Building Species Banks:
How Shall We Shape the Future?

2 – 4 March 2005
Amsterdam

This workshop has been organised and/or sponsored by

Building Species Banks: How Shall We Shape the Future?

Wednesday, 2 March 2005

0900 - 1000	Installation of demonstrations and posters (these remain in place throughout the workshop)
0930 - 1000	Coffee / tea
1000 – 1200	Welcome Opening remarks – Jim Edwards, GBIF Workshop logistics – ETI, NL-BIF Background information on GBIF – Meredith Lane, GBIF The GBIF information architecture – Donald Hobern, GBIF Summary of today's species banks – Elena Pérez Iniesta
1200 – 1300	Time to browse demonstrations and posters
1300 – 1400	Lunch (on site) and time to browse demonstrations and posters

1400 – 1700	Plenary presentations:
	   Kevin Thiele –
	   Rainer Froese –
	   Marjorie Pyoos –
	   Bob Robbins –
	Logistics for Day 2

1700 – 1900	Reception (on site) and time to browse demos and posters

Thursday, 3 March 2005

0930 - 1000	Coffee / tea

1000 – 1300	Breakout discussions (see questions for each group, next page)
	   Use aspects – chair: Yolan Friedmann
	           rapporteur: Nigel Robinson
	   Content aspects – chair : Scott Miller
	           rapporteur : Michael Browne
	   Technical aspects – chair : Dora Canhos
	           rapporteur: Steve Shattuck

1300 – 1400	Lunch (on site) and time to browse demonstrations and posters
1400 – 1530	Breakout discussions (continued)
1530 – 1600	Coffee / tea
1600 – 1700	Plenary -- reports from rapporteurs
1700 – 1900	Time to browse demos and posters
1900 – 2200	Hosted dinner

Friday, 4 March 2005

0930 - 1000	Coffee / tea
1000 – 1300	Plenary discussion of breakout reports
1300 – 1400	Lunch (on site) and time to browse demonstrations and posters
1400 – 1500	Concluding remarks – chairs of breakout sessions Concluding remarks – Jim Edwards, GBIF
1500 – 1515	Closure
1530 – 1700	Removal of demonstrations and posters

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Questions for Breakout Groups

Technical aspects of species banks

- What standards for data and metadata are going to be needed to be able to do an integrated search for data about species among databases of taxonomy, physiology, ecology, molecular genetics, etc. etc. etc.? How do we deal with unstructured data?

- What software and interoperability protocols already exist that can be adapted to this purpose?

- Which technologies support interoperability and integration of species bank data (e.g. web services)?

- What are current technological bottle necks?

- What are the challenges to face first? Next?

- How can different interfaces for various user groups access the common pool of data?

- What tools are needed to make it easy (and compelling) for providers to contribute data to species banks?

- How, from the technical point of view, could/should species banks look like 5 to 10 years from now?

Content aspects of species banks

- Who do you perceive as the users of species banks?

- What are the needs of users as you (as information providers) perceive them?

- What is/are species bank(s)?

- What type of data should/could minimally be present in species banks?

- How do you envision quality control on species banks data, given that data from different providers is compiled in response to a query?

- What tools are needed to help you to make more information available?

- What mechanisms are needed to maximise access to the data required to build species banks?

- What could/should species banks look like 5 to 10 years from now?

Use aspects of species banks

- Who are all the possible users of species banks?

- What are the uses to which species banks may be put?

- What kind of species data do users need that is currently not available or exists but is inaccessible?

- What are current barriers to obtaining useful information?

- What would you like to see change about the way(s) you get information from the Web?

- What do people who search for species information on the Web want as a result of their queries? How do they want that information presented? How do they want to be able to ask their questions?

- What could/should species banks look like 5 to 10 years from now?

The "White Database" of species banks

Statistical summary

Internet-available databases about species are an area in which only limited progress has been made to date. The purpose of the present summary is to provide an overview of the species banks that do exist. To accomplish this, preliminary compilation of 298 URLs has been made, resulting in what we have called the "white database". The URLs in this compilation all contain some level of taxonomic information, and most lead to multiple other types of information (distribution, physiology, behaviour, ecology, media resources, etc.) about organisms at the species level.

In this study of 298 websites, we found that only 11 are maintained by organisations associated with GBIF, 3 by those that cooperate with GBIF, and 5 that are GBIF participants.

We further categorised the sites in several ways. It was not possible to include all 298 sites in every comparison, which is why each table is based on a different total number.

In Table 1, we have made a distinction (Type of Site) between sites that

- use a database from which are generated different views of the data depending on the query (a "dynamic database") or
- are simply a set of HTML pages, probably edited by hand (a "collection of static pages").

Table 1. Summary statistics regarding 234 of the 298 web resources in the URL compilation.

Type of Site	N	%
Static (HTML) pages	113	48.3
Dynamic database	121	51.7

Furthermore, we found it useful to contrast (Table 2) among sites that

- act as a portal through which information is brought from many resources in answer to the user's query ("web services model"),
- provide links to a set of other resources by redirection to those web sites or by dynamic queries of their data, or
- store all of the data from different sources in a central location (a "warehouse").

Table 2. Summary statistics regarding 229 of the 298 web resources in the URL compilation.

Type of Site	N	%
Data warehouse	187	81.6
Web services model	35	15.3
Redirecting links	7	3.0

Finally, we wanted to distinguish (Table 3) among sites

- created by a project in one institution (standalone database),
- created by a collaborative effort among several institutions/individuals (collaborative project), or
- existing as an interaction among different databases at different websites via a common web distributor (distributed system).

Table 3. Summary statistics regarding 230 of the 298 web resources in the URL compilation.

Type of Site	N	%
Standalone database	164	71.3
Collaborative project	44	19.2
Distributed system	22	9.6

Among the 243 web resources included in the following analysis, 173 (71.2 %) provide information beyond the solely taxonomic. Most of these provide descriptive and/or identification, ecological, or distribution information. In Table 4, we show the percentage of sites that provide different types of additional information.

Table 4. Summary statistics regarding the 243 species data resources that include more than taxonomic information.

Type of Information	N	%
Molecular data	18	7.4
Identification key(s)	14	5.8
Images	127	52.3
Photo gallery	17/127	13.4
Image search	3/127	2.4
Sound files	7	5.5
Video files	4	3.2
Distribution data	116	47.7

We also compared the sites that have additional information with the general species bank database to see if the two groups demonstrate the same level of detail regarding scientific names. The results are presented in Table 5.

Table 5. Comparison of percentages of sites providing information in addition to basic taxonomy between the total number included in the general "white database of species banks" and the 243 that do provide some sort of additional information (see Table 4).

	Author	Publication date	Nomenclatural reference	Type citation
Additional	51.4	38.7	19	11.0
General	40.3	30.9	16	8.2

Experience with web searching has taught us that not all sites are maintained and updated with the same regularity. We analysed the general database of sites with regard to activity, and found that 120 of the 298 URLs are reasonably active, about 40.3 %. Among the 298 websites, 140 (about 47 %) have an explicit indicator of the most recent update. Recency of update is shown in Table 6.

Table 6. Percentage of sites in several time categories mong the 140 sites that have an explicit indication of recency of the last update.

Most recent update	N	%
Last month	24	17.2
Last six months	22	15.7
Last year	43	30.7
Last two years	18	12.8
Last three years	14	10.0
Last four years	3	2.2
Last five to ten years	16	11.4

Finally, we found that t here is a correlation not only between the type of organisation that maintains a species bank and the class of intended users of that species bank, but also between the class of intended users and the longevity of the site.

National parks, zoos, museums and citizen-groups mount websites intended for the general public. Sites aimed at amateur enthusiast audiences generally are maintained by NGOs, museums and zoos. And, universities, research centres and government institutions tend to design and maintain sites aimed at scientists and higher-level students.

Though it must be remembered that the World Wide Web has existed for barely ten years, to date the longest-surviving sites are those maintained by scholarly institutions and intended for use by scholars and students. Not surprisingly, the least active sites are those established by individuals acting on their own, with little or no institutional backing.

Mere longevity, however, should not be taken as a measure of maintenance activity, though correlations between these two parameters are very difficult to make because most sites do not incorporate a feature that indicates when the last update was made.

Respectfully submitted,

Elena Perez Iniesta and *Meredith A. Lane*

"White Database"

100 of the World's Worst Invasive Alien Species (GISD)	www.issg.org/database/species/
10000 bird list	www.10000birds.com/birdlist.htm
A GUIDE TO ONLINE INSECT SYSTEMATIC RESOURCES	www.lib.ncsu.edu/agnic/sys_entomology/
ABRS Fauna Online-Platypus	www.deh.gov.au/biodiversity/abrs/online-resources/software/platypus/index.html
African Wildlife Foundation	www.awf.org/wildlives/
Alberta´s Endangered Species	raysweb.net/specialplaces/pages/species.html
Algaebase listing the world's algae	www.algaebase.org/
Alien Invader Plants in South Africa	www.geocities.com/wessaaliens/index.htm
Alien Species in Poland	www.iop.krakow.pl/ias/
All Living Things-Discoverlife	www.discoverlife.org/nh/
AMD- African Mammals databank	www.gisbau.uniroma1.it/amd/
America zoo	www.americazoo.com/goto/index/m.htm
Amphibia Web	elib.cs.berkeley.edu/aw/index.html
Amphibian Assessment	www.globalamphibians.org/
Amphibian Content-Idaho	imnh.isu.edu/digitalatlas/bio/amph/main/amphmain.htm
Amphibian Home Page of the Intermountain Region of the U.S. Forest Service	www.fs.fed.us/r4/amphibians/introduction.htm
Amphibian Species of the World	research.amnh.org/herpetology/amphibia/index.php
Animal Diversity Web	animaldiversity.ummz.umich.edu/site/topics/frogCalls.html
Animal Info - Information on Endangered Mammals	www.animalinfo.org/
Animal sof the rainforest	www.animalsoftherainforest.org/
AnoBase	www.anobase.org/
Antarctic Animals -70 South	www.70south.com/resources/animals
Antelope Teg web site	www.csew.com/antelopetag/
Aphyllophorales database	www.cbs.knaw.nl/databases/cbs_home/cbs_home.
Applesnail.net	www.applesnail.net/
Apus	www.apus.ru/site.xp/054049048124049054052055.html

Aquatic Plant Information System Online (APIS) (USArmyCorp)	www.wes.army.mil/el/aqua/apis/apishelp.htm
ASGAP-Association of Societies for Growing Australian Plants	farrer.riv.csu.edu.au/ASGAP/index.html.
Australian Museum Fact sheets	www.amonline.net.au/factsheets/
Australian Plant Name Index (APNI)	www.anbg.gov.au/cgi-bin/apni
Avibase. The world bird database	www.bsc-eoc.org/avibase/avibase.jsp
Aye-ayes Area	alum.hampshire.edu/%7EjwgF92/AyeAye.html
Baltic Sea Alien Species Database	www.ku.lt/nemo/mainnemo.html
Base de datos Forestal (FUNDECOR)	www.fundecor.org/bd_maderas/
Bat Conservation International. U.S. Bats	www.batcon.org/discover/species/naturalhistory.html
Bats of Bonaire	www.bonairenature.com/bats/index.html
Bats of SanDiego County	home.earthlink.net/~cmsquare/index.html
BBC online Nature Wild Animals Wild Facts	www.bbc.co.uk/nature/wildfacts/
Biodiversity Gateway to Information in South East Asia	www.arcbc.org/
BIOGEOGRAPHY-San Francisco State University	bss.sfsu.edu:224/courses/316/2003%20material/final_projects_index.htm
Bioko	www.bioko.org/
Biological Diversity of the Guianas	www.mnh.si.edu/biodiversity/bdg/
BIOS-Bacteriology Insight Orienting System	www-sp2000ao.nies.go.jp/english/bios/
Bird Conservation Node-LINKS	birdcon.nbii.gov/species_information/index.html
Bird Families of the World	montereybay.com/creagrus/list.html
Birdlife International-Search for Species	www.birdlife.net/datazone/search/species_search.html
Birds of Falklands	www.falklands.net/PictureGalleryBirdGuides.shtml
Birds of Indonesia	users.bart.nl/~edcolijn/birds.html
Birds of Nova Scotia	museum.gov.ns.ca/mnh/nature/nsbirds/bons.htm
Birds of Southern Africa	pup.princeton.edu/birds/guides/safrica/index.html
BISON Biota Information System Of New Mexico	nmnhp.unm.edu/bisonm/bisonquery.php
Breeding birds in the wider countryside/ Breeding Bird Survey	www.bto.org/birdtrends/species.htm
Budapest Zoo	www.zoobudapest.com/roaming/html/29.htm
Butterflies & Moths of the World	www.nhm.ac.uk/entomology/butmoth/index.html

Canadian Biodiversity Information Facility	www.cbif.gc.ca/spp_pages/index_e.php
CARAPHIN Animal Pest Database (Caribbean)	infoagro.net/health/caraphin/animalhealth.cfm
CARAPHIN Plant Pest Database (Caribbean)	infoagro.net/health/caraphin/plantpest.cfm
Caspian Sea Biodiversity Database	www.caspianenvironment.org/biodb/eng/main.htm
Catalogue of Mosses of Australia and its External Territories	www.anbg.gov.au/cpbr/databases/moss-catalogue.html
Cattle TAG Web Site	www.csew.com/cattletag/
CBS Filamentous fungi database	www.cbs.knaw.nl/cbs_home/cbs_home.html
CBS Yeasts database	www.cbs.knaw.nl/yeast/(r5qlie55leeyicahdurqid2m)/BioloMICS.aspx
Centro Nacional de Primatas	www.cenp.org.br/guia.asp?id=5
Centro Nacional de Primatas	www.cenp.org.br/ficha.asp?idespecie=11&id=5
CephBase - Cephalopod	www.cephbase.utmb.edu/
Cetacea.Whales, dolphins and porpoises	cetacea.org/
Chaffee Zoo	www.chaffeezoo.org/animals/index.html
Checklist of Amphibian Species and identification guide	pick4.pick.uga.edu/mp/20q?go=www.npwrc.usgs.gov/narcam/idguide/index.htm#bufonida
Chesapeake Bay Introduced Species Database	invasions.si.edu/nemesis/chesdb/index.html
China Invasive Species Network database	www.bioinvasion.org.cn:9090/xu716/index.jsp
China Species Information Service (CSIS)-Conserving China's Biodiversity Web site	www.chinabiodiversity.com/search/english/searchwwf.shtm
CIESM Atlas of Exotic Species in the Mediterranean Sea	www.ciesm.org/atlas/
CITES guide-Conabio's national biodiversity information system	www.conabio.gob.mx/conocimiento/info_especies/cites/doctos/acerca_cites.html
Coastal Studies Center	academic.bowdoin.edu/csc/virtual/index.shtml
Columbus Zoo	www.colszoo.org/animalareas/aforest/colobus.html
COMTESA (Computer Taxonomy and Ecology of Soil Animals)	www.ent.orst.edu/comtesa/
Cooloola coast Tin Can Bay Bird Walk/ Cooloola CoastCare	www.cooloolacoastcare.org.au/cooloolabirds/TinCanBay/site2/Great%20Knot.htm
Cracid TAG Web Site	www.csew.com/cracid/default.asp
Crocodilian Biology database	www.flmnh.ufl.edu/natsci/herpetology/brittoncrocs/cbd.html
Crop Profiles Database (USDA)	pestdata.ncsu.edu/cropprofiles/pmcropprofiles.cfm?usdaregion=National%20Site
crustacea.net - interactive keys	crustacea.net/
Damisela. El Zoológico Electrónico	www.damisela.com/zoo/

Danish Forest and Nature Agency (Denmark)	www.sns.dk/natur/nnis/intro.htm
Data from Asia-Dragonfly Database	www.asia-dragonfly.net/odonataHelp.php?Level=60&ORR=19132416
Database on Introductions of Aquatic Species (DIAS)	www.fao.org/figis/servlet/static?dom=root&xml=Introsp/introsp_s.xml
Desert Fishes Council	www.desertfishes.org/topindex.html
Digital Atlas of Idaho: Amphibians	imnh.isu.edu/digitalatlas/bio/amph/main/amphmnfr.htm
Dinodata	www.dinodata.net/Dd/Namelist/CLAS.htm
Dinosauria On-Line	dinosauria.com/
Dublin Zoo	www.dublinzoo.ie/come.htm
Ducks of the World	www.utm.edu/departments/ed/cece/ducks.shtml
Ecological Dastabase of the World´s Insect Pathogens (EDWIP)	cricket.inhs.uiuc.edu/edwipweb/edwipabout.htm
eFloras.org	www.efloras.org/
Elateriformia (Coleoptera)	biodiversity.uno.edu/delta/elateria/index.htm
Electronic Flora of South Australia	www.flora.sa.gov.au/
Endangered and Protected Species Database of Chinese Animals	www.zd.brim.ac.cn/division/endan1e.html
Environmental Catalog (Sweden)	www.svenskamiljonatet.se/
ESIS-Endangered Species Information System	fwie.fw.vt.edu/WWW/esis/index.htm
ETI - World Biodiversity Database	www.eti.uva.nl/Database/WBD.html
EUNIS- Europen Nature Information System	eunis.eea.eu.int/index.jsp
Euro Turtle- Sea Turtle Outlines	tofino.ex.ac.uk/euroturtle/outline/outline.htm
Eurobirding	www.eurobirding.co.uk/
Europe's Most Threatened Birds	europa.eu.int/comm/environment/nature/directive/index_en.htm
Exotic Plants Information System of China	weed.njau.edu.cn/exowort/exoweeds.htm
Family Tanyderidae (Diptera: Ptychopteromorpha)	mgd.nacse.org/DJFlies/
FAO Species Identification and Data Programme (SIDP)- Species Identification sheets	www.fao.org/figis/servlet/static?dom=root&xml=species/species_s.xml&xp_banner
Fauna Species Profiles	www.naturebase.net/plants_animals/fauna_profiles_splash.html
Featured creatures	creatures.ifas.ufl.edu/
Felid TAG Web Site	www.felidtag.org/
Festuca of North America	biodiversity.uno.edu/delta/festuca/index.htm

Find Dinosaur Pictures Dinosaurs Illustrations	www.search4dinosaurs.com/
Fire Effects Information System	Fire Effects Information System
Fish files	www.nativefish.asn.au/fish.html
Fish, Wildlife and Marine Resources/ New York State	www.dec.state.ny.us/website/dfwmr/fwsitemap.html#F
FishBase	www.fishbase.org/search.cfm
FishNet	speciesanalyst.net/fishnet/default.html
Flora Europaea	rbg-web2.rbge.org.uk/FE/fe.html
Flora of North America (FNA)	www.fna.org/FNA/
Flora web	www.floraweb.de/
FloraBase- the western Australian Flora	www.calm.wa.gov.au/florabase/index.html
Freshwater Algae	plantnet.rbgsyd.gov.au/PlantNet/fwalgae/index.htm
Frogwatch USA	www.nwf.org/frogwatchUSA/
Global Compendium of Weeds (GCW)	www.hear.org/gcw/alpha_select_gcw.htm
Global Invasive Species Database (GISD)	www.issg.org/database/
GROMS. Global Register of Migratory Species	www.groms.de/
Growing Native Plants	www.anbg.gov.au/gnp/index.html
Guide des oiseaux de Säo Timé et Principe	www.ecofac.org/GuideOiseauxSTP/Index.htm
Guide to the Reptiles and Amphibians of Colorado	coloherp.org/geo/index.php
Hawai'i Coral Reef Network	www.coralreefnetwork.com/default.htm
HerpNet	herpnet.org/
Herps of Texas	www.lifesci.utexas.edu/research/txherps/
Hexacorallians of the World	hercules.kgs.ku.edu/hexacoral/anemone2/index.cfm
Hogle Zoo	hoglezoo.org/animals/
Honolulu zoo/Animal Info	www.honoluluzoo.org/site_map2.htm
HOSTS - a database of the hostplants of the world's Lepidoptera	www.nhm.ac.uk/entomology/hostplants/
Hummingbird Species	www.hummingbirds.net/species.html
ICE Biological Inventory Databases	www.ice.ucdavis.edu/mab/
ILDIS-International Legume Database & Information Service	www.ildis.org/

INBIO	www.inbio.ac.cr/es/default.html
Info Natura	www.natureserve.org/infonatura/
Information System of DEtermination and Characterisation of EctoMYcorrhizae	www.deemy.de/
International Organization For Plant Information	www.bgbm.fu -berlin.de/iopi/gpc/query.asp
Introduced Marine Species of Hawaii Guidebook	www2.bishopmuseum.org/HBS/invertguide/index.htm
Introduced Plants and Animals (in Russia)	www.biodat.ru/db/intro/plant_e.htm
Invasive Exotic Species in the Iberian Peninsula	hidra.udg.es/invasiber/
Invasive Plants Checklist (Ethiopia)	members.lycos.co.uk/ethiopianplants/invasives/prosopis.html
Invasive Species Databases.Invasive Species Information Node-LINKS	www.invasivespecies.gov/databases/main.shtml
Invasive Species-CONABIO	www.conabio.gob.mx/conocimiento/info_especies/especies_invasoras/
Israel birds	my.ort.org.il/
Kentucky Bat Working Group.EKU	www.biology.eku.edu/bats.htm
Kenya Birds	www.kenyabirds.org.uk/
Leccinum and Phylloporus in Costa Rica	www.nybg.org/bsci/res/hall/deltaindex.html
Lexicon of Parrots	www.arndt-verlag.com/
LIAS – A Global Information System for Lichenized and Non-Lichenized Ascomycetes	www.lias.net/
Lichen Synoptic Key	mgd.nacse.org/cgi-bin/hyperSQL_gateway
Lincoln Park Zoo	www.lpzoo.com/tour/tour.html
LINK- Botanical Databases of Australian Plants	www.anbg.gov.au/cpbr/databases/index.html
LINKS-	www.csew.com/
LINKS- ABSR Flora online	www.deh.gov.au/biodiversity/abrs/online-resources/flora/index.html
LINKS- ARS Insect Locations	www.ars-grin.gov/nigrp/ars_insects.html
LINKS- Biodiversity links database. ASEAN	www.arcbc.org/arcbcweb/biodiversitylinks/
LINKS- Canadian Wildlife Service	www.cws-scf.ec.gc.ca/theme.cfm?lang=e&category=3
LINKS- CBS Databases	www.cbs.knaw.nl/databases/index.htm
LINKS- Databases - flora and vegetation for land management	www.anbg.gov.au/databases/database-table.html
LINKS- Diversity Campus	160.45.63.11/
LINKS- Electronic Resources on Lepidoptera	www.chebucto.ns.ca/Environment/NHR/lepidoptera.html

