hays County. While this salamander has not been formally identified, it is likely to be either *E. nana* (San Marcos Springs salamander) or *E. sosorum* (Barton Springs salamander), or a hybrid of those species.

Deleted: both

The complete list of recommended species of concern to include in the Hays County HCP and the recommended type of coverage for these species is shown in the following table.

Deleted: attached

Table 1. Recommended Species of Concern for the Hays County Habitat Conservation Plan and Recommended Coverage Categories.

Common Name	Scientific Name	Taxa	Habitat
COVERED SPECIES OF CONCERN			
Golden-cheeked warbler**	<i>Dendroica chrysoparia</i>	Birds	Juniper-Oak Woodland
Black-capped vireo**	<i>Vireo atricapilla</i>	Birds	Deciduous Shrubland
EVALUATION SPECIES OF CONCERN			
Aquifer flatworm	<i>Sphalloplana mobri</i>	Turbellarians	Aquatic / Karst
Flattened cavesnail	<i>Phreatodrobia micra</i>	Mollusks	Aquatic/Karst
Disc cavesnail	<i>Phreatodrobia plana</i>	Mollusks	Aquatic/Karst
High-hat cavesnail	<i>Phreatodrobia punctata</i>	Mollusks	Aquatic/Karst
Beaked cavesnail	<i>Phreatodrobia rotunda</i>	Mollusks	Aquatic/Karst
<u>a cave-obligate leech</u>	<u><i>Mooreobdella n. sp.</i></u>	<u>Hirudinea</u>	<u>Aquatic/Karst</u>
a cave-obligate crustacean	<i>Tethysbaena texana</i>	Crustaceans	Aquatic/Karst
a cave-obligate amphipod	<i>Allotexiweckelia hirsuta</i>	Crustaceans	Aquatic/Karst
a cave-obligate amphipod	<i>Artesia subterranea</i>	Crustaceans	Aquatic/Karst
a cave-obligate amphipod	<i>Holsingerius samacos</i>	Crustaceans	Aquatic/Karst
a cave-obligate amphipod	<i>Seborgia relicta</i>	Crustaceans	Aquatic/Karst
Balcones cave amphipod	<i>Stygobromus balconis</i>	Crustaceans	Aquatic/Karst
Ezell's cave amphipod	<i>Stygobromus flagellatus</i>	Crustaceans	Aquatic/Karst
a cave-obligate amphipod	<i>Texiweckelia texensis</i>	Crustaceans	Aquatic/Karst
a cave-obligate amphipod	<i>Texiweckeliopsis insolita</i>	Crustaceans	Aquatic/Karst
Texas troglobitic water slater	<i>Lirceolus smithii</i>	Crustaceans	Aquatic/Karst
a cave-obligate decapod	<i>Calathaemon holtbuisi</i>	Crustaceans	Aquatic/Karst
Balcones cave shrimp	<i>Palaemonetes antrorum</i>	Crustaceans	Aquatic/Karst
a cave-obligate spider	<i>Cicurina ezelli</i>	Arachnids	Karst
a cave-obligate spider	<i>Cicurina russelli</i>	Arachnids	Karst
a cave-obligate spider	<i>Cicurina ubicki</i>	Arachnids	Karst
undescribed cave-obligate spider	<i>Eidmannella n. sp.</i>	Arachnids	Karst
undescribed cave-obligate spider	<i>Neoleptoneta n. sp. 1</i>	Arachnids	Karst
undescribed cave-obligate spider	<i>Neoleptoneta n. sp. 2</i>	Arachnids	Karst
undescribed cave-obligate spider	<i>Neoleptoneta n. sp. eyeless</i>	Arachnids	Karst
a pseudoscorpion	<i>Tartarocreagris grubbsi</i>	Arachnids	Karst
a cave-obligate harvestman	<i>Texella diplospina</i>	Arachnids	Karst
a cave-obligate harvestman	<i>Texella grubbsi</i>	Arachnids	Karst
a cave-obligate harvestman	<i>Texella mulaiki</i>	Arachnids	Karst
a cave-obligate harvestman	<i>Texella renkesae</i>	Arachnids	Karst
a cave-obligate springtail	<i>Arrhopalites texensis</i>	Hexapods	Karst
an ant-like litter beetle	<i>Batrissodes grubbsi</i>	Insects	Karst

Common Name	Scientific Name	Taxa	Habitat
Comal Springs diving beetle	<i>Comaldesmus stygius</i>	Insects	Aquatic/Karst
Edwards Aquifer diving beetle	<i>Haideoporus texanus</i>	Insects	Aquatic/Karst
a cave-obligate beetle	<i>Rhadine austinica</i>	Insects	Karst
a cave-obligate beetle	<i>Rhadine insolita</i>	Insects	Karst
undescribed beetle	<i>Rhadine</i> n. sp. (<i>subterranea</i> group)	Insects	Karst
undescribed beetle	<i>Rhadine</i> n. sp. 2 (<i>subterranea</i> group)	Insects	Karst
Blanco River springs salamander	<i>Eurycea pterophila</i>	Amphibians	Aquatic/Karst
Blanco blind salamander	<i>Eurycea robusta</i>	Amphibians	Aquatic/Karst

- Deleted:** Cagle's map turtle
- Deleted:** *Graptemys caglei*
- Deleted:** Reptiles
- Deleted:** Aquatic

ADDITIONAL SPECIES OF CONCERN

Hill Country wild-mercury	<i>Argythamnia aphanoides</i>	Plants	Terrestrial
Warnock's coral-root	<i>Hexalectris warnockii</i>	Plants	Terrestrial
Canyon mock-orange	<i>Philadelphus ernestii</i>	Plants	Terrestrial
Texas wild-rice**	<i>Zizania texana</i>	Plants	Aquatic
Texas fatmucket	<i>Lampsilis bracteata</i>	Mollusks	Aquatic
Golden orb	<i>Quadrula aurea</i>	Mollusks	Aquatic
Texas pimpleback	<i>Quadrula petrina</i>	Mollusks	Aquatic
Texas austrotinodes caddisfly	<i>Austrotinodes texensis</i>	Insects	Aquatic
Comal Springs riffle beetle**	<i>Heterelmis comalensis</i>	Insects	Aquatic
a mayfly	<i>Procloeon distinctum</i>	Insects	Aquatic
San Marcos saddle-case caddisfly	<i>Protopitila arca</i>	Insects	Aquatic
Comal Springs dryopid beetle**	<i>Stygoparnus comalensis</i>	Insects	Aquatic
Fountain darter**	<i>Etheostoma fonticola</i>	Fishes	Aquatic
San Marcos salamander*	<i>Eurycea nana</i>	Amphibians	Aquatic/Karst
Eurycea sp. (northern Hays County)* or **	<i>Eurycea</i> sp.	Amphibians	Aquatic/Karst
Texas blind salamander**	<i>Eurycea rathbuni</i>	Amphibians	Aquatic/Karst

* Federally threatened species

** Federally endangered species

**Purpose Statement for the Biological Advisory Team (BAT)
of the
Hays County Regional Habitat Conservation Plan**

The federal Endangered Species Act sets forth certain substantive and procedural requirements that must be followed in developing and implementing a regional habitat conservation plan (RHCP). Texas law also contains additional requirements for developing RHCPs. Specifically, state law requires that governmental entities establishing an RHCP (also referred to as “plan participants”) must appoint a Biological Advisory Team (BAT), and sets forth certain responsibilities of the BAT as well as requirements for its composition. Accordingly, the Hays County RHCP BAT is charged with the following responsibilities.

The purpose of the BAT is to provide guidance to Hays County on biological matters in connection with the development of the RHCP. This guidance shall consist of thorough, critical reviews of any aspect of the Hays County HCP directly or indirectly affecting the biological integrity of the plan area. Comments by the BAT on any draft or final documents created by the plan participants or their agents will be collected and prepared in written form. The BAT’s comments will be based on the best available science.

As required by the Texas Parks and Wildlife Code, Chapter 83, the BAT shall specifically assist in:

- (1) the calculation of harm to the endangered species; and
- (2) the sizing and configuring of the habitat preserves.

Concepts and HCP Sections (May 23, 2008 Preliminary Draft RHCP) for Detailed BAT Review and Comment

- Proposed project-specific habitat determinations, take estimates, and mitigation ratios
 - Preliminary Draft RHCP Sections 7.2.2 through 7.2.4
- Proposed design criteria for RHCP preserve system
 - Preliminary Draft RHCP Section 6.3.1
- Proposed criteria for mitigation credit generation
 - Preliminary Draft RHCP Section 6.3.2
- Proposed preserve management and monitoring program
 - Preliminary Draft RHCP Section 6.5