LINKS- FaunaNet	www.faunanet.gov.au/
LINKS- Floridan Museum of Natural History/Databases	www.flmnh.ufl.edu/databases/
LINKS- GRID Database	www.grid.unep.ch/data/
LINKS- Herpetology/ Floridan Museum of Natural History	www.flmnh.ufl.edu/herpetology/
LINKS- Ichthyology/ Floridan Museum of Natural History	www.flmnh.ufl.edu/fish/Collection/collectdata.htm
LINKS- Invertebrate Paleontology/ Floridan Museum of Natural History	www.flmnh.ufl.edu/databases/ivp/default.htm
LINKS- Iowa State Entomology Index of Internet Resources	www.ent.iastate.edu/list/directory/120/vid/4
LINKS- Lepidoptera sites of interest	www.leps.it/Links.htm
LINKS- Malacology/ Floridan Museum of Natural History	www.flmnh.ufl.edu/databases/mala/intro.htm
LINKS- Mammals/ Floridan Museum of Natural History	www.flmnh.ufl.edu/databases/mammals/intro.htm
LINKS- Mycology	www.mycology.net/
LINKS- Phycology	www.phycology.net/
LINKS- PlantNet	plantnet.rbgsyd.gov.au/other2.htm
LINKS- Primates	pin.primate.wisc.edu/aboutp/factsheets/
LINKS- REMID-THE WORLD INFORMATION NETWORK ON BIODIVERSITY	www.conabio.gob.mx/remib_ingles/doctos/remib_ing.html
LINKS- Vertebrate Paleontology/ Floridan Museum of Natural History	www.flmnh.ufl.edu/databases/vp/intro.htm
LINKS- WILDPro- Contest	212.187.155.84/pass_06june/List_WPMod_Cont/WILDPro_Gen_Cont.htm
LINKS-Chinesee Biodiversity Information Center-DATA SERVICES	www.zd.brim.ac.cn/division/informe.html
LINKS-Crocodile, Alligator & Caiman Internet Resources	www.flmnh.ufl.edu/natsci/herpetology/brittoncrocs/cir.html
LINKS-FrogWeb: Amphibian Declines & Malformations	frogweb.nbii.gov/
LINKS-List of Invasive Alien Species (IAS) Online Databases	invasivespecies.nbii.gov/as/DraftIASDBs.htm
LINKS-List of Invasive Alien Species (IAS) Online Databases	invasivespecies.nbii.gov/as/GISINProc2004HTML/GISINProc20046.html
LINK-Species 2000	www.sp2000.org/dynamicchecklist.html
LINKS-World Species List - Animals Plants Microbes	species.enviroweb.org/
LINK-W3TROPICOS	www.mobot.org/MOBOT/Research/alldb.shtml
List of Invasive Species of Pakistan	edu.iucnp.org/alist.htm
List of strains (Microbial Culture Collection)-NIES	www.nies.go.jp/biology/mcc/strainlist.htm
LIST OF WATERFOWL SPECIES	212.187.155.84/pass_06june/List_WPMod_Cont/Waterfowl_Mod/List_Waterfowl%20_Species.htm

Lowry Park Zoo	www.lowryparkzoo.com/VirtualSafari2002/PrimateWorld/AngolanColobus
Lumonet - Finnish CHM of the CBD (Finland)/LINKS	www.ymparisto.fi/default.asp
Macrozoobenthos communities of Svalbard	www.awi-bremerhaven.de/Benthic/Macrozoo/index.php?p=species&pic=11
Mammal Species of the World (MSW)	nmnhgoph.si.edu/msw/
Mammals of Ranomafana	info.bio.sunysb.edu/rano.biodiv/Mammals/
Marine Alien Species of Estonia	www.sea.ee/Sektorid/merebioloogia/eesti/Marine_Alien_Species_of_Estonia.htm
Marine sponges of British Columbia	www.interchg.ubc.ca/csmecher/sponge.htm
Monkey Project	www.mpi-seewiesen.mpg.de/%7Eknauer/noe/taan.html
Moscow Zoo	www.zoo.ru/Moscow/monk_e4.htm
Moths and Butterflies of Europe and North Africa	www.leps.it/
Museum bourges	www.museum-bourges.net/html/index_conseils.htm
NAS-Nonindigenous Aquatic Species	nas.er.usgs.gov/
National PLANTS Database	plants.usda.gov/
Native plants & animals -NSW	www.nationalparks.nsw.gov.au/npws.nsf/Content/Native+plants+and+animals
Native Species for reforestation-CONABIO	www.conabio.gob.mx/conocimiento/info_especies/arboles/doctos/introd-J084.html
NatureBase-Getting to know WA's plants and animals	www.naturebase.net/plants_animals/five_by_five.html
Naturegrid- Canterbury Environmental Education Center	www.naturegrid.org.uk/biodiversity/galindex.html
NatureServe Explorer-Plant Data and Animal Data	www.natureserve.org/getData/plantData.jsp
Naturia-Mangrove and wetland wildlife	www.naturia.per.sg/buloh/index.htm
New World Primates TAG	www.csew.com/newworldprimate
NIMPIS (National Introduced Marine Pest Information System [Australia])	www.marine.csiro.au/crimp/nimpis/
NISbase	www.nisbase.org/nisbase/index.jsp
Non-Native Aquatic Species in the Gulf of Mexico Region	nis.gsmfc.org/
OBIS. Ocean Biogeographic Information System	iobis.org/
Ocean Oasis Field Guide	www.oceanoasis.org/fieldguide/index.html
Olympic coast	olympiccoast.noaa.gov/living/welcome.html
Oregon Zoo	www.oregonzoo.org/Cards/cardindex.htm
ORNIS database/ Royal Belgian Institute of Natural Science.	www.kbinirsnb.be/cb/ornis/index.htm

Orthoptera Species File	140.247.119.145/Orthoptera/
OTTERNET	www.otternet.com/species/
Pathogenic Fungi Database (PFDB)	www.pfdb.net/myphp/database_eng.php
Patuxent Bird Identification InfoCenter-Patuxent Wildlife Research Center.	www.mbr-pwrc.usgs.gov/Infocenter/infocenter.html
Pest Fruit Flies of the World	www.sel.barc.usda.gov/Diptera/tephriti/pests/adults/
Pez Web (A Web site dedicated to the study of the Pezizales)	mgd.nacse.org/hyperSQL/pezweb/mainx.html
Phytoplancton de Méditerranée	www.com.univ-mrs.fr/PHYTOCOM/accueil.html
Plant Net	plantnet.rbgsyd.gov.au/index.html
Plant Resources of South-East Asia (PROSEA)	www.prosea.nl/index.htm
Plant Viruses online	image.fs.uidaho.edu/vide/refs.htm
Plants For A Future	www.ibiblio.org/pfaf/
Pooideae (Poaceae) in Australia	biodiversity.uno.edu/delta/pooid/www/index.htm
Predator-Prey Database for the family Asilidae (Hexapoda: Diptera)	www.geller-grimm.de/catalog/lavigne.htm
Primatis	www.primatis.de/primaten/
PROTA. Plant Resources of Tropical Africa	www.prota.org/index.htm
Proyecto Anthos. Saistema de información sobre Plantas de España	www.programanthos.org/inicio.asp
Rainforest-Australia	rainforest-australia.com/
Red Data Book for Asian birds	www.rdb.or.id/
Riverbanks Zoo	www.riverbanks.org/s02zoo/
SA Alien Invasive Plants Database (South Africa)	fred.csir.co.za/plants/global/continen/africa/safrica/sppdb/index.html
Saude Animal	www.saudeanimal.com.br/gelada.htm
ScaleNet	198.77.169.79/scalenet/scalenet.htm
Sea Slug Forum	www.seaslugforum.net/
Seabirds and shorebirds	web.uct.ac.za/depts/stats/adu/seabirds.htm
Seagrasses	www.botany.hawaii.edu/seagrass/
Seagrasses of the Black Sea	www.ibss.iuf.net/blacksea/species/flora/seagrass/seagrass.html
SeaWorld/Busch Gardens Animal Information Database	www.seaworld.org/animal-info/info-books/endangered/species-profiles.htm
Sedgwick Zoo	www.scz.org/animals.html

SEO Birdlife	www.seo.org/
Shark Database	www.shark.ch/Sharkdb/sharkdb.shtml
Singapore Zoological Gardens	www.szgdocent.org/animals.htm
Smithsonian National Zoological Park	nationalzoo.si.edu/Animals/AnimalIndex/
SOFTWARE- FLORIN Information System	www.florin.ru/
SOFTWARE- International Species Information System	www.isis.org/
Species at Risk	www.speciesatrisk.gc.ca/default_e.cfm
Species Bank home	www.deh.gov.au/biodiversity/abrs/online-resources/species-bank/
Species files-Conabio's national biodiversity information system	www.conabio.gob.mx/conocimiento/ise/fichas/doctos/introduccion.html
Species Inventory Database of Chinese Animals	www.zd.brim.ac.cn/division/species1e.html
Species of the Lemurs of Madagascar	www.tsidy.com/lemurs/index.asp
Species Profile and Threats Database	www.deh.gov.au/cgi-bin/sprat/public/sprat.pl
Status reports on Alberta's wild species	www3.gov.ab.ca/srd/fw/status/
Synopsis of the mammalian Fauna of the Philippine Islands	www.fieldmuseum.org/philippine_mammals/
Tabou.be	www.tabou.be/totem407.php
Terrestial Mammals of North America-CONABIO	conabioweb.conabio.gob.mx/website/mamiferos/viewer.htm
The Cranes	www.npwrc.usgs.gov/resource/distr/birds/cranes/cranes.htm#contents
The CyberZoo Animal List	lsb.syr.edu/projects/cyberzoo/a_list.html
The Cycad Pages	plantnet.rbgsyd.gov.au/PlantNet/cycad/index.html
The Echinosteliales (Myxomycetes)	www.rjb.csic.es/Bioinformatics/Echinos/E_charlist.html
The Euro+Med PlantBase	www.euromed.org.uk/
The Euro+Med PlantBase/ Conservation Data	www.s2you.com/euromed/
The Mammals in Indonesia	users.bart.nl/~edcolijn/mammals.html
The ultimate ungulate	www.ultimateungulate.com/
The Wild Ones	www.thewildones.org/animal.html
Therevidae	www.inhs.uiuc.edu/cee/therevid/
TNHC - Texas Freshwater Fishes Index	www.tmm.utexas.edu/tnhc/fish/na/txindex.html
Trees of Eastern North American Forests	www.il-st-acad-sci.org/trees/tree.html

True Geese of the World	www.utm.edu/departments/ed/cece/trugeese2.shtml
UK Biodiversity Plan	www.ukbap.org.uk/
UK Wildlife: First Aid and Legislation.	212.187.155.84/pass_06june/List_WPMod_Cont/UKWildlifeFirstAid/UKWildlifeFirstAid.htm
UNEP-WCMC Base de datos des Especies	sea.unep-wcmc.org/isdb/Taxonomy
Universal Chalcidoidea Database	www.nhm.ac.uk/entomology/chalcidoids/index.html
Universal Virus Database,ICTVdB Virus Descriptions	www.ncbi.nlm.nih.gov/ICTVdb/ICTVdB/descindex.htm
Virtual Exhibit On Canadas Biodiversity	collections.ic.gc.ca/biodiversity/database.html
Viruses of Plants in Australia	www.ncbi.nlm.nih.gov/ICTVdb/Aussi/aussi.htm
VN Illustrated Database Of Mexican Biodiversity	www.vivanatura.org/
Vultures	www.vultures.homestead.com/
Western Palearctic Water Frogs	waterfrogs.csit.fsu.edu/
Who Zoo	whozoo.org/anlife2000/irma/frames.html
WIEM	portalwiedzy.onet.pl/16461,haslo.html
Wildlife Conservation Society	wcs.org/7690
Wildlife of Tasmania	www.dpiwe.tas.gov.au/inter.nsf/ThemeNodes/LBUN-5362MH?open
Wildlife of the rocky Mountains	raysweb.net/wildlife/pages/thumbnailindex.html
WISIA	www.s2you.com/wisia/
Woodland Park Zoo	www.zoo.org/educate/animalfacts1.htm
Zoo Wroclaw	www.zoo.wroclaw.pl/zwierzeta/ssaki/lemur_wari.html

Participant Query Forms

Name, Institution and Country:	**JACOB K ASIEDU**
	Uni. Massachusetts/Boston, USA
A short paragraph about yourself. Please include a brief statement of your area of expertise and why you are interested in speciesbanks on the Web.	Research Programmer for the UMB Electronic Field Guide (EFG) project.
Name of your project:	UMB Electronic Field Guide (EFG) Project
Project URL:	www.cs.umb.edu/efg
Description of the project (please include information on the following): - Is the speciesbank a dynamic database or a collection of static pages? - Is the speciesbank a collaborative effort among databasers at different sites (that is, a network; does it use a web services model?) or is it a "warehouse" type of effort? - How is the speciesbank supported monetarily (as reported on the site itself)? - What are its expectations for longevity of the speciesbank on the Web (as reported on the site iteself)? - Types of data / information included? Images, research data, etc. - Does the database link directly into digital library materials automatically or just provide the links? - Who are the intended users?	References Robert A Morris' Description of Project.

Name, Institution and Country:	**JAMES H. BEACH**
	University of Kansas, USA
A short paragraph about yourself. Please include a brief statement of your area of expertise and why you are interested in speciesbanks on the Web.	I am interested in the conceptual, technical and usability relationships among species names, species concepts and genetic bar codes for the purposes of species labeling, identification and legal/policy use.
Name of your project:	SEEK: Science Environment for Ecological Knowledge
Project URL:	seek.ecoinformatics.org
Description of the project (please include information on the following): • Is the speciesbank a dynamic database or a collection of static pages? • Is the speciesbank a collaborative effort among databasers at different sites (that is, a network; does it use a web services model?) or is it a "warehouse" type of effort? • How is the speciesbank supported monetarily (as reported on the site itself)? • What are its expectations for longevity of the speciesbank on the Web (as reported on the site iteself)? • Types of data / information included? Images, research data, etc. • Does the database link directly into digital library materials automatically or just provide the links? • Who are the intended users?	We have a database with an emerging set of taxonomic concept web services for information retrieval and disambiguation of names and concepts. There currently are few sources of robust taxonomic concept level data, although we are working with 'weak' taxonomic concepts from various public sources, for testing and analysis purposes. We are grant supported. Expectations for longevity are high. Data included are those defined by the TDWG taxonomic concept transfer schema. Currently, limited to text data. We use LSIDs currently to uniquely identify concepts, but are looking at other GUID options. Research scientists, notably ecologists and systematists are the target users, but usability studies are still underway to assess the interest level of those audiences.

Name, Institution and Country:	**KOBIE BRAND**
	Global Invasive Species Programme, South Africa
A short paragraph about yourself. Please include a brief statement of your area of expertise and why you are interested in speciesbanks on the Web.	I am the Communication Coordinator of the GISP Secretariat. Part of my work involves the development and management of the GISP website with the aim of making IAS related information easily accessible to all stakeholders. Areas of expertise include communication, PR, education and training, environme ntal management and sustainable development.
Name of your project:	Global Invasive Species Programme (GISP)
Project URL:	www.gisp.org
Description of the project (please include information on the following): - Is the speciesbank a dynamic database or a collection of static pages? - Is the speciesbank a collaborative effort among databasers at different sites (that is, a network; does it use a web services model?) or is it a "warehouse" type of effort? - How is the speciesbank supported monetarily (as reported on the site itself)? - What are its expectations for longevity of the speciesbank on the Web (as reported on the site iteself)? - Types of data / information included? Images, research data, etc. - Does the database link directly into digital library materials automatically or just provide the links? - Who are the intended users?	The development of the GISP website started in November 2003 with the aim to become an effective global Clearing House for IAS related data. This project is directly linked to the role of GISP as the international thematic focal point on IAS under the Clearing House Mechanism (CHM) of the Convention on Biological Diversity (CBD). The database in the GISP website is dynamic, but does not focus on species information as such. This decision was made from the outset as there are already numerous excellent species databases available. Instead the GISP database contains information on (and links to): - species and other relevant databases and websites - IAS expertise worldwide - National, regional and international IAS projects - Technical and scientific references and publications - Conferences and events - News and popular articles - Case studies and fact sheets - Downloadable GISP and other publications (multilingual) The Global Interactive Map (GIM) on the GISP website is another tool where data providers can upload and download national, regional and international data. Another important role of the GISP website is to provide an easily accessible and convenient portal for species databases, for instance for the GISIN. At this stage the GISP database is a "warehouse", but may evolve into a network, should it be required. At present the website is funded as part of a World Bank grant, and various financial sustainability options are being explored as the intention is to maintain and expand the project towards becoming a global IAS portal of choice. Intended users include a vast range of international user groups, including national government officials and managers, IAS experts and scientists, academic and research institutions, data providers, national and international decision makers, trainers and educators, socio-economists, international trade and development role players, policy makers and funders.

Name, Institution and Country:	**SHEILA BRANDS**
	Universal Taxonomic Services, The Netherlands
A short paragraph about yourself. Please include a brief statement of your area of expertise and why you are interested in speciesbanks on the Web.	I have always been fascinated by the diversity and complexity of life. I studied biology at Leiden University where I graduated in bio-informatics in 1993. At the same time (in 1989) I started my personal project *Systema Naturae 2000* (see below). However, I have worked as a regular software developer most of the time, away from biology, professionally that is. In 2001 I started to work for AquaSense who developed their own speciesbank, *Encyclopaedia Taxonomica*. During my employment there I was also member of a national workgroup on coding aquatic organisms in The Netherlands. In 2004 I started my own company *Universal Taxonomic Services* and its main project *The Taxonomicon* (see below). My expertise lies in software engineering and in assembling the tree of life. My interest in speciesbanks on the web is directly related to *Systema Naturae 2000*, i.e. I use them to find missing information, for verification and to connect to.
Name of your project:	The Taxonomicon & Systema Naturae 2000
Project URL: **Description of the project** (please include information on the following): • Is the speciesbank a dynamic database or a collection of static pages? • Is the speciesbank a collaborative effort among databasers at different sites (that is, a network; does it use a web services model?) or is it a "warehouse" type of effort? • How is the speciesbank supported monetarily (as reported on the site itself)? • What are its expectations for longevity of the speciesbank on the Web (as reported on the site iteself)? • Types of data / information included? Images, research data, etc. • Does the database link directly into digital library materials automatically or just provide the links ? • Who are the intended users?	www.taxonomicon.net/ sn2000.taxonomy.nl/ *The Taxonomicon* combines biodiversity information from various sources. *Systema Naturae 2000* is the most recent compilation of all these sources and serves as the main "source" that rules them all. *The Taxonomicon* is a combination of a taxon inventory, the tree of life, the web of life and a knowledge base. - The taxon inventory enumerates all known taxa anywhere, anytime including synonyms, homonyms (incl. allowed ones), common names and their authorship. - The tree of life shows multiple classifications and cladifications, including the total number of described taxa and the completeness relative to the source. One click is enough to switch from one classification to another. - The web of life shows the many types of inter-relationships between species and allows for constructions such as "*species A* is an endoparasite in the gut of a male adult *species B*, causing *disease X*", with focus on both species, crossing kingdom boundaries time after time. - The knowledge base allows a wide array of metadata of a taxon, like geographical distribution, geologic range, size, pH range etc.. The advanced search then allows (complex) queries to find results that can be used as checklists. Topic pages give an overview of all taxa for a single property. - References everywhere: every piece of information gets a precise reference for easy verification, and every taxon is accompanied by a list of references to the literature and to websites for further details. Reference and author detail pages are cross-linked and show any taxonomic changes proposed and/or the original classification used within the reference. The website of *The Taxonomicon* consists of dynamic pages based on Microsoft .NET, retrieving data from a Microsoft SQL Server 2000 database. Presently *The Taxonomicon* is authored only by myself, with data provided by several contributors. Currently an application is under construction that in due time could allow multiple authors to work together on their own projects within *The Taxonomicon*. Future webservices may retrieve data from *The Taxonomicon* for use in other environments. *The Taxonomicon* tries to be of service to the scientific community, such as universities, museums and research institutes as well as the interested public audience. The website has been available on-line since 2000 and is planned to be available for a very long time. *The Taxonomicon* is a private endeavor driven by idealism and dedication, but without any funding. Therefore I seek sponsors who share my view of the concept and who are willing to help me with my cause.

Name, Institution and Country:	**DORA ANN LANGE CANHOS**
	CRIA (Reference Center on Environmental Information), Brazil
A short paragraph about yourself. Please include a brief statement of your area of expertise and why you are interested in speciesbanks on the Web.	I am the Project Director of CRIA and have been working with databases and online information systems since 1985. I work with project management. CRIA is currently involved in the development of the speciesLink network a distributed information system for retrieval of biological data, integrating heterogeneous databases distributed in 39 biological collections within the State of São Paulo. The project also includes the development mapping, modeling, and data cleaning tools. For all these developments species names are crucial.
Name of your project:	**"Distributed Information System for Biological Collections: Integrating Species Analyst and SinBiota (FAPESP)"**, also known as *species*Link
Project URL:	splink.cria.org.br
Description of the project (please include information on the following): • Is the speciesbank a dynamic database or a collection of static pages? • Is the speciesbank a collaborative effort among databasers at different sites (that is, a network; does it use a web services model?) or is it a "warehouse" type of effort? • How is the speciesbank supported monetarily (as reported on the site itself)? • What are its expectations for longevity of the speciesbank on the Web (as reported on the site iteself)? • Types of data / information included? Images, research data, etc. • Does the database link directly into digital library materials automatically or just provide the links? • Who are the intended users?	1. dynamic database 2. collaborative network: distributed databases, mapping is a webservice 3. project dependant 4. it should be permanent 5. specimen data (Darwin core), observational data, maps 6. there is a system that links "species names" automatically 7. at this phase, target users are scientists and curators (biological collections), but the project aims at reaching conservationists and decision and policy makers

Name, Institution and Country:	**VISHWAS CHAVAN** Information Division, National Chemical Laboratory , Dr Homi Bhabha Road , Pune 411008, INDIA
A short paragraph about yourself. Please include a brief statement of your area of expertise and why you are interested in speciesbanks on the Web.	My group's interest is in developing tools, standards and protocols that would help in development of (i) electronic catalogues of known biota, (ii) digitization of biological collections, (iii) ecosystems specific databases development, (iv) geo-spatial information management and representations, (v) integration of multi-discipline data and information, (vi) computer aided taxonomic identification systems and electronic field guides (vii) outreach and capacity building in biodiversity and ecosystems informatics, and (viii) multi-lingual acquisition and dissemination of Indian biodiversity information. Development of speciesbanks and its use would form basis to further these initiatives.
Name of your project:	NCL Center for Biodiversity Informatics
Project URL:	www.ncbi.org.in/
Description of the project (please include information on the following): • Is the speciesbank a dynamic database or a collection of static pages? • Is the speciesbank a collaborative effort among databasers at different sites (that is, a network; does it use a web services model?) or is it a "warehouse" type of effort? • How is the speciesbank supported monetarily (as reported on the site itself)? • What are its expectations for longevity of the speciesbank on the Web (as reported on the site iteself)? • Types of data / information included? Images, research data, etc. • Does the database link directly into digital library materials automatically or just provide the links? • Who are the intended users?	As part of our initiative we have several databases which together can form basis for SpeciesBanks. These are listed below (a) IndFauna, electronic catalogue of known Indian fauna, (b) IndFungi, electronic catalogue of known Indian fungi, (c) Invasives and Alien Species Database, (d) Sacred Groves Information System, (e) Conservation sites in India, (f) ABCDIO, Access to Biological Collections Data of Indian Origin, (e) Database of Indian Taxonomists (DIT), South Asian Taxonimists (DSAT) and Indian Ocean Taxonomists (DIOT). - All these are dynamic databases. - Warehouse type efforts - Funded through in-house funding of the host institute i.e. National Chemical Laboratory, Pune, India and later on through Department of Scientific & Industrial Research (DSIR), Department of Biotechnology (DBT), Government of India. - We are developing coordinating and interlinking mechanism between these and other distributed databases to provide gateway to biodiversity information in India. We are also developing mechanism to translate / transliterate data into various Indian languages for its efficient use by all concerned. - text, numeric, alphanumeric research / observation data, multimedia illustrations including images, sketches, audio, video, etc. Maps are also used at times. - Exhaustive database of literature and information resources is being developed as parallel efforts to which database link automatically – however this link is currently not in public domain. Academicians, students, policy makers, planners, environmentalists, ecologists, taxonomists, biologists, biotechnologists, economists, and people at large.

Name, Institution and Country:	**WILLEM COETZER** South African Institute for Aquatic Biodiversity (SAIAB), South Africa
A short paragraph about yourself. Please include a brief statement of your area of expertise and why you are interested in speciesbanks on the Web.	I qualified as an entomologist and worked in biological control of weeds. My interest in GIS sparked a curiosity about information management in general, and its application in biology and conservation in particular. Having some experience of conservation planning, I appreciate the practical reasons for needing, and therefore making available, spatial specimen record, and species, data and information. SAIAB has a fish collection of about 70 000 fish specimen lots, mainly from southern Africa, as well as a large collection of images of fish. This information and these images will form the basis of the speciesbank to which we will contribute.
Name of your project:	
Project URL:	
Description of the project (please include information on the following): • Is the speciesbank a dynamic database or a collection of static pages? • Is the speciesbank a collaborative effort among databasers at different sites (that is, a network; does it use a web services model?) or is it a "warehouse" type of effort? • How is the speciesbank supported monetarily (as reported on the site itself)? • What are its expectations for longevity of the speciesbank on the Web (as reported on the site iteself)? • Types of data / information included? Images, research data, etc. • Does the database link directly into digital library materials automatically or just provide the links? • Who are the intended users?	

Name, Institution and Country:	**FABIO CORSI** ITC, the Netherlands
A short paragraph about yourself. Please include a brief statement of your area of expertise and why you are interested in speciesbanks on the Web.	Conservation biologist. Expertise in biodiversity data management and analysis of large biodiversity data sets. Interested in dynamic, web-based, taxonomic name server.
Name of your project:	BIOFRAG
Project URL:	Intranet based (Alpha testing)
Description of the project (please include information on the following): • Is the speciesbank a dynamic database or a collection of static pages? • Is the speciesbank a collaborative effort among databasers at different sites (that is, a network; does it use a web services model?) or is it a "warehouse" type of effort? • How is the speciesbank supported monetarily (as reported on the site itself)? • What are its expectations for longevity of the speciesbank on the Web (as reported on the site iteself)? • Types of data / information included? Images, research data, etc. • Does the database link directly into digital library materials automatically or just provide the links? • Who are the intended users?	Biofrag aims at investigating biodiversity fragmentation in relation to ecosystem processes and services. Biofrag is collecting data on species distribution and on ecological and environmental parameters at field locations. A meta-model for observation-based geo-information management has been developed to support the data management needs of the project. Entry point to the data are location and/or species and/or environmental parameters. The meta-model accommodates dynamic changes in the data requirements and in the analytical needs of the users. Currently the research is funded with ITC funds. Once the system will move into the operational phase, there are no foreseen end-dates for its use. The information system associated with Biofrag is research-oriented, and aims at sharing information and results of analyses among the research community.

Name, Institution and Country:	**YDE DE JONG** Zoological Museum Amsterdam, The Netherlands
A short paragraph about yourself. Please include a brief statement of your area of expertise and why you are interested in speciesbanks on the Web.	I am assistant professor in Biodiversity Informatics at the Zoological Institute of the University of Amsterdam. As such have been involved in several European biodiversity projects like Fauna Europaea (project manager), ENBI, and EuroCAT (work package leader). Beside I am an active member of working groups of International Working Group on Taxonomic Databases (TDWG) and CODATA on data standardisation.
Name of your project:	Fauna Europaea
Project URL:	www.faunaeur.org
Description of the project (please include information on the following): • Is the speciesbank a dynamic database or a collection of static pages? • Is the speciesbank a collaborative effort among databasers at different sites (that is, a network; does it use a web services model?) or is it a "warehouse" type of effort? • How is the speciesbank supported monetarily (as reported on the site itself)? • What are its expectations for longevity of the speciesbank on the Web (as reported on the site iteself)? • Types of data / information included? Images, research data, etc. • Does the database link directly into digital library materials automatically or just provide the links? • Who are the intended users?	• It is a dynamic database, however, only a static, regularly replaced copy is showed at the web. • It is a single database ("warehouse"), but a collaborative effort of more then 500 zoologist in Europe. • The set up of the database was paid by the European Union. • The University of Amsterdam will pay long-term maintenance of the database and staff; maintenance of the expert network is programmed as part of the network of excellence program EDIT (European Distributed Institute of Taxonomy). • Types of data are: Species names, Faunistics, References, and Experts info. • The database provides links to AnimalBase and BIOSIS. • The intended users are quite divers; including scientists, customs, conservation biologists, etc.

Name, Institution and Country:	**CAMIEL DIJKERS** Grontmij | AquaSense, The Netherlands
A short paragraph about yourself. Please include a brief statement of your area of expertise and why you are interested in speciesbanks on the Web.	I'm project manager of the Encylopaedia Taxonomica (EnTax). EnTax is being used in the Netherlands mainly for the standardization of taxonomic names and coding systems (e.g. TCN; TaxonCodeNetherlands) in the field of ecological monitoring. I'm interested in sharing taxonomic information throught the internet. Furthermore I'm interested in species banks that provide also species-related ecological information.
Name of your project:	The Taxon Code Netherlands (TCN) as a standard for exchange of ecological information (monitoring data).
Project URL:	www.taxonomica.com and a new prototype entax2.aquasense.net (with autecological information).
Description of the project (please include information on the following): • Is the speciesbank a dynamic database or a collection of static pages? • Is the speciesbank a collaborative effort among databasers at different sites (that is, a network; does it use a web services model?) or is it a "warehouse" type of effort? • How is the speciesbank supported monetarily (as reported on the site itself)? • What are its expectations for longevity of the speciesbank on the Web (as reported on the site iteself)? • Types of data / information included? Images, research data, etc. • Does the database link directly into digital library materials automatically or just provide the links? • Who are the intended users?	The TCN-code is being used in different monitoring-databases within the Netherlands. EnTax is used as a platform to provide the users with up to date taxonomic information and coding systems. The database is part of the Aquo-standard; a standard for exchange of water-related information within the Netherlands. The standard is maintained by the IDsW; the Information Desk Standards for Water. For EnTax/TCN, the taxonomical information is maintained by the National Museum for Natural History (Naturalis, Leiden). The database is dynamic; users can propose mutations, which will be dealt with by Naturalis . EnTax/TCN is supported by the IDsW directly. Until the end of 2006, funding of the TCN in EnTax is assured. There are plans for implementing the TCN in the National organization for Standardization (NNI). Furthermore, AquaSense is working on a new prototype (entax2.aquasense.net). This prototype will be more than just a taxonomical species-bank. It will be able to store all kind of species-based information such as autecological information, pictures, collection information and so on. For EnTax2, by using standards for the exchange of taxonomical information (by XML), we expect to be able to exchange information with other species-related databases. The European Water Framework Directive (WFD) is legislation which will ask member countries to report about their water quality. Standard ecological assessment methods will be used. EnTax2 can provide both the taxonomical information, as well as the basic information being used by the tools for ecological assessment. Furthermore, EnTax2 can be used as a knowledge tool for measures to be taken to meet the goals of the WFD. Users are mainly local water boards or environmental protection agencies who are responsible for the water quality.

Name, Institution and Country:	**GREGOR HAGEDORN** Federal Biological Research Center, Germany
A short paragraph about yourself. Please include a brief statement of your area of expertise and why you are interested in speciesbanks on the Web.	Systematic biologist with expertise in information science, developer of DeltaAccess, a software to describe and identify species, convener of the TDWG SDD (Structured Descriptive Data) standardization effort, project leader of the GLOPP, a potential "species bank".
Name of your project:	GLOPP, Global Information System for the Biodiversity of Plant Pathogenic Fungi.
Project URL:	SDD: wiki.cs.umb.edu/twiki/bin/view/SDD/WebHome GLOPP: www.glopp.net/
Description of the project (please include information on the following): • Is the speciesbank a dynamic database or a collection of static pages? • Is the speciesbank a collaborative effort among databasers at different sites (that is, a network; does it use a web services model?) or is it a "warehouse" type of effort? • How is the speciesbank supported monetarily (as reported on the site itself)? • What are its expectations for longevity of the speciesbank on the Web (as reported on the site iteself)? • Types of data / information included? Images, research data, etc. • Does the database link directly into digital library materials automatically or just provide the links? • Who are the intended users?	Refers to GLOPP: Glopp is a dynamic database, containing organism interaction, geographic distribution, images, and (under construction) character identification data. It is a collaborative effort of 4 institutions ("warehouse model). The project has lost its funding in 2003 (species information and identification was not considered a GBIF priority area) and is searching for new funding opportunies. The intended users are basic and applied scientists, especially from plant pathology.

Name, Institution and Country:	**ANDREW JONES** Cardiff University, UK
A short paragraph about yourself. Please include a brief statement of your area of expertise and why you are interested in speciesbanks on the Web.	I am a Computer Scientist, with particular interest in interoperability and in novel ways in which scientific research can be supported by computer-based problem-solving environments. Most of this research has been pursued in the context of biodiversity informatics. I have concentrated thus far on two main issues. The first is provision of a 'taxonomic backbone', including the architecture, protocols and standards needed to support interoperability among heterogeneous, distributed taxonomic databases and the development of techniques for using conflicting checklists effectively. I am currently working on these problems in the Species 2000 Europa project. The other issue is to investigate ways in which species bank and other knowledge can be used in order to perform novel scientific investigations in a workflow-based environment. I am currently working on this problem in the BiodiversityWorld project.
Name of your project:	2 representative projects: Species 2000 Europa; BiodiversityWorld.
Project URL:	www.sp2000europa.org/ www.bdworld.org/

Description of the project (please include information on the following):
• Is the speciesbank a dynamic database or a collection of static pages?
• Is the speciesbank a collaborative effort among databasers at different sites (that is, a network; does it use a web services model?) or is it a "warehouse" type of effort?
• How is the speciesbank supported monetarily (as reported on the site itself)?
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• Types of data / information included? Images, research data, etc.
• Does the database link directly into digital library materials automatically or just provide the links?
• Who are the intended users?
	Species 2000 Europa is a project to contribute to the building of a distributed catalogue of life:
	    o It is a dynamic database, comprising a federation of taxonomic databases ('Global Species Databases')
	    o Species 2000 Europa is a collaborative effort; it uses a Web Services-*style* interaction model with the distributed GSDs. Note that the protocol currently used is one that was developed when Web Services were in their infancy, and it is not SOAP-based. The Species 2000 Europa *portal* provides programmatic, SOAP-based access, however.
	    o At present, the project is funded primarily by a grant from the EU.
	    o It is hoped that it will be possible for this project to continue indefinitely, but suitable sources of continuation funding will need to be found.
	    o The data is essentially species checklist information: scientific names (accepted, synonyms); common names; geography; references; etc
	    o There are various intended users. Two distinct *kinds* of use are supported: interactive use, such as looking up a scientific name from a Web browser; and programmatic use, e.g. as a 'synonymy server'
	
	As indicated above, the BiodiversityWorld project is primarily a consumer of species bank information, so most of the information requested does not apply. BiodiversityWorld provides middleware that makes it possible to introduce databases and analytic tools into the BiodiversityWorld distributed environment, and workflows can be built to combine data, perform analyses, etc.

Name, Institution and Country:	**VICTOR E MIYAKAWA** Instituto de Investigaciones de la Amazonia Peruana – IIAP, Perú
A short paragraph about yourself. Please include a brief statement of your area of expertise and why you are interested in speciesbanks on the Web.	Having a background in Computer Science and specialization in Management Information Systems, I am dedicated to design and implement information systems. In the last four/five year we have implemented several thematic information systems in Peru: SIAMAZONIA, SIFORESTAL, SITURISMO, among other. Also information systems for natural protected areas. SIAMAZONIA is our flagship information system and it is hosted by IIAP, institution that has worked on the Peruvian Amazonian for almost 25 years, generating huge amount of information that includes taxonomic flora and fauna information. We would like for SIAMAZONIA to start building a species bank for the Peruvian amazonia and that also serves as a model for the entire country, given the leadership role that SIAMAZONIA has right now.
Name of your project:	SIAMAZONIA
Project URL:	www.siamazonia.org.pe
Description of the project (please include information on the following): • Is the speciesbank a dynamic database or a collection of static pages? • Is the speciesbank a collaborative effort among databasers at different sites (that is, a network; does it use a web services model?) or is it a "warehouse" type of effort? • How is the speciesbank supported monetarily (as reported on the site itself)? • What are its expectations for longevity of the speciesbank on the Web (as reported on the site iteself)? • Types of data / information included? Images, research data, etc. • Does the database link directly into digital library materials automatically or just provide the links? • Who are the intended users?	SIAMAZONIA hosts an array of dynamic databases from several themes from different institutions. The implementation scheme is a hybrid from the options indicated (network, web service, warehouse). It varies due to the resources available. That is, some of our partners would like to share its information, but do not have the adequate infrastructure, then we act as an ISP (hosting, warehouse space, among other services). For institutions with more available resources we interconnect (network approach), and for information generated at IIAP, it works as web services. It is important to mention that all of these services (including the pseudo-ISP) are free of charge. SIAMAZONIA has been adopted by IIAP as a strategic tool; this means that it has its own operating budget. Furthermore, SIAMAZONIA is included in activities of other projects that IIAP is handling, especially the Peruvian-Finnish BIODAMAZ project. Other partners are also including SIAMAZONIA in their activities. SIAMAZONIA handles a wider variety of information types, from research data to satellite images served by a map server. It also contains ecological, socio-economic data and it interfaces with SIG tools. SIAMAZONIA works with direct links into databases and also reference links to other sites. Presently, we are working in content syndication to further improve the updating of the site. Intended users are primarily in the scientific & academic areas, but recently we have had lots of school teachers and students accesing SIAMAZONIA's web site. Furthermore, we are promoting BIOTRADING, therefore, at the end of the year, SIAMAZONIA will show information on how to sustainable use Peruvian Amazonian biodiversity products and services.

Name, Institution and Country:	**ROBERT A. MORRIS** Uni. Massachusetts/Boston, USA
A short paragraph about yourself. Please include a brief statement of your area of expertise and why you are interested in speciesbanks on the Web.	Professor of Computer Science with particular interests in machine accessible, web distributed biodiversity information services. Recently we have also been funded to explore the management of images and image metadata using JPEG2000. Our core projects provide data for our own, and access to other's speciesbanks in support of scientific and educational projects on ecology.
Name of your project:	UMB Electronic Field Guide (EFG) Project
Project URL:	www.cs.umb.edu/efg
Description of the project (please include information on the following): • Is the speciesbank a dynamic database or a collection of static pages? • Is the speciesbank a collaborative effort among databasers at different sites (that is, a network; does it use a web services model?) or is it a "warehouse" type of effort? • How is the speciesbank supported monetarily (as reported on the site itself)? • What are its expectations for longevity of the speciesbank on the Web (as reported on the site iteself)? • Types of data / information included? Images, research data, etc. • Does the database link directly into digital library materials automatically or just provide the links? • Who are the intended users?	We generate taxon descriptions dynamically from a database as XML, but through a framework which can turn the XML into HTML, plain text, PDF, or apply arbitrary XSLT to produce another form of XML for exchange. The descriptions can thus be accessed either by public machine interfaces, by web forms, or by interactive keys, all of which we support. The core software *generates* speciesbank services from relational or object oriented databases that serve as the backend, and we also provide a simple mechanism for the generation and web service of interactive identification keys to our own, or other, arbitrary, speciesbanks. We are funded by the U.S. National Science Foundation for the development of the software and some provision of data. For the data we ourselves serve, we expect that the speciesbank will remain in service as long as the University of Massachusetts/Boston exists. Our service architecture is agnostic about what consititutes a species description. At the moment, we support images and descriptive data, but have plans to support geocoded observations as well. In a related project we are providing support for collaborative annotation of images and their regions of interest. If the backend provides links or other discovery mechanisms to digital library materials, we can interpret those as service calls to provide the result directly in the front-end applications or integrated XML. Because our design accommodates arbitrary user interfaces, we have a special interest in mechanisms that provide different classes of users with appropriate UI against the same data. Often, our own taxonbanks are location specific, with emphasis on Costa Rica and New England. Among our own present populated taxonbanks are included: • Ithomid butterflies of Costa Rica, aimed at field naturalists and students seeking to identify members of that family • Aquatic invertebrates of Eastern Massachusetts aimed at field naturalists, students, teachers, and people aimed at water quality indicators • Plant Families of Costa Rica, aimed at aimed at field naturalists and students seeking to identify to the family level, especially to select an appropriate Family-based keys • Image-centric speciesbanks providing annotated field images of species and their interactions. Current emphasis is on plant species invasive in New England. Our major code, and soon all the rest, is available under open source licenses.

Name, Institution and Country:	**RICHARD OSTLER** CEH Monks Wood, UK
A short paragraph about yourself. Please include a brief statement of your area of expertise and why you are interested in speciesbanks on the Web.	Main areas of expertise are: Computer programming Database management Data modeling Currently the technical team leader for the National Biodiversity Network. My main interest in the event to is to learn what other people are doing in this field and how they are doing it; the kinds of problems people have encountered. Hopefully make some useful contacts
Name of your project:	National Biodiversity Network Gateway
Project URL:	www.searchnbn.net
Description of the project (please include information on the following): - Is the speciesbank a dynamic database or a collection of static pages? - Is the speciesbank a collaborative effort among databasers at different sites (that is, a network; does it use a web services model?) or is it a "warehouse" type of effort? - How is the speciesbank supported monetarily (as reported on the site itself)? - What are its expectations for longevity of the speciesbank on the Web (as reported on the site iteself)? - Types of data / information included? Images, research data, etc. - Does the database link directly into digital library materials automatically or just provide the links? - Who are the intended users?	The NBN Gateway holds approx. 18million species distribution records provided from >130 datasets by >30 organisations. The development of the suite is guided by several organizations, but technical development is all led by CEH Monks Wood. The records are held in a central data warehouse. We are currently developing web services to allow developers to query the database. The website can be used to dynamically map species distribution data and generate reports for sites of conservation status in the UK. Financial support is provided by government conservation agencies and Centre for Hydrology and Ecology. The project is ongoing, however, it is expected the role of the website will decrease in the future, being replaced by a suite of web services to access a small number of regional node databases. The website is used by • Government agencies and departments/ local government • Private sector consultancies (mostly environmental, planning and civil engineering) • academic users • volunteer recorders (provide most of the data) • public/general interest The site currently has between 17000 – 18000 hits/week.

Name, Institution and Country:	**STEVEN SHATTUCK** Australian National Insect Collection, CSIRO Entomology, Australia
A short paragraph about yourself. Please include a brief statement of your area of expertise and why you are interested in speciesbanks on the Web.	I am a taxonomist (working on ants, insect family Formicidae) who has moved into the informatics arena to develop tools for assisting with taxonomic research. This work has resulted in the development of the BioLink software package.
Name of your project:	Australian Ants Online; BioLink
Project URL:	www.ozants.com www.biolink.csiro.au
Description of the project (please include information on the following): • Is the speciesbank a dynamic database or a collection of static pages? • Is the speciesbank a collaborative effort among databasers at different sites (that is, a network; does it use a web services model?) or is it a "warehouse" type of effort? • How is the speciesbank supported monetarily (as reported on the site itself)? • What are its expectations for longevity of the speciesbank on the Web (as reported on the site iteself)? • Types of data / information included? Images, research data, etc. • Does the database link directly into digital library materials automatically or just provide the links? • Who are the intended users?	Australian Ants Online is currently based on static pages (approx. 2000 files occupying 37 MB) derived from the published work *Australian Ants* (1999, CSIRO Publishing). However, basic taxonomic information for all taxa and specimen data (for approximately 40,000 specimens) are held in a BioLink database. Work is currently underway to transfer the remainder of the information from the static site into a BioLink database and to build dynamic web interfaces to this information. This information is maintained by staff within the Australian National Insect Collection with input from the wider community; pages are updated regularly as needed. Development of content for this project is currently supported by the Australian National Insect Collection (through general funding) with infrastructure developed as part of the Biodiversity Informatics Team (through a range of internal and external funds). It is anticipated that this model will continue for the foreseeable future. Information included covers essentially all information found in modern morphology-based revisions, including nomenclature, morphology (descriptions, dichotomous keys, multi-entry keys), structured text, specimens and multimedia (of any type). Links to external sources are supported through a URL-based citation mechanism (essentially a "citation" which points to a URL). The work of this project is aimed at two audiences: the biological community seeking information on Australian ants and the broader taxonomic community seeking tools for managing taxon- and collection-based information.

Name, Institution and Country:	**ALBERTO GONZÁLEZ TALAVÁN** Coordination Unit of Spanish GBIF Node, SPAIN
A short paragraph about yourself. Please include a brief statement of your area of expertise and why you are interested in speciesbanks on the Web.	At present, I work as a Project Coordinator at the Spanish GBIF Node, working as: - link between potential and actual data providers and the node. - advertising and promoting the use of GBIF biodiversity data. - collaborating in the development of data mining software, for collections and researchers. Then, I am interested in the outcome of any SpeciesBank related initiative, from GBIF's and providers points of view.
Name of your project:	BIBMASTER
Project URL:	www.gbif.es/bibmaster/bibmaster.php
Description of the project (please include information on the following): • Is the speciesbank a dynamic database or a collection of static pages? • Is the speciesbank a collaborative effort among databasers at different sites (that is, a network; does it use a web services model?) or is it a "warehouse" type of effort? • How is the speciesbank supported monetarily (as reported on the site itself)? • What are its expectations for longevity of the speciesbank on the Web (as reported on the site iteself)? • Types of data / information included? Images, research data, etc. • Does the database link directly into digital library materials automatically or just provide the links? • Who are the intended users?	BIBMASTER is a biodiversity information management system, developed and supported by the Coordination Unit of Spanish GBIF Node. This Software can store and manage speciesbank information, and it is used at the moment in several important taxonomic projects related to the Iberian Peninsula. The information related to these projects stored in BIBMASTER would become a nice addition to GBIF SpeciesBank information. The already established community of users of BIBMASTER constitutes a noticeable group of speciesbank information potential users.

Name, Institution and Country:	KEVIN THIELE Centre for Biological Information Technology, The University of Queensland, AUSTRALIA
A short paragraph about yourself. Please include a brief statement of your area of expertise and why you are interested in speciesbanks on the Web.	I am the principal designer for the Lucid suite of interactive identification tools. I have also been involved since its inception with development of the TDWG-SDD data standard for descriptive data.
Name of your project:	Lucid Identification Tools
Project URL:	www.lucidcentral.org
Description of the project (please include information on the following): • Is the speciesbank a dynamic database or a collection of static pages? • Is the speciesbank a collaborative effort among databasers at different sites (that is, a network; does it use a web services model?) or is it a "warehouse" type of effort? • How is the speciesbank supported monetarily (as reported on the site itself)? • What are its expectations for longevity of the speciesbank on the Web (as reported on the site iteself)? • Types of data / information included? Images, research data, etc. • Does the database link directly into digital library materials automatically or just provide the links? • Who are the intended users?	Lucid keys are being built by many users throughout the world using Lucid desktop programs. Individual key builders are responsible for developing taxon pages for the taxa in their keys. These are most often static pages, but can be dynamically served. Lucid keys may be deployed via CD or the WWW. CBIT provides the software, support and offers hosting for keys, but key builders may be entirely independent of us, and hence support the development and maintenance of their keys independently Users vary depending on the way the key is built – from other professional taxonomists to members of the general public, teachers etc.

Name, Institution and Country:	**PETER C. VAN WELZEN** National Herbarium Netherlands (NHN), Leiden University Branch, the Netherlands

A short paragraph about yourself. Please include a brief statement of your area of expertise and why you are interested in speciesbanks on the Web.
 	
Name of your project:
	Revision of Euphorbiaceae for Flora Malesiana (Malay Archipelago) and Flora of Thailand projects.
	Historical biogeography of Malesia
	Databasing collections and floras of Malesia and Thailand
	
	Four projects:
	    1. NHN-on line (collections and revisions)
	    2. Malesian Euphorbiaceae
	    3. Thai Euphorbiaceae
	    4. Cyclopaedia of Malesian collectors

Project URL:	1: www.nationaalherbarium.nl/virtual/ herbaria.plants.ox.ac.uk/bol/home/default.aspx?section=home 2. www.nationaalherbarium.nl/euphorbs/ www.nationaalherbarium.nl/macmalborneo/index.htm 3. www.nationaalherbarium.nl/thaieuph/ 4. www.nationaalherbarium.nl/fmcollectors/fmcollectors.htm

Description of the project (please include information on the following):
  • Is the speciesbank a dynamic database or a collection of static pages?
  • Is the speciesbank a collaborative effort among databasers at different sites (that is, a network; does it use a web services model?) or is it a "warehouse" type of effort?
  • How is the speciesbank supported monetarily (as reported on the site itself)?
  • What are its expectations for longevity of the speciesbank on the Web (as reported on the site iteself)?
  • Types of data / information included? Images, research data, etc.
  • Does the database link directly into digital library materials automatically or just provide the links?
  • Who are the intended users?
	The NHN database is dynamic, the flora websites are static pages.
	
	The NHN database is a collaborative effort of the three decentral institutes forming the NHN. The database is also part in a larger network: SEABCIN (SouthEast Asian Botanical Collections Information System: www.seabcin.org/), a collaborative between the NHN and the major SE Asian herbaria. Emphasis is still on collections, but in the future species data will be added actively.
	
	The NHN supports its own databases, but grants are used to digitise collections.
	
	The longevity is not a problem, technical facilities are in place, and a system manager and database manager are available.
	
	The database (a Brahms database) includes collection information, species information (e.g., descriptions), nomenclature, references, images, library journal and key-word database (keywords are plant names), links to molecular data.
	
	The databases link partly automatically to other data, for others (molecular sequences) just links are provided.
	
	The idea of SEABCIN is to be open for all kinds of users, though they have to register. The data are in optimal format for systematists.

Name, Institution and Country:	**DONAT AGOSTI** American Museum of Natural History; antbase.org; Switzerland Partially in collaboration with Norm Johnson, Hymenoptera Name Server
A short paragraph about yourself. Please include a brief statement of your area of expertise and why you are interested in speciesbanks on the Web.	By training I am systematist with over 20 years experience. For the last ten years I am involved in developing standard collecting tools for biodiversity monitoring and an ant knowledge system to provide electronic access to information on all the ant species. For more than three years, we provide dynamic pages for all the taxa including the entire systematics information, links to original descriptions as pdfs (ca 77,000 pages online accessible linked to the name database), distribution data, and related sites such as genbank. We see it also as crucial, that all the systematics information is accessible to the widest possible community. That's why we feed into ITIS, GBIF, NCBI. In a more recent effort with Bob Morris, Tom Moritz, Norm Johnson and Klemens Boehm, we working towards a XML mark-up schema for the legacy systematics publications. Additionally, we are also involved in discussions regarding copyright issues which we see as a potential crucial stumbling block for the development of tools such as speciesbank.
Name of your project:	Antbase.org
Project URL:	antbase.org atbi.biosci.ohio-state.edu:210/hymenoptera/nomenclator.home_page
Description of the project (please include information on the following): - Is the speciesbank a dynamic database or a collection of static pages? - Is the speciesbank a collaborative effort among databasers at different sites (that is, a network; does it use a web services model?) or is it a "warehouse" type of effort? - How is the speciesbank supported monetarily (as reported on the site itself)? - What are its expectations for longevity of the speciesbank on the Web (as reported on the site iteself)? - Types of data / information included? Images, research data, etc. - Does the database link directly into digital library materials automatically or just provide - Who are the intended users?	The ant species bank is dynamic, including some 11826 ant species, including all the valid and invalid names. The speciesbank is a collaborative effort between various institutions running at the moment on a Oracle platform which data can be edited externally.

Name, Institution and Country:	**BOB ALLKIN** Royal Botanic Gardens Kew, UK
A short paragraph about yourself. Please include a brief statement of your area of expertise and why you are interested in speciesbanks on the Web.	25 yrs experience building species databanks in Mexico, UK and Brazil of variable scope & aimed at diverse classes of user. Built Delta descriptive databases, and worked on design of checklist and descriptive species databases including collaborative projects such as International Legume Database and Information Service. Designed data models for encompassing species descriptions and built software systems for managing checklists and broader species banks. Established Plant Information Centre in NE Brazil offering information services to support regional development and poverty alleviation built around a species checklist for the region. Increasingly interested in defining need for and impact of plant information services.
Name of your project:	Currently working as part of collaborative initiative between Kew, Missouri and New York Botanic Gardens called "iPlants"
Project URL:	www.iplants.org
Description of the project (please include information on the following): • Is the speciesbank a dynamic database or a collection of static pages? • Is the speciesbank a collaborative effort among databasers at different sites (that is, a network; does it use a web services model?) or is it a "warehouse" type of effort? • How is the speciesbank supported monetarily (as reported on the site itself)? • What are its expectations for longevity of the speciesbank on the Web (as reported on the site iteself)? • Types of data / information included? Images, research data, etc. • Does the database link directly into digital library materials automatically or just provide the links? • Who are the intended users?	Project in pilot phase. Developing methodologies for sharing information among participating institutions, producing specification of user requirements (end users and institutional users), designing prototype web interface. Initiative is collaborative using web services model. Database will be dynamic. Business model being developed alongside user requirement and measures of impact. Sustainability of information service key design issue. Plant species checklist with synonymy of latin names, single concept but including reference to other views, global distribution, images, links to other relevant information sources and, for 20% of the species, preliminary conservation assessments. Current prototype links provides both direct access to certain digital libraries and just links to others. Intended users include organisations offering information services involving plant names (e.g. Genbank, UNEP-WCMC) and individuals wishing to ask simple questions re plant diversity worldwide.

Name, Institution and Country:	**JULIA BENAVIDES** Alexander von Humboldt Biological Resources Research Institute, Colombia.
A short paragraph about yourself. Please include a brief statement of your area of expertise and why you are interested in speciesbanks on the Web.	Biologist, postgraduate studies on Environmental Planning and Management of Natural Resources. Work experience on the fields of land planning, environmental consulting for engineering projects, and information systems. Strong interests in modeling and simulation of environmental issues, with emphasis in System Dynamics. Since November 2003, I work for the Colombian Biodiversity Information System (SIB), an initiative led by the Humboldt Institute. The Institute has the mission of compiling the inventory of the Colombian biota. The SIB has designed a distributed system model to provide access to all the biodiversity information of Colombia.
Name of your project:	Electronic Catalogue of the Organisms of Colombia.
Project URL:	Not on line yet. It will be available by April, 2005, at www.siac.net.co/sib or www.siac.org.co/sib.
Description of the project (please include information on the following): • Is the speciesbank a dynamic database or a collection of static pages? • Is the speciesbank a collaborative effort among databasers at different sites (that is, a network; does it use a web services model?) or is it a "warehouse" type of effort? • How is the speciesbank supported monetarily (as reported on the site itself)? • What are its expectations for longevity of the speciesbank on the Web (as reported on the site iteself)? • Types of data / information included? Images, research data, etc. • Does the database link directly into digital library materials automatically or just provide the links? • Who are the intended users?	• It is a dynamic database. The information on line will come from a database with a relational model developed in PostgreSQL and implemented under J2EE architecture. • At a first stage, the catalogue will be one of a warehouse type. The information will be stored in a centralized database. In the future, information from a distributed system might be managed. • The design, development and implementation are being supported by the Humboldt Institute, through the project "Conservation and Sustainable Use of Biodiversity in the Colombian Andes" (Andes Project), a six-year project financed by GEF-World Bank. • At this moment, the existence of the catalogue is assured for at least a year. Financial strategies for the future ?after the Andes Project? are being searched. It is expected that the site may become a permanent and growing source of the Colombian biodiversity information, not only for the level of species, but also for the level of ecosystems. • For species, the following information is included: scientific name, author, common names (and places where they are used), geographic distribution data (texts and maps, points and/or polygons, confirmed and/or potential distribution), altitudinal distribution, distribution by ecosystems, IUCN threat status, CITES status, natural history, images (videos and sounds may be accessed), taxonomic information (link to the taxonomic authority file), information of type specimens, description for specialists (it may be the original description of the taxon), description for non-specialists, information about uses, conservation efforts, credits (authors, reviewers, editors, photographers, etc.), and bibliographic references. • The database actually stores the information. Links are provided for taxonomic authority files, metadata catalogue, biodiversity thesaurus, distributed search of specimens, taxonomic keys, and recommended/related sites. The first three are centralized datasets managed by the coordinator team of the SIB. • The catalogue is designed to provide information for the general public, as well as the decision makers and the specialists. A school kid could find basic information about what an animal looks like, what it eats and where it lives. A control authority, like a policeman in an airport, could find a simple description of the animal to differentiate it from others. A biologist could find information about the distribution of the species and could have access to a recommended taxonomic key. • Of course, it is not easy to compile all this information for every species ?and much of it simply it is not available ?. For some groups, this can be readily done, but for others it cannot. However, even basic information like name, distribution, and a few lines of description or natural history, is useful and very important.

Name, Institution and Country:	**JONATHAN BENNETT** Natural History Museum, London, United Kingdom
A short paragraph about yourself. Please include a brief statement of your area of expertise and why you are interested in speciesbanks on the Web.	I am a plant systematist, involved with both herbarium work producing taxonomic revisions, and also research interests in molecular systematics. Currently I am working as part of a large multi-institutional project to produce a global monograph of Solanum, the main pro duct of which will be a web-accessible database of species names, literature, images, identification keys, herbarium collections, type specimens, links to sequence and genomics information.
Name of your project:	PBI (Planetary Biodiversity Inventories) Solanum Project
Project URL:	www.nhm.ac.uk/botany/databases/solanum/
Description of the project (please include information on the following): • Is the speciesbank a dynamic database or a collection of static pages? • Is the speciesbank a collaborative effort among databasers at different sites (that is, a network; does it use a web services model?) or is it a "warehouse" type of effort? • How is the speciesbank supported monetarily (as reported on the site itself)? • What are its expectations for longevity of the speciesbank on the Web (as reported on the site iteself)? • Types of data / information included? Images, research data, etc. • Does the database link directly into digital library materials automatically or just provide the links? • Who are the intended users?	• The project aims to produce a complete species -level monograph of Solanum (ca. 1500 species) and is a collaboration between the University of Utah, New York Botanic Garden, University of Wisconsin and the Natural History Musem, London. All taxonomic outputs will be available on-line. Funding is from NSF and the All Species Foundation. • The (dynamic) database is currently under construction and will be more comprehensive than the prototype database currently found on the project website, and is based at the NHM, London. A mirror site will be established at NYBG. • The database is planned to contain the following information: all Solanum species names, information on their taxonomic status, previous/current infra-generic classifications, literature citations, some pdfs of early protologues for hard to obtain publications; database of collections (currently being databased using BRAHMS and Ke-EMu); distribution maps; species descriptions – all in a searchable standardised format; information on each species' biology – e.g. uses, vernacular names, ecology; images of the plant/habitats (images linked directly to the database); digital images of type specimens (either as part of the database or with links to e xisting on-line type images); links to genomic and sequence information contained on the Solanaceae Genomics Network. • Intended users are primarily the systematics community; the Solanaceae community – a large group of plant breeders, geneticists etc. due to the economic importance of the genus (including potato, tomato, eggplant); additional content will be tailored to non-specialists as a tool with which to explain systematics and nomenclature.

Name, Institution and Country:	**DANIEL R. BROOKS** University of Toronto, Canada
A short paragraph about yourself. Please include a brief statement of your area of expertise and why you are interested in speciesbanks on the Web.	I am a systematist and evolutionary biologist, and a pioneer in the integration of phylogenetic information in comparative evolutionary studies. In 1993, I became involved with the All-Taxa Biodiversity Inventory (ATBI) initiative, and decided to change the focus of my research career. Since 1996, I have been coordinating the inventory of eukaryotic parasites of vertebrates in the Area de Conservacion Guanacaste, Costa Rica, essentially doing what I would have done if the ATBL had succeeded. Although I have never had dedicated funding for any aspect of the project, I endeavor to provide at least a skeletal version of what I think will be (and should be) demanded of the systematics community with respect to dealing with the biodiversity crisis. Thus, the project, and its web presence, are an indication of what can be done with dedication and very little money. My dream is to some day be able to show what could be done if we had even moderate funding.
Name of your project:	Eukaryotic Parasites of Vertebrates of the Area de Conservacion GUanacaste, Costa Rica
Project URL:	brooksweb.zoo.utoronto.ca/index.html
Description of the project (please include information on the following): • Is the speciesbank a dynamic database or a collection of static pages? • Is the speciesbank a collaborative effort among databasers at different sites (that is, a network; does it use a web services model?) or is it a "warehouse" type of effort? • How is the speciesbank supported monetarily (as reported on the site itself)? • What are its expectations for longevity of the speciesbank on the Web (as reported on the site iteself)? • Types of data / information included? Images, research data, etc. • Does the database link directly into digital library materials automatically or just provide the links? • Who are the intended users?	1- hybrid of static species pages linked to inventory and phylogenetics databases 2- no network at the moment, but only because no other parasitologists are doing this yet 3- I bleed funds from my research grant to support it 4- Indefinite; I will hand the site off when I retire; by then I hope it will be part of a global network 5- Images, inventory records, published phylogenetic information not included in any TOL site or project, home pages, links to selected parasite collections/projects, lists of participants, list of publications with downloadable pdfs 6- Hybrid, as per (5) 7- Systematists, evolutionary biologists, ecologists, biodiversity managers, emerging infectious disease experts, educators, science journalists

Name, Institution and Country:	**MICHAEL BROWNE** IUCN SSC Invasive Species Specialist Group, New Zealand
A short paragraph about yourself. Please include a brief statement of your area of expertise and why you are interested in speciesbanks on the Web.	I am a Geographer with training in GIS. I was co-developer of the Global Invasive Species Database and I have been its manager for the past 3 years. In this role, I consult with a wide variety of programmes and people in developing and developed nations. I liase with partners and prioritise activities. I am familiar with the availability, accessibility and quality of invasive species information, and information needs of scientists, practitioners and other people concerned with the environment. I have developed a good understanding of invasive alien species (IAS) and related bioinformatic issues.
Name of your project:	The Global Invasive Species Database
Project URL:	www.issg.org/database
Description of the project (please include information on the following): • Is the speciesbank a dynamic database or a collection of static pages? • Is the speciesbank a collaborative effort among databasers at different sites (that is, a network; does it use a web services model?) or is it a "warehouse" type of effort? • How is the speciesbank supported monetarily (as reported on the site itself)? • What are its expectations for longevity of the speciesbank on the Web (as reported on the site iteself)? • Types of data / information included? Images, research data, etc. • Does the database link directly into digital library materials automatically or just provide the links? • Who are the intended users?	The Global Invasive Species Database (GISD) aims to raise awareness about invasive alien species by providing a broad audience with easy access to authoritative information. The GISD is also a management tool, supporting invasive species prevention, management and control for conservation. The GISD focuses on species that threaten biodiversity and covers all taxonomic groups from micro-organisms to animals and plants. It includes information on the ecology, distribution, prevention and management of invasive species as well as references, contacts, links to further information and images. This information is needed by natural resource managers, extension agents, environmental and biodiversity specialists, quarantine and border control personnel, educators and students, and other individuals and organisations concerned with the environment. The GISD is a dynamic database. Data in the GISD "warehouse" are stored and manipulated by MS SQL Server 7 and Transact-SQL. The SQL Server database is the foundation for the Dynamic HTML Web interface which uses Internet Information Server (IIS) and Active Server Page (ASP) to search and display database information. The Global Invasive Species Database benefits from the support of invasive species experts from around the world and receives monetary support from: • The World Conservation Union (IUCN) • National Biological Information Infrastructure (NBII) • The University of Auckland • Manaaki Whenua-Landcare Research Limited (NZ) • The Pacific Development and Conservation Trust • New Zealand Aid Additional one-off support has come from a number of other sources. We expect the GISD project to be ongoing because there are many more species impacting biodiversity than the 300 already described, new information is being created every day, and many countries have little or no expertise or relevant information about the invasive species threats they face.

Name, Institution and Country:	**ENRIQUE CASTRO** Organization for Tropical Studies, Costa Rica.
A short paragraph about yourself. Please include a brief statement of your area of expertise and why you are interested in speciesbanks on the Web.	I live in a country where conserving biodiversity is very important to everybody, so, I have had interest in the biology forever (including: botany, ornithology, zoology, etc.), I also like the computers very much, with these things in my mind I choose a career in Informatics because it is an area where I can create some things (like applications, web publications, etc.) and maybe in the future I'll could develop a project related with biology. Now, ten years later, I have been developing modern tools to identify plants on the web during the last four year. My interest in SpeciesBanks is to try to find the way to help students and the general public to discover the importance of any species and facilitate its conservation.
Name of your project:	La Selva Digital Florula
Project URL:	sloth.ots.ac.cr/local/florula2
Description of the project (please include information on the following): • Is the speciesbank a dynamic database or a collection of static pages? • Is the speciesbank a collaborative effort among databasers at different sites (that is, a network; does it use a web services model?) or is it a "warehouse" type of effort? • How is the speciesbank supported monetarily (as reported on the site itself)? • What are its expectations for longevity of the speciesbank on the Web (as reported on the site iteself)? • Types of data / information included? Images, research data, etc. • Does the database link directly into digital library materials automatically or just provide the links? • Who are the intended users?	The Digital Florula project started in 1999, as an initiative of the Organization for Tropical Studies. The main goal of the project was to develop a tool to facilitate the identification of 1850 species of plants in La Selva Biological Station (www.ots.ac.cr/en/laselva) and surrounding areas, to help several hundred students and scientists that visit the station each year, with their research projects. The project is accessible for anybody using the Internet. From 2000 to 2004 we worked on the project for short periods and submitted several proposals; last year to the United States National Science Foundation and CRUSA(Costa Rica & USA foundation for the cooperation) our proposals were accepted and now we are starting a new stage with the support to obtain all the requirements to finish the project in next three years. The project works with a database in PostgreSql. We use PHP, Html and JavaScript languages to create several dynamic pages with diverse queries to complete the site. The project has several sections: species web pages (species treatments), search engines (to find species text and images), electronic keys and an images gallery with 12000 images. This year, we hope to create the English version (now it is in Spanish only), to include the information from the 2000 botanical collections and create several maps related to plant specimens. Once we accomplish these tasks we would like to integrate our database to Gbif initiative.

Name, Institution and Country:	**SIMON CLAUS** Flanders Marine Institute (VLIZ), Belgium
A short paragraph about yourself. Please include a brief statement of your area of expertise and why you are interested in speciesbanks on the Web.	As a marine biologist and scientific Staff Member of the Flanders Marine data center, I help developing taxonomic databases. We are focused on databases of marine species and databases on marine biodiversity.
Name of your project:	European Register of Marine Species (ERMS)
Project URL:	www.marbef.org/data
Description of the project (please include information on the following): • **Is the speciesbank a dynamic database or a collection of static pages**? • **Is the speciesbank a collaborative effort among databasers at different sites (that is, a network; does it use a web services model?) or is it a "w**arehouse" type of effort? • **How is the speciesbank supported monetarily (as reported on the site itself)**? • What are its expectations for longevity of the speciesbank on the Web (as reported on the site iteself)? • Types of data / information included? Images, research data, etc. • Does the database link directly into digital library materials automatically or just provide the links? • Who are the intended users?	The European Register of Marine Species (ERMS) was created in 1998 by a project funded under the European Union MAST research programme. It resulted in a species list for European marine waters. This first version has been published as a book (Costello *et al*, 2001). Currently, the ERMS project is maintained by SMEBD, the Society for the Management of European Biodiversity Data (www.smebd.org/). The register is now revised, in the framework of the MARBEF EU Network of Excellence. The original website has been replaced by the species register served from a relational database (www.marbef.org/data/erms.php). This structure is a variation on the structure of ITIS: an open hierarchy, where each taxon record points at a 'parent' record. At regular intervals, a snapshot of the database will be archived; these archive copies will be kept available through the ERMS web site. It is anticipated that the Register will become a standard reference (and technological tool) for marine biodiversity training, research and management in Europe. Currently there are 47319 taxa in the database of which 29862 are valid species. The project covers species of the kingdoms Animalia, Plantae, Fungi and Protoctista occuring in the marine environment, defined as up to the strandline or splash zone above the high tide mark and down to 0.5 (psu, ppt) salinity in estuaries. The area covered by the project is all the continental shelf seas of Europe, from the Canaries and Azores to Greenland and north west Russia, including the Mediterranean shelf and Baltic Seas. Approved editors of species lists are able to access ERMS 2.0 online, such that the register will be changing according to need and editorial diligence. An interface is now developed to allow list editors to edit the lists they are responsible for online.

Name, Institution and Country:	**NANCY COPLEY** Woods Hole Oceanographic Inst., USA
A short paragraph about yourself. Please include a brief statement of your area of expertise and why you are interested in speciesbanks on the Web.	I am a marine zooplankton taxonomist and will be helping to design and implement 'species pages' – attractive presentations of taxonomic features, ecological, and biogeographic information for global species of holozooplankton - to be integrated into the CMarZ database.
Name of your project:	Census of Marine Zooplankton
Project URL:	(in development) It will be at: plankton.unh.edu
Description of the project (please include information on the following): • Is the speciesbank a dynamic database or a collection of static pages? • Is the speciesbank a collaborative effort among databasers at different sites (that is, a network; does it use a web services model?) or is it a "warehouse" type of effort? • How is the speciesbank supported monetarily (as reported on the site itself)? • What are its expectations for longevity of the speciesbank on the Web (as reported on the site iteself)? • Types of data / information included? Images, research data, etc. • Does the database link directly into digital library materials automatically or just provide the links? • Who are the intended users?	Dynamic access: data will be stored and served using the JGOFS/GLOBEC software, a web-based, distributed, object-oriented data management system. The software is available free at globec.whoi.edu/globec-dir/software_tools.html.. Access will be via an internet portal integrated and linked to the CoML (Census of Marine Life) and OBIS (Ocean Biogeographical Information System) portal. It will be a collaborative effort with participants responsible for updating, quality control and correcting their own project data. Sloan Foundation, Census of Marine Life field projects are to finish in 2010 so site should be available beyond this time if possible. A detailed database of zooplankton species worldwide, it will include: species descriptions, taxomonic, molecular, and specimen data, background information on ecology, biology, biodiversity of zooplankton including maps and images. Direct link to database library and links will also be provided to a variety of zooplankton resources on the web. Students, general readers, educators, and zooplankton specialists

Name, Institution and Country:	**WILLEM FERGUSON**
	Pretoria University, South Africa
A short paragraph about yourself. Please include a brief statement of your area of expertise and why you are interested in speciesbanks on the Web.	I do research in biodiversity of grasslands. I also manage a national initiative in atlassing of biodiversity. I am interested in interfacing the bio-atlassing project with some all-taxon inventories, giving more information about taxa.
Name of your project:	Biomap
Project URL:	spatial.csir.co.za/biomap
Description of the project (please include information on the following): • Is the speciesbank a dynamic database or a collection of static pages? • Is the speciesbank a collaborative effort among databasers at different sites (that is, a network; does it use a web services model?) or is it a "warehouse" type of effort? • How is the speciesbank supported monetarily (as reported on the site itself)? • What are its expectations for longevity of the speciesbank on the Web (as reported on the site iteself)? • Types of data / information included? Images, research data, etc. • Does the database link directly into digital library materials automatically or just provide the links? • Who are the intended users?	Collection of static pages Collaborative effort between museums and academic institutions To date by State Department of Science and Technology It is intended to integrate Biomap with SABIF Hopefully a permanent and organically growing feature Species distributions. For soem taxa, e.g. birds, species-specific information. No Academics and conservation planners

Name, Institution and Country:	**RAINER FROESE** IfM-GEOMAR, Kiel, Germany
A short paragraph about yourself. Please include a brief statement of your area of expertise and why you are interested in speciesbanks on the Web.	I am the coordinator of FishBase since 1990. I am also a founding member of Species 2000 and still associated with their taxonomy working group. My current interest is to expand the successful FishBase approach to all aquatic organisms, e.g. through an AllFish Consortium including the other aquatic species databases.
Name of your project:	FishBase
Project URL:	www.fishbase.org
Description of the project (please include information on the following): • Is the speciesbank a dynamic database or a collection of static pages? • Is the speciesbank a collaborative effort among databasers at different sites (that is, a network; does it use a web services model?) or is it a "warehouse" type of effort? • How is the speciesbank supported monetarily (as reported on the site itself)? • What are its expectations for longevity of the speciesbank on the Web (as reported on the site iteself)? • Types of data / information included? Images, research data, etc. • Does the database link directly into digital library materials automatically or just provide the links? • Who are the intended users? • How many users do you currently have? • What other impact are you aware of?	FishBase is a large information system with key information for all fishes of the world: summaries, photos, and maps plus detailed standardized data on population dynamics, reproduction, trophic ecology, morphology, physiology genetics and other topics. FishBase is supported and supervised by a consortium of currently 8 international institutes and organizations (see www.fishbase.org/home.htm). Data encoding and programming is done mostly by a group of specialists in the Philippines. However, there are also over 1000 partners all over the world who contribute photos and data and check entries for accuracy. FishBase is available for free in monthly online updates and also on CD ROM and DVDs for a modest fee. In response to the bullet points: - FishBase is fully dynamic. - FishBase is a hybrid of central core data maintained by a team of 15 encoders; plus copies of databases maintained by others and updated about once per year in FishBase; plus XML access to some collection database (integrated on the fly with FishBase data); plus deep-links into other databases such as Genbank. - Scientific supervision as well as the coordinator position are provided by Consortium members on a permanent basis. Data encoding still depends on project funds; a sponsorship model and unobtrusive advertising are currently investigated. - FishBase is for ever. - Types of data are described above. An effort is made to present scientific data in a format that is understandable by lay persons or even children (e.g. in our biodiversity quiz). - As explained above we provide species-level deep-links into other databases as well as XML requests for data residing in other databases and which are then integrated with our own data on the fly. We also have an 'important links' page. Users can attach their own web pages to FishBase species pages or upload observations and photos (FishWatcher) or participate in discussions (FishForum). - The intended users were fisheries managers in developing countries. These now are a small (but still important) minority. Most users are laypersons. Second most are students. The rest are various specialists. - FishBase receives currently (January 2005) over 10 million hits per month from over 600,000 visits by over 240,000 unique visitors. We expect usage to double within the next 24 months. - FishBase has over 100 citations in the Science Citation Index, including several citations in *Science* and *Nature*. We are aware of altogether 681 citations (January 2005) in publications. Google finds 8,940 pages that contain links to FishBase (includes FishBase pages).

Name, Institution and Country:	**LESLIE HONEY** NatureServe, United States
A short paragraph about yourself. Please include a brief statement of your area of expertise and why you are interested in speciesbanks on the Web.	I manage NatureServe's dynamic web offerings with our goal being to provide worldwide access to species and ecological communities information collected and managed by NatureServe and its member programs. NatureServe is eager to participate in planning and implementing standards and protocols for linking information from many sources providing seekers of this information easy access to critical biodiversity information.
Name of your project:	NatureServe Explorer InfoNatura
Project URL:	www.natureserve.org/explorer www.natureserve.org/infonatura

Description of the project (please include information on the following):
  • Is the speciesbank a dynamic database or a collection of static pages?
  • Is the speciesbank a collaborative effort among databasers at different sites (that is, a network; does it use a web services model?) or is it a "warehouse" type of effort?
  • How is the speciesbank supported monetarily (as reported on the site itself)?
  • What are its expectations for longevity of the speciesbank on the Web (as reported on the site iteself)?
  • Types of data / information included? Images, research data, etc.
  • Does the database link directly into digital library materials automatically or just provide the links?
  • Who are the intended users?
	The NatureServe Explorer website provides conservation information in a searchable database for more than 55,000 plants, animals, and ecological communities in the United States and Canada. InfoNatura is the sister site to NatureServe Explorer for information on more than 6,000 birds, mammals, and amphibians of Latin America and the Caribbean. Currently both sites pull information from a central database that houses information developed by NatureServe scientists and information from our network of member programs operating throughout the United States, in 11 provinces and territories of Canada, and in 10 countries and territories of Latin America and the Caribbean. NatureServe is currently working on a project scheduled to be completed by the summer of 2007 to improve the currency of information accessed online by electronically confederating the distributed network of member program biodiversity databases. The technology framework will use XML Web Services as a programmatic interface among four distinct technology layers: a gateway site, an enterprise geodatabase, an authentication/access control subsystem, and the distributed local databases.
	
	The sites are supported by a number of different sources interested either in having the biodiversity data easily accessible or sources interested in furthering our technology development. These sites are an important product of NatureServe and will be maintained indefinitely.
	
	The types of information found on the sites include conservation status, taxonomy, life history and habitat requirements, threats and trends, management strategies, state/country distribution information, range maps, and species images.
	
	Users of the sites include conservationists, academic researchers, landowners and land managers, developers, students and teachers as well as the general public.

Name, Institution and Country:	**PATRICIA KOLEFF** Conabio, Mexico
A short paragraph about yourself. Please include a brief statement of your area of expertise and why you are interested in speciesbanks on the Web.	Patricia Koleff has worked in biodiversity data management since 1994 in Conabio. She was in charge of data quality control and coordination of Conabio's web page content from 1996, to 1999 when she went to the University of Sheffield to do her PhD studies. She has research interest in the study of patterns and processes of species distribution. Since 2002 is working again in Conabio in charge of Taxonomic Authority Files, Data Repatriation, Gap Analysis, REMIB (The World Information Network on Biodiversity), and providing information from the Biodiversity Information System of Mexico (SNIB) to government –to support sound decision making, academia and the general public. She is interested in data base standards, in increasing species data and making it available. The Speciesbank on the web is going to be very useful tool to make accessible data to all kind of users.
Name of your project:	National Biodiversity Information System Taxonomic Authority Files Units of Species' Basic Information
Project URL:	www.conabio.gob.mx www.conabio.gob.mx/informacion/catalogo_autoridades/doctos/electronicas.html www.conabio.gob.mx/conocimiento/ise/fichas/doctos/introduccion.html
Description of the project (please include information on the following): • Is the speciesbank a dynamic database or a collection of static pages? • Is the speciesbank a collaborative effort among databasers at different sites (that is, a network; does it use a web services model?) or is it a "warehouse" type of effort? • How is the speciesbank supported monetarily (as reported on the site itself)? • What are its expectations for longevity of the speciesbank on the Web (as reported on the site iteself)? • Types of data / information included? Images, research data, etc. • Does the database link directly into digital library materials automatically or just provide the links? • Who are the intended users?	CONABIO is an Inter-Ministerial Commission mainly dedicated to: conform and keep updated the National System of Biodiversity Information (SNIB); support the generation and integration of data, information and knowledge to help decision making regarding the conservation and sustainable use of biodiversity; advise governmental institutions and other sectors. SNIB consists in specimen databases (ca. 600) from national and foreign collections that hold Mexican specimens. Many of the databases are already available through REMIB (ca. 7,000,000 specimen data available). We are going to make specimen images available soon. A key component are taxonomic authority file databases (all nomenclatural information of names valid/synonyms and references). We already have 23 concluded databases of which three are being updated, and 15 more are being developed. All databases are result of a collaborative effort with specialists. As possible, common names –for different languages and regions are integrated. These databases are in Biotica software and are used to integrate information of specimens, species, etc. Databases are available at Conabio's web page in Biotica to download executable files some had already a report from the database, since many users want a printed version (pdf files). Databases are integrated to ITIS-North America, the Integrated Taxonomic Information System where is possible to search on line authoritative taxonomic information on plants, animals, fungi, and microbes of North America and the world. (as a partnership of U.S. and Canada), which in turn is partner of Species 2000 and the Global Biodiversity Information Facility (GBIF). We have stared to develop databases of threatened species (Units of Species' Basic Information), which have nomenclatural, life history, historical and actual distribution, population trends, main risk factors, photos, images, maps, etc. Information is available at Conabio's web page in pdf files, and for each species there is a link to ITIS and REMIB We have different formats since we have a variety of users: decision makers, academia, NGO's, and civil society.

Name, Institution and Country:	**ROY KLEUKERS** Museum Naturalis, Leiden, The Netherlands
A short paragraph about yourself. Please include a brief statement of your area of expertise and why you are interested in speciesbanks on the Web.	My job is the management of the bureau of the European Invertebrate Survey - NL at Naturalis. Our main goal is to collect data on Dutch invertebrates and make the information available. Up till now we have published our results in the traditional way, in books and magazines. By building a species bank we think we can reach a much larger audience for our species lists, distribution maps, photo's and texts. A recent project concerns a validated database with taxonomic names concerning the Dutch biodiversity.
Name of your project:	The Dutch Species Register
Project URL:	none yet
Description of the project (please include information on the following): • Is the speciesbank a dynamic database or a collection of static pages? • Is the speciesbank a collaborative effort among databasers at different sites (that is, a network; does it use a web services model?) or is it a "warehouse" type of effort? • How is the speciesbank supported monetarily (as reported on the site itself)? • What are its expectations for longevity of the speciesbank on the Web (as reported on the site iteself)? • Types of data / information included? Images, research data, etc. • Does the database link directly into digital library materials automatically or just provide the links? • Who are the intended users?	The Dutch Species Register is a dynamic database. In Decemb re 2004 we finished a first version, containing circa 65% (30.000) of the Dutch species, with extensive source material. We are now looking for possibilities to adjust and update the database. We want to get the database online as soon as possible, preferably attaching additional information (photo's, distribution maps). For now the data are stored in one database. The database is funded by the Ministry of Agriculture, Nature Conservation and Food Quality, Museum Naturalis and EIS-NL. We collaborate with the Central Bureau of Fungus Cultures, Dutch National Herbarium and Zoological Museum Amsterdam and lots of amateur naturalists. We intend to bring the database to the internet, and keep it available for as long as possible. The intended user group is q uite broad. Researchers, policy makers and those concerned with nature conservation, but we see also possibilities to serve the general public through the existing channels of Museum Naturalis.

Name, Institution and Country:	**ROEL LEMMENS** PROTA Foundation, The Netherlands
A short paragraph about yourself. Please include a brief statement of your area of expertise and why you are interested in speciesbanks on the Web.	I am a plant taxonomist with a long history as editor in PROSEA, the sister programme of PROTA for South-East Asia, and now general editor for PROTA. Speciesbanks on the Web are important for comparing data for the PROTA articles.
Name of your project:	PROTA (Plant Resources of Tropical Africa)
Project URL:	www.prota.org
Description of the project (please include information on the following): • Is the speciesbank a dynamic database or a collection of static pages? • Is the speciesbank a collaborative effort among databasers at different sites (that is, a network; does it use a web services model?) or is it a "warehouse" type of effort? • How is the speciesbank supported monetarily (as reported on the site itself)? • What are its expectations for longevity of the speciesbank on the Web (as reported on the site iteself)? • Types of data / information included? Images, research data, etc. • Does the database link directly into digital library materials automatically or just provide the links? • Who are the intended users?	Our speciesbank Protabase with ultimately 7,000 review articles of useful plants of tropical Africa: • is a collection of static pages in English and French • is a data warehouse type of effort • provide links to digital library materials. Protabase is montarily supported by the European Commission, Netherlands Ministry of Agriculture, Nature management and Fisheries, Netherlands Ministry of Foreign Affairs, Wageningen University. As for longevity of the speciesbank, the PROTA Foundation has been foreseen to be a permanent organization. The review articles (in English and French) include images, distribution maps and linedrawings. Direct beneficiaries of the PROTA products are people engaged in the fields of agriculture, forestry, horticulture and botany, e.g. students, teachers, researchers, extension workers and industrial producers. The indirect beneficiaries are people depending directly on the plant resources, mainly farmers, but also workers in village industries. PROTA will collaborate with rural development organisations to produce relevant derived products.

Name, Institution and Country:	**JOSÉ MIGUEL LÓPEZ-CORONADO** Spanish Type Culture Collection (CECT). SPAIN
A short paragraph about yourself. Please include a brief statement of your area of expertise and why you are interested in speciesbanks on the Web.	I'm in charge of the bioinformatic section of the CECT. I made my PhD on Biochemistry and I've been working at the CECT for six years, organizing and publishing the CECT strains databases on the web. I think that having an up to date reference for all the known species names that could be serched using web services would be the best solution for all the people working with microorganisms and also animals and plants.
Name of your project:	Spanish Type Culture Collection (CECT)
Project URL:	www.cect.org

Description of the project (please include information on the following):
  • Is the speciesbank a dynamic database or a collection of static pages?
  • Is the speciesbank a collaborative effort among databasers at different sites (that is, a network; does it use a web services model?) or is it a "warehouse" type of effort?
  • How is the speciesbank supported monetarily (as reported on the site itself)?
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  • Types of data / information included? Images, research data, etc.
  • Does the database link directly into digital library materials automatically or just provide the links?
  • Who are the intended users?
	In the CECT, we have a catalogue for all the strains maintained here. This catalogue can be browsed and searched through the web. Our databases are updated by the CECT staff according with the most recent publications on the species names.
	 As our speciesbank belongs to the CECT, it is supported by the CECT funds and it is linked to the permanence of the CECT itself.
	 By the moment we offer throught the web all the data we known in the CECT about the strains: growing conditions and media, history of the strain, the number it has in other culture collection, pathogenicity, risk group, the tests that the strain is used for, etc. We are trying to increment the stored data for each strain, including graphical material.
	 Our main users are public and private laboratories that use our strains as reference material for their quality control assays and for research. They are also used in teaching laboratories.

Name, Institution and Country:	**DAVID SCHINDEL / SCOTT MILLER** Smithsonian Institution, USA
A short paragraph about yourself. Please include a brief statement of your area of expertise and why you are interested in speciesbanks on the Web.	Executive Secretary of an international consortium of museums, herbaria, and biodiversity research organizations, promoting the use of short gene sequences ("DNA barcodes") as diagnostic species characters.
Name of your project:	Consortium for the Barcode of Life
Project URL:	www.barcoding.si.edu
Description of the project (please include information on the following): • Is the speciesbank a dynamic database or a collection of static pages? • Is the speciesbank a collaborative effort among databasers at different sites (that is, a network; does it use a web services model?) or is it a "warehouse" type of effort? • How is the speciesbank supported monetarily (as reported on the site itself)? • What are its expectations for longevity of the speciesbank on the Web (as reported on the site iteself)? • Types of data / information included? Images, research data, etc. • Does the database link directly into digital library materials automatically or just provide the links? • Who are the intended users?	The Consortium for the Barcode of Life (CBOL) has worked with the NIH National Center for Biotechnology Information (NCBI) to establish a Barcode Section of GenBank (BSG). Strictly speaking, this is a database of specimens, each of which is tied to a short gene sequence and a species name. As its contents grow, it will become, de facto, a repository of species information. We are exploring ways of using GBIF data resources for linking to specimens and species' names. BSG is a public repository for DNA Barcode data hosted by NCBI. NCBI has created a public submission tool for data entry. The direct costs of operating BSG are borne by NCBI. CBOL is exploring ways of curatin g the database to ensure high quality standards. BSG has no finite lifespan as of now. Data contents are a gene sequence, sequencer trace file and quality scores, links to literature citation, species name and specimen ID. The literature link is the same one used by all GenBank submissions. Intended users are taxonomists, regulatory agencies, and others who need to identify specimens to species level.

Name, Institution and Country:	**ULI MÜLLER** geOps GeoInformatics, Germany
A short paragraph about yourself. Please include a brief statement of your area of expertise and why you are interested in speciesbanks on the Web.	After my studies of forestry at the university of Freiburg I have been focussing on the implementation of databases and geographic information systems for use in zoology and epidemiology. My main jobs in this context have been the development and administration of GIS for the Swiss Rabies Centre at the university of Berne and the KORA group that is in charge of large carnivore management and research in Switzerland. Together with the KORA we published our first database accessible through a web mapping client (www.geops.info/korams). Two years ago I started my own business providing solutions for data management, GIS and internet application for the green sector. Current work focusses on the large carnivore species bank described below and landscape connectivity analyses.
Name of your project:	Large Carnivore Clearing House Mechanism (original title in German: "Bundesweite Kommunikationsstrategie Grossraubtiere")
Project URL:	www.carnivora.net (currently no public version available)
Description of the project (please include information on the following): • Is the speciesbank a dynamic database or a collection of static pages? • Is the speciesbank a collaborative effort among databasers at different sites (that is, a network; does it use a web services model?) or is it a "warehouse" type of effort? • How is the speciesbank supported monetarily (as reported on the site itself)? • What are its expectations for longevity of the speciesbank on the Web (as reported on the site iteself)? • Types of data / information included? Images, research data, etc. • Does the database link directly into digital library materials automatically or just provide the links? • Who are the intended users?	The speciesbank will be part of the project "Large Carnivore Clearing House Mechanism" for Germany that is carried out in collaboration among the University of Freiburg, Inst. of Forest Zoology, the German Hunting Association, the European Nature Heritage Fund and the German Federal Agency for Nature Conservation. The project is funded by the Federal Ministry for Environment, Nature Conservation and Nuclear Safety. The whole project aims at promotion and coordination of management strategies between the German states primarily through the provision of high quality information in the form of expertise, ecological data and analyses. The speciesbank will be used to collect, analyze, map and disseminate monitoring data of large carnivores but will be designed to be easily expandable for other species and regions. It will run with a spatially enabled database as the backend. Since several german states already have a database we will provide mechanisms for direct data entry into the database as well as interfaces to databases existing at state level allowing for synchronization of data. For synchronization and for delivery of data to end users we use web services (especially OGC Web Mapping Services). Important aspects of the species bank are the following: • Focus on the geographic origin and precision of data • Mechanisms for online data entry through each participating field worker with support of interactive forms and maps • Fine grained access rights to each data record respecting the intellectual property of the author of each data record • Integrated anaylsis mechanisms like probability of occurrence, habitat suitability or connectivity • Completely built on operating system independent Open Source Software The project started in late 2004 and will run in its first phase until the beginning of 2006. Part of the work during this phase is the design of networks and fundraising to guarantee the longevity of the speciesbank.

Name, Institution and Country:	**MARTIN PULLAN** Royal Botanic Garden Edinburgh, Scotland
A short paragraph about yourself. Please include a brief statement of your area of expertise and why you are interested in speciesbanks on the Web.	For the past decade I have been developing taxonomic databases for the RBGE, including the development of the Prometheus taxonomic model. Part of that work has been the development of a number of family related information portals including sites on the Umbelliferae, Diptercarpaceae and Zingiberaceae. I have also developed a web portal linking the living collection data of a number of botanic gardens. I am currently working on a new database application designed to directly support the day to day running of a flora a project with a view to the direct generation of paper based and electronic outputs thus streamlining the flora writing process. This design will incorporate many of the features of the Prometheus data model.
Name of your project:	Multisite Umbelliferae resource center Zingiberaceae resource center Database of the Dipterocarps of south east Asia ADIAC Diatom image data base DIADIST
Project URL:	rbg-web2.rbge.org.uk/forms/multisite2.html rbg-web2.rbge.org.uk/URC rbg-web2.rbge.org.uk/ZRC/home.html rbg-web2.rbge.org.uk/diptero rbg-web2.rbge.org.uk/ADIAC/db/adiacdb.htm rbg-web2.rbge.org.uk/DIADIST/
Description of the project (please include information on the following): • Is the speciesbank a dynamic database or a collection of static pages? • Is the speciesbank a collaborative effort among databasers at different sites (that is, a network; does it use a web services model?) or is it a "warehouse" type of effort? • How is the speciesbank supported monetarily (as reported on the site itself)? • What are its expectations for longevity of the speciesbank on the Web (as reported on the site iteself)? • Types of data / information included? Images, research data, etc. • Does the database link directly into digital library materials automatically or just provide the links? • Who are the intended users?	• Although I am not sure that any of these projects are strictly a species bank they are nevertheless dynamic online database driven taxonomic resources. They are primary intended for the use of taxonomists providing a wealth of high quality nomenclatural and taxonomic information on the groups covered. Most of the sites also provide access to specimen level data including on the fly distribution mapping and in the case of the Diatom and Desmid resources provide a catalogue of high quality, high resolution images of diatoms. These iconographs have proved to be a valuable identification aid for specialists and non-specialists alike. All the projects are supported as part of the core activities of the RBGE although the initial impetus for the DIATOM and DESMID projects was provided by external grant awards. As such the resources provided are open-ended and have an indefinite commitment from the staff of the RBGE. • Apart from the multisite project all the datasets are curated and managed by a single member of RBGE staff and currently do not involve any external collaborations. The multisite project is a truly federated solution. Each site manages its own data and is responsible for deciding upon the data content of their contribution and for the maintenance of their resource. A deliberate decision was made early on the project not to try and merge data from the various contributors. This was done for two reasons 1) It allows the contributors to develop their own identity within the resource 2) it avoids problems with trying to resolve taxonomic conflicts that may exist between the contributors.

Name, Institution and Country:	**GERHARD RAMBOLD** University of Bayreuth
A short paragraph about yourself. Please include a brief statement of your area of expertise and why you are interested in speciesbanks on the Web.	Long-term experience with managing two speciesbanks providing information about diversity of Ascomycetes (LIAS) and of ecomycorrhizae (DEEMY)
Name of your project:	LIAS; DEEMY
Project URL:	www.lias.net www.deemy.de (hosted at and edited by the Botanische Staatssammlung München, Germany)
Description of the project (please include information on the following): • Is the speciesbank a dynamic database or a collection of static pages? • Is the speciesbank a collaborative effort among databasers at different sites (that is, a network; does it use a web services model?) or is it a "warehouse" type of effort? • How is the speciesbank supported monetarily (as reported on the site itself)? • What are its expectations for longevity of the speciesbank on the Web (as reported on the site iteself)? • Types of data / information included? Images, research data, etc. • Does the database link directly into digital library materials automatically or just provide the links? • Who are the intended users?	The contents of both projects is maintained in the *DiversityWorkbench* database *DiversityDescriptions*; LIAS data via static HTML-pages from database export; DEEMY data are accessible via Coldfusion web interfaces; in addition database access via Java-based client (JDBC) Both databases and the web interface are hitherto located on the same server/ under the same domain; option of decentralized maintenance of taxon-related information (e.g. images) and descriptors (character definitions and illustrations) Prefiously funded by the DFG, subsequently in the frame of GBIF-D Longevity is likely for both projects supposed that a possibility to raise funds for quality control of existing data sets and (coordination of) for further data input is provided Structured descriptive data on morphology, anatomy, chemistry, ecology, and partly distribution (LIASchecklists) Direct linking of the two core databases to other *DiversityWorkbench* database components containing bibliographic information and gazetteers is under construction Professional mycologists and lichenologists working on biodiversity aspects in their fields

Name, Institution and Country:	**HAMISH ROBERTSON** Iziko South African Museum, South Africa
A short paragraph about yourself. Please include a brief statement of your area of expertise and why you are interested in speciesbanks on the Web.	I manage all the animal, palaeontological and geological collections in the Iziko SA Museum. Over quarter of a million accessions have been databased but there is a need to migrate to better software and to mobilise the data onto the web. I used to do database programming in the bad-old dos days. I also study ants and am involved in Antweb (Cal. Academy of Sciences). I also manage a large non-database-driven web site called Biodiversity Explorer, which has proved to be very popular.
Name of your project:	Biodiversity Explorer
Project URL:	www.museums.org.za/bio
Description of the project (please include information on the following): • Is the speciesbank a dynamic database or a collection of static pages? • Is the speciesbank a collaborative effort among databasers at different sites (that is, a network; does it use a web services model?) or is it a "warehouse" type of effort? • How is the speciesbank supported monetarily (as reported on the site itself)? • What are its expectations for longevity of the speciesbank on the Web (as reported on the site iteself)? • Types of data / information included? Images, research data, etc. • Does the database link directly into digital library materials automatically or just provide the links? • Who are the intended users?	**Introduction.** Biodiversity Explorer focuses on the biodiversity that people in southern Africa are likely to encounter around them, from indigenous wild organisms through to those that are exotic or have been domesticated or which are pests or diseases. By focusing on species that are frequently encountered, we are often successful in featuring the organisms that people want to know about. By taking on all biodiversity we are able to hardwire connections (e.g. herbivore – host plant). Species featured well on other web sites are downplayed and appropriate links provided. **Structure**. Biodiversity Explorer is a large web site of static pages. Integrated with this web site are two other web sites: www.figweb.org and www.waspweb.org, both of which are managed by my colleague Simon van Noort. We have developed a stable hierarchical structure so links from search engines are rarely broken. The great strength of static pages is their prominent featuring in search engines. The vast majority of people using Biodiversity Explorer do not enter it via the home page. **Collaboration**. This is an opportunistic collaborative model. **Financial support**. The web site is supported by Iziko Museums. We are also receiving funding from the SA National Research Foundation for developing Hymenoptera pages. There is a need for more financial support for the less scientific, more educational pages. **Longevity**. We will continue developing this site (and its associated sites) indefinitely but will be amenable to other initiatives and participate in wide scale initiatives such as those being instigated by GBIF. The web site is primarily educational whilst species bank database sites tend to be primarily scientific and inaccessible to the general person on the web. We support both types of web sites but would like to see species bank databases developed in a way that makes them friendly, personalised, and accessible to all users. **Types of data**. The focus is on synthesizing data and presenting a story. We subjectively dismiss information we think is irrelevant and confusing but like linking across disciplines. **Intended users**. We try to make the site useful for anyone from school kids through to scientists. We do this by providing information in layers of complexity. We start species pages by giving the scientific name, English name and other southern African names. This is followed by a linked classification that enables users to see the taxonomic hierarchy. This is followed by a headline that says what makes this species special. This is followed by an introduction that tries to put the species in a nutshell. Further more complex data is provided below or on other pages. Scientific references are listed at the bottom of the page. We aim to link research with education so that people can see the connection but not be overwhelmed by the science.

Name, Institution and Country:	**ANNIE SIMPSON** National Biological Information Infrastructure, USA
A short paragraph about yourself. Please include a brief statement of your area of expertise and why you are interested in speciesbanks on the Web.	I'm educated as an entomologist (insect behavior, with field experience in Costa Rican butterfly and wasp population biology) and am close to a second master's degree in library and information science. I have coordinated invasive species information management for the US National Biological Information Infrastructure for 3 years, and as part of my participation in the Global Invasive Species Information Network. I am very interested in standardizing the kinds of information found in species databases and in the complexities of cross walking data fields, to enable combined searches of many databases at once.
Name of your project:	Invasive Species Information Node of the NBII, and Global Invasive Species Information Network (GISIN)
Project URL:	invasivespecies.nbii.gov gisinetwork.org my.nbii.gov

Description of the project (please include information on the following):
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• Is the speciesbank a collaborative effort among databasers at different sites (that is, a network; does it use a web services model?) or is it a "warehouse" type of effort?
• How is the speciesbank supported monetarily (as reported on the site itself)?
• What are its expectations for longevity of the speciesbank on the Web (as reported on the site tself)?
• Types of data / information included? Images, research data, etc.
• Does the database link directly into digital library materials automatically or just provide the links?
• Who are the intended users?
	The GISIN's vision of the global invasive species bank has several different (and hopefully complementary) approaches. NISbase is an interactive portal to simultaneously search portions of its member databases. The Global Invasive Species Database (dealt with in detail by Michael Browne) is a compilation of primary and secondary information on species, with subpages covering ecology, global distribution, management, references, and contacts. The I3N is a distributed system, based at the country level in the Western Hemisphere, with XML output that can be cross searched. The GISIN's soon-to-be developed registry of invasive species information systems will be a catalog of metadata about each DB's content, and will follow a web services model.
	The GISIN is a collaborative effort among databasers at different sites and resulting in different products.
	Monetary support for the GISIN has come through on a project by project basis. So far moneys have come from the US government and the CBD Secretariat, for GISIN-specific products (a catalog of invasive species information systems and the development of an invasive species profile schema). While the various members of the GISIN network may not be assured of long-term viability on the Web, it is expected that the global network and its SpeciesBanks will continue indefinitely (or until replaced by something better that will better present both grandfathered and new information).
	GISIN has suggested minimum data fields for seven different types of databases:
	    Species profile or fact sheet
	    Expertise
	    Specimen
	    Observation
	    Bibliographic
	    Project/research
	    Image/graphics
	At this time the GISIN provides links to its partner projects. The database registry, when available, will link directly to its own library.
	The intended users are GISIN members and anyone interested in accessing and comparing invasive species information.

Name, Institution and Country:	**BENT SKOVMAND** Nordic Gene Bank
A short paragraph about yourself. Please include a brief statement of your area of expertise and why you are interested in speciesbanks on the Web.	
Name of your project:	SESTO
Project URL:	www.ngb.se/sesto/
Description of the project (please include information on the following): • Is the speciesbank a dynamic database or a collection of static pages? • Is the speciesbank a collaborative effort among databasers at different sites (that is, a network; does it use a web services model?) or is it a "warehouse" type of effort? • How is the speciesbank supported monetarily (as reported on the site itself)? • What are its expectations for longevity of the speciesbank on the Web (as reported on the site iteself)? • Types of data / information included? Images, research data, etc. • Does the database link directly into digital library materials automatically or just provide the links? • Who are the intended users?	PGR documentation system for the Nordic Gene Bank and Nordic and Baltic PGR collections. SESTO is dynamic and a collaborative effort on PGR by the Nordic countries. The database is today of the "warehouse" model. An alternative web service model are under development. The funding is long term and stable and not project based. The data relates to genebank management and includes special data on origin, descriptive information about botanical traits and characters of interest for economic exploitation, images, source people and institutes. The online catalogue is linked to various other relevant databases. The intended users are the public, scientists, breeders and political decision makers.

Name, Institution and Country:	**ANDI TAN** PROTA Foundation, The Netherlands
A short paragraph about yourself. Please include a brief statement of your area of expertise and why you are interested in speciesbanks on the Web.	Databank manager of Protabase. Exchange of experiences in different speciesbanks in order to improve Protabase.
Name of your project:	PROTA (Plant Resources of Tropical Africa)
Project URL:	www.prota.org

Description of the project (please include information on the following):
  • Is the speciesbank a dynamic database or a collection of static pages?
  • Is the speciesbank a collaborative effort among databasers at different sites (that is, a network; does it use a web services model?) or is it a "warehouse" type of effort?
  • How is the speciesbank supported monetarily (as reported on the site itself)?
  • What are its expectations for longevity of the speciesbank on the Web (as reported on the site iteself)?
  • Types of data / information included? Images, research data, etc.
  • Does the database link directly into digital library materials automatically or just provide the links?
  • Who are the intended users?
	Our speciesbank Protabase with ultimately 7,000 review articles of useful plants of tropical Africa:
	  • is a collection of static pages in English and French
	  • is a data warehouse type of effort
	  • provide links to digital library materials.
	
	Protabase is montarily supported by the European Commission, Netherlands Ministry of Agriculture, Nature management and Fisheries, Netherlands Ministry of Foreign Affairs, Wageningen University.
	
	As for longevity of the speciesbank, the PROTA Foundation has been foreseen to be a permanent organization.
	
	The review articles (in English and French) include images, distribution maps and linedrawings.
	
	Direct beneficiaries of the PROTA products are people engaged in the fields of agriculture, forestry, horticulture and botany, e.g. students, teachers, researchers, extension workers and industrial producers. The indirect beneficiaries are people depending directly on the plant resources, mainly farmers, but also workers in village industries. PROTA will collaborate with rural development organisations to produce relevant derived products.

Name, Institution and Country:	**MARK WATSON** Royal Botanic Garden Edinburgh, Scotland
A short paragraph about yourself. Please include a brief statement of your area of expertise and why you are interested in speciesbanks on the Web.	My research area encompasses floristics (focused mainly on the Sino-Himalaya: Flora of China, Flora of Bhutan, Flora of Nepal), plant systematics (primarily the Umbelliferae) and biodiversity informatics. I am particularly interested in IT solutions to data acquisition, storage and presentation for floristics and monographic research. I have been involved in the development of taxonomic databases at RBGE and websites serving these data to the taxonomic community. I was involved in the development of the Prometheus taxonomic model and in current work incorporating this into a new database applications at RBGE. In recent years I have become interested in the challenges of presenting taxonomic data to a broader user base, including non-specialist and the general public. Such interface issues have been investigated in the later stages of the BioCASE project, and form the basis of our work on the SYNTHESYS project.
Name of your project:	Umbelliferae Resource Center Flora of Nepal: Darwin Initiative Capacity Building Project Flora of China Prometheus I & II BioCASE &SYNTHESYS
Project URL:	www.umbellifers.com rbg-web2.rbge.org.uk/nepal/darwin flora.huh.harvard.edu/china www.prometheusdb.org
Description of the project (please include information on the following): • Is the speciesbank a dynamic database or a collection of static pages? • Is the speciesbank a collaborative effort among databasers at different sites (that is, a network; does it use a web services model?) or is it a "warehouse" type of effort? • How is the speciesbank supported monetarily (as reported on the site itself)? • What are its expectations for longevity of the speciesbank on the Web (as reported on the site iteself)? • Types of data / information included? Images, research data, etc. • Does the database link directly into digital library materials automatically or just provide the links? • Who are the intended users?	The most fully functional speciesbank project is the Umbellifer website. This includes nomenclatural and classification data on the family worldwide (under Taxonomic Data). This is generated dynamically from a database. A prototype on-line flora to the Flora of Bhutan Umbellifer account is also available (rbg-web2.rbge.org.uk/URC/bhutanumbels). This uses mainly static pages, but the specimen-level data (listings and distribution maps) are generated dynamically from the database. The Umbellifer website is entirely a RBGE project without external collaborators. The database is maintained and updated as part of my research with help of a few colleagues: as such it is supported by our institution. The speciesbank is hosted on the RBGE webserver and it is expected to always be available. Currently the data are mainly high-quality technical nomenclature, classification and specimen data (few images). It is intended for specialist audience, although some non-specialists do use it.

Name, Institution and Country:	**ANNA L. WEITZMAN** Biologia Centrali Americana, USA
A short paragraph about yourself. Please include a brief statement of your area of expertise and why you are interested in speciesbanks on the Web.	I am working botanist taxonomist. I am a member of the US Delegation to the GBIF governing board, and attendee at all previous GBIF Scientific STAG meetings. I now head the informatics program at the National Museum of Natural History, Smithsonian Institution. I am involved in the Encyclopedia of Life project at the Smithsonian, I am one of the scientific leaders (with Chris Lyal of NHM, London, chair of GBIF's ECAT subcommittee) of the *Biologia Centrali-Americana* project (including the co-designer of an XML schema for taxonomic literature), an active member of DIGIT subcommittee and the database group of the Consortium on the Barcode of Life, etc. I am involved in a variety of TDWG groups on standards for names, concepts, taxonomic literature, ABCD, etc.
Name of your project:	*Biologia Centrali-Americana* Centennial (BCAC) project
Project URL:	www.sil.si.edu/DigitalCollections/bca/

Description of the project (please include information on the following):
• Is the speciesbank a dynamic database or a collection of static pages?
• Is the speciesbank a collaborative effort among databasers at different sites (that is, a network; does it use a web services model?) or is it a "warehouse" type of effort?
• How is the speciesbank supported monetarily (as reported on the site itself)?
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• Types of data / information included? Images, research data, etc.
• Does the database link directly into digital library materials automatically or just provide the links?
• Who are the intended users?
	The BCAC project is one of the pieces of the overall structure that we believe are needed to create the seamlessly interoperable biodiversity web space. While we are not creating a speciesbank per se, we are working toward a larger, interoperable, system that will incorporate many data providers using web services. Our vision of this includes taxonomic names data, specimen data, data from all existing literature to be made freely available digitally, images, descriptive data and all other related data. We are heavily involved in TDWG standards in order to assure that this interoperability among diverse data is possible. The intent is to make sure that all relevant biodiversity data are available in perpetuity, adding to them and evolving with technology.
	    So far the funding for BCAC is only funding the EBCA. The funding has come from a Smithsonian Institution endowment for republication of published scientific materials. EBCA currently contains all of the digitized pages of the 56 biological volumes of the BCA. We are working toward turning that corpus into a searchable database that can link directly to the specimens cited, literature cited, images, other treatments of the species, etc.
	    Because we envision so many ways to view the information encompassing what is known about biodiversity, the intended users include taxonomists, ecologists, conservation biologists, policy makers, the general public, including students, etc.

Name, Institution and Country:	**RICHARD J. WHITE** School of Computer Science, Cardiff University, UK
A short paragraph about yourself. Please include a brief statement of your area of expertise and why you are interested in speciesbanks on the Web.	I trained as a biologist but have always been involved with the application of computers. My research is in biodiversity informatics, and focusses on the modelling, handling and analysis of species diversity data. Challenging aspects such as subjective nomenclature and classification and complex descriptive data cause difficulties in handling biodiversity data. With colleagues in Cardiff, Reading, Kew, etc., I work on the interoperability of biological information systems, in which my earlier work designing and implementing species databases has led to current projects (Species 2000 and ILDIS below, also Litchi and Biodiversity World) addressing technical and data quality issues in order to build federated global species information systems, and to design systems to make these resources available in problem-solving environments or workbenches.
Name of your project:	Species2000 ILDIS (International Legume Database and Information Service)
Project URL:	www.sp2000.org www.ildis.org
Description of the project (please include information on the following): • Is the speciesbank a dynamic database or a collection of static pages? • Is the speciesbank a collaborative effort among databasers at different sites (that is, a network; does it use a web services model?) or is it a "warehouse" type of effort? • How is the speciesbank supported monetarily (as reported on the site itself)? • What are its expectations for longevity of the speciesbank on the Web (as reported on the site iteself)? • Types of data / information included? Images, research data, etc. • Does the database link directly into digital library materials automatically or just provide the links? • Who are the intended users?	Species 2000 is a portal to a distributed array of independent species databases, and reflects their species content dynamically. It is a collaboration of members, many of whom are database providers, with a project coordinating team. Financial support is derived primarily from the institutions of members and by associated research projects that develop or use its facilities. It has been under development for ten years and expects to be substantially complete by 2011. Data consist of names and synonyms, taxonomic hierarchy, common names, optional geographical distribution, and links to further information. Users include anyone who needs reliable species names and check-lists, including taxonomists, ecologists, conservers and exploiters of biodiversity, legislators, value-added portals, etc. ILDIS is a dynamic database – it is currently edited on stand-alone PCs with regular conversions to a MySQL server-based database, which supports both dynamically generated web pages and an indexed and cross-referenced set of static pages. It is based on a network of collaborators, but is currently edited at a single site; we are actively exploring ways to introduce distributed editing. Financial support is derived from the institutions of members, associated research projects, publications and a small grant from GBIF. It is approaching its 20th anniversary and expects to continue for many years. The data is fairly basic – nomenclature, common names, distribution by countries and states, habitats for some species, uses, and bibliography – but images and dynamic species links to other data sources are being assembled for inclusion. Users include taxonomists, ecologists, conservationists, scientists interested in organisms which interact with legumes, students and amateur enthusiasts, and portals such as Species 2000.

Name, Institution and Country:	**SUZANNE I BOARDMAN** Wildlife Information Network/Twycross Zoo
A short paragraph about yourself. Please include a brief statement of your area of expertise and why you are interested in speciesbanks on the Web.	A zoo and wildlife veterinarian who undertook responsibility for biological systems analysis to develop a species based information system. In April 2004, became the Director of Twycross Zoo - East Midland Zoological Society: a Zoo in the UK with approximately 1,000 animals and over 470,000 visitors per annum. Between 1991 and 2004, founded the Wildlife Information Network in 1992, a registered charity, which aims to provide information on the health and management of wildlife and their habitats, and emerging infectious diseases. Together with my co-author Dr Josh Dein of the National Wildlife Health Center, United States Department of the Interior, researched, designed and developed the **Wildpro Data Management System**, an Electronic Encyclopaedia which disseminates this information to decision-makers worldwide and is available on the Web and on CD-ROMs. The Wildlife Information Network is now an internationally recognised organisation, with members in over 30 countries on five continents.
Name of your project:	Wildpro - an electronic encyclopaedia and library providing information on the health and management of captive and free-ranging wild animals and their habitats, and emerging infectious diseases
Project URL:	www.wildlifeinformation.org (access available from Feb 22 to end March **username: GBIF password: gbif** [case-sensitive])
Description of the project (please include information on the following): • Is the speciesbank a dynamic database or a collection of static pages? • Is the speciesbank a collaborative effort among databasers at different sites (that is, a network; does it use a web services model?) or is it a "warehouse" type of effort? • How is the speciesbank supported monetarily (as reported on the site itself)? • What are its expectations for longevity of the speciesbank on the Web (as reported on the site iteself)? • Types of data / information included? Images, research data, etc. • Does the database link directly into digital library materials automatically or just provide the links? • Who are the intended users?	This speciesbank information is a collection of static pages produced as volumes that are revised and updated. The encyclopaedia is fully referenced and refereed and data is currently uploaded manually by our researchers to maintain integrity - "warehouse" type (I presume). Individual Volumes of the Wildpro Encyclopaedia and Library are funded by grant-giving bodies; access is provided to "members" of the Wildlife Information Network either through paid subscriptions or through nomination for our Outreach programme - providing access free to those who need the information but could not otherwise afford a paid subscription. The Wildpro Encyclopaedia and Library is a living and expanding information source that is added to and updated each time a new volume is available or section is updated. Digital library materials are available directly. Intended users are wildlife professionals and decision-makers worldwide who need rapid access to information on the health and management of wildlife and emergin infectious diseases.

Name, Institution and Country:	**JORGE BRENNER** Coastal Management Group, Universitat Politècnica de Catalunya, Barcelona, Spain
A short paragraph about yourself. Please include a brief statement of your area of expertise and why you are interested in speciesbanks on the Web.	Currently I am working on my PhD on Coastal Management. My thesis is on coastal environmental state indicators and scenarios for sustainable development. I have worked using biodiversity as conservation and state indicators for some time now. My interest on biodiversity informatics respond to the need to find more efficient ways to use biodiversity as a key component of any management plan whose goal is sustainability.
Name of your project:	1) Coastal-marine resilience and fish communities; 2) "Coastal-marine environmental science and technology" blog *; and 3) marine biodiversity spatial data model.
Project URL:	* our-oceans.blogspot.com/
Description of the project (please include information on the following): • Is the speciesbank a dynamic database or a collection of static pages? • Is the speciesbank a collaborative effort among databasers at different sites (that is, a network; does it use a web services model?) or is it a "warehouse" type of effort? • How is the speciesbank supported monetarily (as reported on the site itself)? • What are its expectations for longevity of the speciesbank on the Web (as reported on the site iteself)? • Types of data / information included? Images, research data, etc. • Does the database link directly into digital library materials automatically or just provide the links? • Who are the intended users?	3) Marine biodiversity spatial data model. Objective: to develop a GIS specific data model for the marine biodiversity community. Presently, the web inter-phase is under development. It will be a web service model. So far, it is an academic project developed as part of a national (public) funded project. There is no specific plan for its sustainability on the web. The fish and environmental database includes: fish taxonomy, occurrence, conservation attributes, distribution (if available), sources of other information, and metadata. It provides the citation and link if available. Coastal scientists, managers and scholars.

Name, Institution and Country:	**RÉMY BRUCKERT** MNHN (*Museum Parisiense*), France
A short paragraph about yourself. Please include a brief statement of your area of expertise and why you are interested in speciesbanks on the Web.	Area of expertise : classe *Aves* (Birds). I conceived and realized a relational data base as a tool in ornithological taxonomy and comparative systematics and in birds collection managing.
Name of your project:	OAZO
Project URL:	dsibib.mnhn.fr:8080/reftax2/servlet/ReftaxServlet?baseConf=aves.ini
Description of the project (please include information on the following): • Is the speciesbank a dynamic database or a collection of static pages? • Is the speciesbank a collaborative effort among databasers at different sites (that is, a network; does it use a web services model?) or is it a "warehouse" type of effort? • How is the speciesbank supported monetarily (as reported on the site itself)? • What are its expectations for longevity of the speciesbank on the Web (as reported on the site iteself)? • Types of data / information included? Images, research data, etc. • Does the database link directly into digital library materials automatically or just provide the links? • Who are the intended users?	My species bank is a taxonomic referential *id est* a catalogue of scientific bird names of the world with their bibliographic references (today *circa* 50 000 names are databased). My species bank has two original characteristics : 1) It is a multiple classifications oriented bank : the data base yields for each original name its name and status (if present in the classification : valid or synonym) in the most important classifications of birds (today 5 classifications are databased). 2) It is a type specimens oriented bank : the data base yields for each name, the list of the type specimens (if known) which bear the name. A type specimen is databased in the bank with the 3 following information : its status (holo-, lecto-, syn-, neo-, para-, paralectotype), the museum name where it is located and the number under which it is catalogued in the concerned museum (today, *ca.* 17 000 types are databased). The referential is used in Paris Museum to help in the process of computerising the bird collection (scientific names written on specimens labels are linked with scientific names stored in the referential). It is a "real and true" searchable relational data base of *ca.* 230 Mb developed with the SGBD 4D on platform Mac. It is the result of a one man during five years work.. However, my work benefited of numerous exchanges with different people concerned by birds (museum curators, classification editor,…). I am a reasearcher coming from a medical reasearch institute which pays my salary. My database has been converted recently in an Oracle model, work financed by the french government (to my knowledge, *ca.* 300 000 MF = 46 000 euros) and the web site is located in MNHN. At the beginning of my project, I asked 60 000 F = *ca.* 9 000 euros and recived the half from the environment minister. During the project, I obtained from MNHN two missions to report my work in European symposiums of birds curators (Bonn, 2001 & Leiden, 2003, cf. below). I applied two times to Sys-Resources without success. I applied to ECAT-2004 without success. The life expentancy of my species bank is null. At the beginning of March, my work-contract in MNHN as bird curator is over and I have only a little hope to be able to continue my work. And as you may be know, a data base without manager to care the data is a dead database. But in its present Oracle state, the data base will last on the web as long as the MNHN decision makers will let it available. Intended users are all people concerned by birds taxonomy and systematics, specially of course, the museums birds curators, the systematists involved in avian phylogenies,… Bibliography : Bruckert, 2003 A realtional datbase as a tool in ornithological taxonomy and comparative systematics. Bonn. Zool. Beitr., 51 (2002), Heft 2/3, 197–204. Bruckert, 2005 The MNHN taxonomic referential : state and ongoing developments. Zool. Verh. Leiden, to be published.

Name, Institution and Country:	**YOLAN FRIEDMANN** Endangered Wildlife Trust (EWT), South Africa
A short paragraph about yourself. Please include a brief statement of your area of expertise and why you are interested in speciesbanks on the Web.	The EWT is developing an online national species listing database for use as part of the South Africa's drive to develop comprehensive threatened species lists (determined by the National Environmental Management Biodiversity Act, 2004). The EWT also produced a comprehensive Red Data Book of South African Mammals in 2004 in hard copy and an electronic, searchable database format and the database used in this project (the CAMP database) will be used as the basis for the web-based version of the national species database. This web-based database will allow certified users to input and interrogate data in a transparent, all-inclusive, ongoing basis. The EWT also has experience as a speciesbank user in that we continually engage in development applications and EIAs which require access to relevant species information (distribution, threats, status etc). We would like to learn from other organisations doing similar projects to avoid duplicating errors, fast track the development of such tools and to share ideas.
Name of your project:	CAMP database for species listing
Project URL:	
Description of the project (please include information on the following): • Is the speciesbank a dynamic database or a collection of static pages? • Is the speciesbank a collaborative effort among databasers at different sites (that is, a network; does it use a web services model?) or is it a "warehouse" type of effort? • How is the speciesbank supported monetarily (as reported on the site itself)? • What are its expectations for longevity of the speciesbank on the Web (as reported on the site itself)? • Types of data / information included? Images, research data, etc. • Does the database link directly into digital library materials automatically or just provide the links? • Who are the intended users?	o A dynamic database of species information o The web based version, when fully operational (within about 3 months) will be network based with remote access by a number of users o Initial development funding has been raised. o This database is expected to exist infinitely o Data on research, taxonomy data, population distribution and trends, habitats, threats, conservation status etc. with links to distribution maps. Images will follow in time. o Not at this stage o Conservation planners, development agencies, policy and legislation enforcers, organizations undertaking species listing, academics, general users.

Name, Institution and Country:	**GRAHAM HIGLEY** Natural History Museum, UK
A short paragraph about yourself. Please include a brief statement of your area of expertise and why you are interested in species banks on the Web.	I am Head of Library & Information Services at the NHM. I also lead the EU SYNTHESYS Project that provides access to and networking of 20 EU institutions. One networking activity is about shared database and networking across the partners. My team are actively involved in setting TDWG standards and developing name servers for UK institutions e.g. NBN
Name of your project:	Species Dictionary, Nature Navigator
Project URL:	yaw.nhm.ac.uk/nhm/ www.nhm.ac.uk/naturenavigator/
Description of the project (please include information on the following): • Is the species bank a dynamic database or a collection of static pages? • Is the species bank a collaborative effort among databasers at different sites (that is, a network; does it use a web services model?) or is it a "warehouse" type of effort? • How is the species bank supported monetarily (as reported on the site itself)? • What are its expectations for longevity of the species bank on the Web (as reported on the site itself)? • Types of data / information included? Images, research data, etc. • Does the database link directly into digital library materials automatically or just provide the links? Who are the intended users?	**Species Dictionary:** • Dynamic • Warehouse • NBN and NHM funds • Integrated into the NBN Web site, it will become a permanent feature of the NBN service and will last as long as that is funded by UK Govt. • Names • Provide the links **Users:** Scientists and amateur naturalists in the UK, some interest from the general public. **Nature Navigator:** • Dynamic • Warehouse • NHM funds • Permanent part of NHM Web site. May be folded into UK nameserver at some point, but will still exist. • Names, brief descriptions, images – UK only • Links directly into digital library materials **Users:** General public and amateur naturalists

Name, Institution and Country:	**CRAIG HILTON-TAYLOR** IUCN – The World Conservation Union, Cambridge office, United Kingdom
A short paragraph about yourself. Please include a brief statement of your area of expertise and why you are interested in speciesbanks on the Web.	I am the Red List Programme Officer for the IUCN and as such am responsible for producing the annual updates of the IUCN Red List of Threatened Species. The Red List is produced from a large and rapidly growing global database and there is clear need for better linkage and integration with other speciesbanks on the web.
Name of your project:	The IUCN Red List of Threatened Species part of the Species Information Service
Project URL:	www.iucnredlist.org
Description of the project (please include information on the following): • Is the speciesbank a dynamic database or a collection of static pages? • Is the speciesbank a collaborative effort among databasers at different sites (that is, a network; does it use a web services model?) or is it a "warehouse" type of effort? • How is the speciesbank supported monetarily (as reported on the site itself)? • What are its expectations for longevity of the speciesbank on the Web (as reported on the site iteself)? • Types of data / information included? Images, research data, etc. • Does the database link directly into digital library materials automatically or just provide the links? • Who are the intended users?	• The IUCN Red List is produced from a version of the Species Information Service, the largest global database on threatened species (we have information on 41,883 taxa of plants and animals). • The database is dynamic in that information is updated on a daily basis, but the public version is only updated annually. We are currently adding 4-5 thousand new species records every year. • The system is a collaborative effort among databasers at different sites. Data is collected at workshops and by individuals around the world through a Data Entry Module and then consolidated centrally. Although we are not yet using a web services model, we are planning to move in that direction for data entry and editing. But the data would still be centralized. So I guess it could be termed a "warehouse" type of effort. • IUCN provides core support for some of our activities and overheads, however, an increasing amount of the operating funds are raised through proposals to external donors. • IUCN has been producing Red Lists since the early 1960s and started making the information available via the web in 1996. In 2000 we developed a new web interface and have updated this web site annually since then. IUCN is committed to continue doing this into the future and is investing a considerable amount into the further development of the Species Information Service and general knowledge management across the organization • The Red List includes information on the conservation status of both threatened and non-threatened species (where possible, entire taxonomic groups are covered, for example all described mammal, bird and amphibian species), spatial distribution information (the GIS maps are not currently on the Red List web site), plus information on habitats, threats, conservation actions and utilization. The taxonomy used provides the backbone for all the other information. For the taxonomy we prefer to defer to whatever global standards are in use. Although the web site includes a growing photo library, we are not planning to cover all species, but would prefer to link to and support the efforts of ARKive. The system includes several ways of querying the underlying data, but a present there is no easy way of downloading the summary information, this functionality is in development. • The Red List has internal links to additional digital library materials, and many links to external sources (usually deep links direct to the relevant species page on another site). This is an aspect which needs further development. • The intended users are primarily the conservationists, scientists, other conservation NGOs and environmental planners (essentially a scientific audience). However, in reality we have found that the Red List users are a very wide group ranging from the general public including school children and students, through to the mass media, scientists and conservationists, conservation NGOs, developers, planners, policy makers and governments. In other words all sectors of society. This poses a challenge in making a web-based speciesbank meaningful and useful for such a wide audience.

Name, Institution and Country:	**CHRISTOPHER J. MARSHALL** Field Museum Natural History, Chicago Il, USA
A short paragraph about yourself. Please include a brief statement of your area of expertise and why you are interested in speciesbanks on the Web.	I am a systematic entomologist, specializing in scarab beetle systematics and biogeography. I am interested in Speciesbanks on the web because I see this as both a necessary portal for biological data access, but also as a means to fa cilitate taxonomic and biodiversity research globally.
Name of your project:	Dung beetles of the Southwestern Amazon
Project URL:	
Description of the project (please include information on the following): • Is the speciesbank a dynamic database or a collection of static pages? • Is the speciesbank a collaborative effort among databasers at different sites (that is, a network; does it use a web services model?) or is it a "warehouse" type of effort? • How is the speciesbank supported monetarily (as reported on the site itself)? • What are its expectations for longevity of the speciesbank on the Web (as reported on the site iteself)? • Types of data / information included? Images, research data, etc. • Does the database link directly into digital library materials automatically or just provide the links? • Who are the intended users?	This project will create online resources consisting of digital images, collection data and biological information related to the regional dung beetle fauna of the southwestern amazon reg ion. The taxonomy of many of these genera is poorly known and as a result, many of the species are currently identified to morpho-species only. A project such as species-bank could facilitate the identification of such morphospecies – either as examples of previously named species or as 'new species'. The project is still at its infancy, but consists of over 20,000 specimen records and 1200 digital images for the approximately 400 species. There are no URL associated with this database yet, but this is being undertaken.

Name, Institution and Country:	**MARÍA MORA** Instituto Nacional de Biodiversidad (INBio), Costa Rica
A short paragraph about yourself. Please include a brief statement of your area of expertise and why you are interested in speciesbanks on the Web.	María Mora. Software Engineer and Database Administrator at INBio. For the last eleven years she has been involved in the development of information systems for the Biodiversity Inventory and Bioprospecting programs. As such, she has been part of the development team of *Atta* and in charge of the Costa Rican SpeciesBank development process. Mrs. Mora has been the leader, manager and one of the developers of Costa Rica's GBIF node, she is one of the current vice-chair of the NODES committee and she was in charge of the "How to become a GBIF data provider" course for Latin American node managers. She has experience in computer technologies like Pattern Recognition, Neural Network, Operating Systems, Databases, information systems and web technology.
Name of your project:	Species of Costa Rica.
Project URL:	darnis.inbio.ac.cr/ubisen
Description of the project (please include information on the following): • Is the speciesbank a dynamic database or a collection of static pages? • Is the speciesbank a collaborative effort among databasers at different sites (that is, a network; does it use a web services model?) or is it a "warehouse" type of effort? • How is the speciesbank supported monetarily (as reported on the site itself)? • What are its expectations for longevity of the speciesbank on the Web (as reported on the site iteself)? • Types of data / information included? Images, research data, etc. • Does the database link directly into digital library materials automatically or just provide the links? • Who are the intended users?	*Atta* is an information system that supports the core information process at the National Biodiversity Institute in Costa Rica (INBio). As such, *Atta* facilitates the processes of capturing, managing, generating and disseminating information on Costa Rican biodiversity. It manages information at the specimen/observation, species, and ecosystem level. In 1999, a digital publishing system was implemented to manage species level information. By using this system, national and international collaborators are able to use the web in order to submit species descriptions. The scientific information is presented in a simple technical language and it is intended for the general public. The specimen, species and ecosystem information can be consulted at the INBio's web site (www.inbio.ac.cr) using dynamic databases. We are not using a web service model yet. All the information is manage inside INBio's databases and it is displayed directly from the database. We update the information available for the web users every night. Each species web page may include the following sections: Natural history, Conservation and demography, Distribution, Taxonomic information, General information, and Other. **Species of Costa Rica Module**, some features: The system includes simple but strict procedures that guarantee the quality of the published information. These procedures are supported by four web modules that allow the efficient processing of the information: Image information module, Species information modul, Visualization module, and the GIS module. Integration with ecosystem, specimen and bibliographic information: The species, ecosystems and specimens information produced and gathered by INBio is integrated through a search mechanism, which allows end users to query specimen data and to obtain additional information of the ecosystems related to their gathering sites and the species used in their taxonomic identification. This search module may be accessed at: atta.inbio.ac.cr. The specimen database has around 3 million records. INBio is working with the Organization for Tropical Studies (OTS) in the integration of bibliographical references to taxonomical literature (using DiGIR and Dublin Core) with the species/specimen information (using DiGIR and Darwin Core). The information is available at databases of INBio and OTS. Species information available: The database has 3,205 published species records of the following groups: Amphibians (167*), spiders and scorpions (33), birds (860*), fungi (149), insects (586), mammals (234*), mollusks (169), nematodes (9), plants (777) and reptiles (221*) * 100% out of the amount of species estimated for Costa Rica. The Costa Rican SpeciesBank is supported monetarily with INBio's normal budget that comes from diverse sources and we plan to continue with the project for long time. We are developing a new version of the species information module that will be more flexible and easier to integrate with other biodiversity information sources.

Name, Institution and Country:	SHUBHADA NAGARKAR Bioinformatics Center, University of Pune, Pune, India
A short paragraph about yourself. Please include a brief statement of your area of expertise and why you are interested in speciesbanks on the Web.	• I am working as a librarian in the Bioinformatics center, University of Pune, Pune. India. I am pursuing my PhD in Biodiversity informatics. As part of my study I am working on development of a prototype database for Indian fungal species. The research is interdisciplinary. Keeping this in mind I am conducting a survey of information needs of mycologists, which will enable me to design a "request-oriented" database. Therefore I am designing a database useful for multiple users ranging from graduate students to expert mycologists. Database will have very basic fields necessary for morphological identification. So I am interested in understanding about geographically distributed species bank on the web and the construction of their databases. • I am also involved in teaching activities. I teach NBII metadata tool - SMMS to post-graduate and Advance diploma in Bioinformatics students of the center. I also deliver lectures in Department of Botany and Department of Library science on metadata. The focus of the current workshop is on data and metadata standards. This session will help me to get acquainted with the international scenario in this area. • In developing countries like India, scientists especially biodiversity scientists are not very much familiar with computer databases, metadata, etc. The basic need is to document the species level information by these scientists during their fieldwork. This will help to catalogue Indian biota in electronic format with certain degree of authenticity. Hence this workshop would highly beneficial to me not only in carrying out my research but is also of a great relevance as an information scientist.
Name of your project:	Design of a prototype database for Indian fungal species
Project URL:	
Description of the project (please include information on the following): • Is the speciesbank a dynamic database or a collection of static pages? • Is the speciesbank a collaborative effort among databasers at different sites (that is, a network; does it use a web services model?) or is it a "warehouse" type of effort? • How is the speciesbank supported monetarily (as reported on the site itself)? • What are its expectations for longevity of the speciesbank on the Web (as reported on the site iteself)? • Types of data / information included? Images, research data, etc. • Does the database link directly into digital library materials automatically or just provide the links? • Who are the intended users?	

Name, Institution and Country:	**NIGEL ROBINSON** Thomson Zoological Ltd (Zoological Record), UK
A short paragraph about yourself. Please include a brief statement of your area of expertise and why you are interested in speciesbanks on the Web.	I have been involved with taxonomic name and literature data for many years through the compilation of *Zoological Record* , and its related name bank/nomenclator *Index to Organism Names* which now contains over 1.5 million animal names taken from the literature of 1970 onwards. I am now hoping to expand the coverage of the web based nomenclator and link to other resources within and outside the Thomson organization
Name of your project:	Index to Organism Names (ION)
Project URL:	www.biosis.org.uk/ion

Description of the project (please include information on the following):
  • Is the speciesbank a dynamic database or a collection of static pages?
  • Is the speciesbank a collaborative effort among databasers at different sites (that is, a network; does it use a web services model?) or is it a "warehouse" type of effort?
  • How is the speciesbank supported monetarily (as reported on the site itself)?
  • What are its expectations for longevity of the speciesbank on the Web (as reported on the site iteself)?
  • Types of data / information included? Images, research data, etc.
  • Does the database link directly into digital library materials automatically or just provide the links?
  • Who are the intended users?
	The *Index to Organism Names* is a dynamic database containing over 1.5 million animal names of all taxonomic ranks gathered from the literature indexed in *Zoological Record*. Through a GBIF sponsored project to extract and digitize data from copies of *Zoological Record* hitherto available only in print, the index now covers the literature from 1970 onwards. We hope to extend the coverage back to Volume 1 (1864) of *Zoological Record* later this year.
	
	The data is currently searchable by CGI script, but will soon be interoperably accessible via web services and the Species 2000 SPICE model and will be available to the GBIF network. All work outside the GBIF funding is supported by Thomson Scientific. At present the database serves the name, authorship, standardized taxonomic hierarchy, and counts of occurrence in the literature; it is hoped to extend this to link through to the wealth of taxonomic and biodiversity literature within the *Zoological Record* citation database, with corresponding links to full text articles, using the extensive Thomson links technologies.
	
	The database is updated monthly with names extracted from each monthly update to the *Zoological Record* electronic citation database, and will continue this way going forward.
	
	The users of the database are anyone looking to validate the spelling of a name, check for homonyms, gain a classification, verify the phylum or class to which a name belongs, or to check the existence of a name and its usage. This would include both taxonomists and non taxonomists.

Name, Institution and Country:	**SABINE ROSCHER** ZADI, Germany
A short paragraph about yourself. Please include a brief statement of your area of expertise and why you are interested in speciesbanks on the Web.	Information Centre Biological Diversity IT-group coordinator Expertise: Biodiverstiy Informatics, GIS, Genetic Resources We develop and use speciesbanks for our national programmes on agricultural biological diversity
Name of your project:	TGRDEU, XGRDEU, EDDA
Project URL:	www.genres.de/tgrdeu/ www.genres.de/xgrdeu-en.htm
Description of the project (please include information on the following): • Is the speciesbank a dynamic database or a collection of static pages? • Is the speciesbank a collaborative effort among databasers at different sites (that is, a network; does it use a web services model?) or is it a "warehouse" type of effort? • How is the speciesbank supported monetarily (as reported on the site itself)? • What are its expectations for longevity of the speciesbank on the Web (as reported on the site iteself)? • Types of data / information included? Images, research data, etc. • Does the database link directly into digital library materials automatically or just provide the links? • Who are the intended users?	The databases are dynamic XGRDEU / TGRDEU databases are warehouses The EDDA database is planned as a network XGRDEU are maintained permanently in the context of our national programme TGRDEU was developed within a project and now is also Maintained permanently within in the context of the national programme for animal genetic resources EDDA is developed during a project. Now we are looking for partners to continue the work on a global level. Data are descriptions, evaluation and charactersisation data, statistics, images, links, stakeholders, ... Links are provided, in parts with identifiers for accessions Users are researches, economy, politics, education, interested public

Name, Institution and Country:	**JUNKO SHIMURA** National Institute for Environmental Studies, Japan
A short paragraph about yourself. Please include a brief statement of your area of expertise and why you are interested in speciesbanks on the Web.	GTI National Focal Point for Japan Development of database for bacterial names, GBIF data provider for specimens information in Japan and EASIANET. Interested in possible uses of speciesbanks in the context of convention of biological diversity
Name of your project:	GTI in Japan and Asia Oceania Region
Project URL:	www.gti.nies.go.jp
Description of the project (please include information on the following): • Is the speciesbank a dynamic database or a collection of static pages? • Is the speciesbank a collaborative effort among databasers at different sites (that is, a network; does it use a web services model?) or is it a "warehouse" type of effort? • How is the speciesbank supported monetarily (as reported on the site itself)? • What are its expectations for longevity of the speciesbank on the Web (as reported on the site iteself)? • Types of data / information included? Images, research data, etc. • Does the database link directly into digital library materials automatically or just provide the links? • Who are the intended users?	GTI Japan is coordinating possible data providers for the speciesbank firstly in Japan and potently in Asia Pacific region. "Bird Research" has been developing a tool to collect bird watchers' image files, observation data with geographical mapping system. Collected information is checked by the experts in birds and reviewed data (not all) are stored in the backend database. "Flora of Japan" has been developing names and specimen information with high resolution images of pressed specimens kept in university museums in Japan. These projects are supported by competitive research grants/funds. Expectation of publisher's support for the use of data provided by the database developers. Types of data: "Bird Research" provides species occurrence data in long term monitoring at selected sites in Japan. Species image file. "Flora of Japan" provides names, synonyms, specimen images, locality, Intended users are : researchers in ecology and taxonomy, conservation specialists and general public

Name, Institution and Country:	**DANIEL SOMMA** National Parks (Parques Nacionales), Argentina
A short paragraph about yourself. Please include a brief statement of your area of expertise and why you are interested in speciesbanks on the Web.	I`m currently working as General Coordinator of the Biodiversity Information System (BIS). My background is in Geographic Information Systems applied to Biodiversity Conservation. I want to exchange experiences about BIS developments.
Name of your project:	Biodiversity Information System (Sistema de Informaciòn de Biodiversidad: SIB)
Project URL:	www.parquesnacionales.gov.ar
Description of the project (please include information on the following): - Is the speciesbank a dynamic database or a collection of static pages? - Is the speciesbank a collaborative effort among databasers at different sites (that is, a network; does it use a web services model?) or is it a "warehouse" type of effort? - How is the speciesbank supported monetarily (as reported on the site itself)? - What are its expectations for longevity of the speciesbank on the Web (as reported on the site iteself)? - Types of data / information included? Images, research data, etc. - Does the database link directly into digital library materials automatically or just provide the links? - Who are the intended users?	- Our system with the periodic updating isn´t showing "automatically" the new data entried. Some analysis and checkings are performed, then, all the data is showed in the external interphase (the tables available for users, an SQL platform). Therefore, we have an intermediate stage: it isn´t a set of static pages but the day by day data entry operations aren´t directly reflected in the external interphase. - We are trying to reshape our BIS from a institution centered development view to a network – cooperative oriented one integrating our developments with other biodiversity institutions (scientific centers, universities, etc) from Argentina. - GEF funded project. - It`ll be a component of the National Parks structure itself.</li><li>Observations, research data, geographic data of the protected areas, etc.</li><li>Just provide the references.</li><li>National Parks staff, biodiversity researchers, decision makers, general public. It`s the intention. We are very critic of the current limitations of the system.

Name, Institution and Country:	**WOLFGANG STERRER** Bermuda Natural History Museum, Bermuda
A short paragraph about yourself. Please include a brief statement of your area of expertise and why you are interested in speciesbanks on the Web.	As a marine biologist I have developed a regional, all-taxa "Bermuda Biodiversity Database", and a global database on the worm phylum Gnathostomulida. I am interested in how to get them onto the web, updates, user input, standardization, links etc.
Name of your project:	1. Bermuda Biodiversity Database (not on web yet) 2. Gnathostomulida (with ETI/Linnaeus)
Project URL:	devbio.umesci.maine.edu/styler/globalworming/
Description of the project (please include information on the following): • Is the speciesbank a dynamic database or a collection of static pages? • Is the speciesbank a collaborative effort among databasers at different sites (that is, a network; does it use a web services model?) or is it a "warehouse" type of effort? • How is the speciesbank supported monetarily (as reported on the site itself)? • What are its expectations for longevity of the speciesbank on the Web (as reported on the site iteself)? • Types of data / information included? Images, research data, etc. • Does the database link directly into digital library materials automatically or just provide the links? • Who are the intended users?	1. The Bermuda Biodiversity Database(BBD) is dynamic, consisting of Species (with Bermuda-related Synonymy) linked to Images, Bibliography, People, and Institutions. It currently contains some 6,000 species (plants and animals, marine and terrestrial), some 4,000 bibliographic references, and 15,000 images (mostly in color slide form, some scanned). BBD links to citations of printed materials but not to digital libraries. We anticipate BBD to be primarily maintained and used locally, by Bermuda government and NGOs, but become accessible via the Bermuda Aquarium's website. It is supported by the Bermuda Aquarium, Museum and Zoo, and the Bermuda Zoological Society, who also support the website on which BBD will be made accessible. 2. The Gnathostomulida Database (GD) is on a University of Maine website maintained by Dr. Seth Tyler. It is a global listing of taxa in the phylum Gnathostomulida. It is also being developed as an ETI Database in Linnaeus II.

Name, Institution and Country:	**MICHAEL R. WILSON** National Museum of Wales, Cardiff, Wales, UK
A short paragraph about yourself. Please include a brief statement of your area of expertise and why you are interested in speciesbanks on the Web.	I am an entomologist specialising on the taxonomy and biology of Hemiptera Auchenorrhyncha (leafhoppers, planthoppers, treehoppers etc). I am especially interested in speciesbanks on the web as a way of accumulating information about groups of insects derived from a wide range of sources, which will serve as an identification and information source that will be widely available to those who neither access to specimen collections or libraries
Name of your project:	Imaging the World's sharpshooters (Hemiptera: Cicadellidae)
Project URL:	None at present: project started Oct 2004.
Description of the project (please include information on the following): • Is the speciesbank a dynamic database or a collection of static pages? • Is the speciesbank a collaborative effort among databasers at different sites (that is, a network; does it use a web services model?) or is it a "warehouse" type of effort? • How is the speciesbank supported monetarily (as reported on the site itself)? • What are its expectations for longevity of the speciesbank on the Web (as reported on the site iteself)? • Types of data / information included? Images, research data, etc. • Does the database link directly into digital library materials automatically or just provide the links? • Who are the intended users?	Imaging the world's sharpshooters **Digital Imaging of the world genera of the sharpshooters (Hemiptera: Cicadellidae subfamily Cicadellinae)** A 2 year project funded by the The Leverhulme Trust Leafhoppers (Hemiptera Cicadellidae) are perhaps among the most abundant group of insects within the Hemiptera. Around 20,000 species have been described but estimates of species suggest 100,000 species may exist. Few comprehensive identification keys to species are available. The subfamily Cicadellinae, was monographed on a world basis by David Young (North Carolina State University, Raleigh) in 3 remarkable taxonomic volumes (1968 – 1986). The Cicadellinae contain among the very largest leafhoppers, up to 2cm long and many are brightly coloured. They are a predominantly tropical group, especially so in the Neotropics. The group feeds from plant xylem tissue and some are known vectors of the xylem-limited bacterium *Xylella fastidiosa*, a very serious condition which causes the death of citrus trees in Brazil and also recently to grapevines in California. Around 370 genera and 3100 species were included in Young's monographic treatments. Collections in many museums, especially in the South American countries often contain large numbers of unidentified specimens, but without any access to the volumes and no specialist to interpret the keys. **Objectives:** To provide high quality digital images of the world's leafhoppers of the subfamily Cicadellinae based upon the taxonomic monographs of David Young published between 1968-1986. **Outputs** Interactive web-based key to allow world genera and species to be recognised. The web-based keys are likely to be based on Lucid3. The intended users will be specialists as well as anyone who wishes to identify or research these insects. Illustrated hand books to the genera and species will also be produced.

Participant Contacts

Bob	Allkin	r.allkin@rbgkew.org.uk
Jacob	Asiedu	kasiedu@cs.umb.edu
Jim	Beach	beach@ku.edu
Julia	Benavides	jebenavides@humboldt.org.co
Jonathan	Bennett	j.bennett@nhm.ac.uk
Suzanne (Suzie)	Boardman	sboardman@wildlifeinformation.org
Kobie	Brand	brandt@nbi.ac.za
Sheila	Brands	sheila.brands@utxs.com
Jorge	Brenner	jorge.brenner@upc.edu
Daniel (Dan)	Brooks	dbrooks@zoo.utoronto.ca
Michael	Browne	m.browne@auckland.ac.nz
Rémy	Bruckert	bruckert@mnhn.fr
Dora	Canhos	dora@cria.org.br
Enrique	Castro	ecastro@sloth.ots.ac.cr
Vishwas	Chavan	vishwas@ems.ncl.res.in
Simon	Claus	simon.claus@vliz.be
Willem	Coetzer	w.coetzer@ru.ac.za
Nancy	Copley	ncopley@whoi.edu
Fabio	Corsi	corsi@itc.nl
Yde	de Jong	yjong@science.uva.nl
Camiel	Dijkers	camiel.dijkers@aquasense.nl
Willem	Ferguson	jwhferguson@zoology.up.ac.za
Yolan	Friedmann	cbsgsa@wol.co.za
Rainer	Froese	rfroese@ifm.uni-kiel.de
Gregor	Hagedorn	g.hagedorn@bba.de
Graham	Higley	g.higley@nhm.ac.uk
Craig	Hilton-Taylor	craig.hilton-taylor@ssc-uk.org
Leslie	Honey	leslie_honey@natureserve.org
Andrew	Jones	Andrew.CJones@cs.cardiff.ac.uk
Roy	Kleukers	Kleukers@naturalis.nl
Patricia	Koleff	pkoleff@xolo.conabio.gob.mx

Roel	Lemmens	roel.lemmens@wur.nl
Jose Miguel	Lopez-Coronado	jmlopez@cect.org
Christopher (Chris)	Marshall	cm13@cornell.edu
Scott	Miller	millers@si.edu
Maria	Mora	mmora@inbio.ac.cr
Robert (Bob)	Morris	ram@cs.umb.edu
Uli	Müller	uli.mueller@geops.de
Shubhada	Nagarkar	shubha@bioinfo.ernet.in
Richard	Ostler	ros@ceh.ac.uk
Martin	Pullan	m.pullan@rbge.org.uk
Marjorie	Pyoos	Marjorie.Pyoos@dst.gov.za
Gerhard	Rambold	gerhard.rambold@uni-bayreuth.de
Robert J. (Bob)	Robbins	rrobbins@fhcrc.org
Hamish	Robertson	hrobertson@iziko.org.za
Nigel	Robinson	nigel.robinson@thomson.com
Sabine	Roscher	roscher@zadi.de
Steve	Shattuck	steve.shattuck@csiro.au
Junko	Shimura	junko@nies.go.jp
Annie	Simpson	asimpson@usgs.gov
Bent	Skovmand	bent@ngb.se
Daniel	Somma	djsomma@yahoo.com.ar
Wolfgang	Sterrer	westerrer@gov.bm
Alberto	Talaván	talavan@gbif.es
Andi	Tan	andi.tan@wur.nl
Kevin	Thiele	k.thiele@cbit.uq.edu.au
Mark	Watson	m.watson@rbge.org.uk
Anna	Weitzman	weitzman@si.edu
Richard	White	r.j.white@cs.cf.ac.uk
Michael (Mike)	Wilson	mike.wilson@nmgw.ac.uk