EWG. GENERAL
8
LOG

EWG-GENERAL 8.1.1.\ LOG\ STATUS CHART\ VER.1 AK, SP \ 13-7-2000
EWG-GENERAL 8.1.2 \ LOG \ STATUS CHART\ VER.2, AK, SP \ 17.7.2000
EWG- GENERAL 8.1.3 \LOG\ STATUS CHART\ VER.3, AK, SP & BCIL\25-7.2000
EWG - GENERAL 8.1.4\ LOG\ STATUS CHART\ VER. 4, AK, SP\ 2-8.2000
EWG - General 8.1.5 \ Log \ Status chart \ Ver.5 AK SP \ 24.8.2000
EWG - GENERAL 8.1.6 \ Log \ Status Chart \ Ver. 6 AK, SP, BT \ 4.9.2000
EWG - GENERAL 8.2.1 \ LOG \ STATUS OF SENT MOUS & DDs \ VER.1, BCIL \ 2.9.2000
EWG - General 8.1.8 \ log \ status chart \ ver 8, AK, SP, BT \ 14.10.2000
EWG - General 8.1.9 \ log \ status chart \ ver 9, AK, SP, BT, BCIL \ 30.10.2000
EWG - General 8.1.10 \ log \ status chart \ ver. 10. BCIL \ 25.11.2000
EWG -
EWG - General 8.1.12 \ log \ status chart \ ver.12 BCIL, AK \ 8.12.2000
EWG - General 8.1.13 \ log \ status chart \ ver. 13 BCIL \ 12.12.2000
EWG - General 8.1.14 \ log \ status chart \ ver. 14, SP \ 26.1.2001
EWG - General 8.1.15 \ log \ status chart \ ver. 15, KK \ 26.3.01.
EWG - General 8.1.16 \ log \ status chart \ ver. 16, KC, KK \ 11.5.01
EWG - General 8.1.17 \ log \ status chart \ ver. 17, KC, KK, BCIL, 20.7.01
EWG - General 8.1.18 \ log \
EWG - General 8.1.19 \ log \ status chart \ ver 19, BCIL, KC, KK, AK, 26.8.01
EWG - General 8.1.20 \ log \ status chart \ ver. 20, BCIL, KK, KC, AK, SP \ 25.10.01
EWG - General 8.1.21 \ log \ status chart \ ver. 21, SP, 28.12.01
EWG - General 8.1.22 \ log \ status chart \ ver. 22 KC, KK \ 22.2.02
EWG - General 8.1.23 \ log \ status chart \ ver. 23, SP \ 3.5.02
EWG - General 8.1.24 \ log \ status chart \ ver. 24, 28.6.02
EWG - General 8.1.25 \ log \ status chart \ ver 25, KS, 22.8.02

Item No. 3.3

Status of EWGs as on 3rd May 2002

S. No	Ecoregion	Name of nodal agency/coordinator	Status reg meetings	Minutes received	Further progress made towards formulation of SAP (Pl. describe)	First progress report received	Remarks
1.	Aravallis	VD Sharma, Paryavan Prahari, Jaipur	6.11.00, First meeting; Series of village meetings; 20. 4.01 EWG meeting 15.4.02 EWG meeting to discuss draft	Yes Yes (few)	- Data collection in villages with the help of questionnaires followed by meetings in some of the villages. - Secondary data collated. - Second installment released. -Links established with relevant EAs. - Second installment released First draft received, comments sent by Kohli, Kothari. -2nd draft received. Comments sent by Kohli.	Yes	Recommended for final sanction by Kohli. Letter to be sent to MoEF.
2.	Central Forest Belt	Dilip Gode, VNCS, Nagpur	18.9.00, First meeting; 20.3. 00, EWG Meeting, Nagpur; 21.7.01 & 22.7.01, Nagpur; 28.7.01 & 28.7.01, Chandrapur; 11.8.01, meeting with NGO forum, Fetri; 10.8.01 & 118. 01, Jagdalpur; 25.8.01 & 26.8.01, Jagdalpur 27.8.01, Press Meet, Jagdalpur; 9.9.01, Nagpur 15.9.01, Press Meet,	Yes	- Meetings with various stakeholders organised. - Special efforts to involve the government officials and politicians - Several village level consultations with the help of students. - Second installment and additional grant of Rs. 50,000 released - **1st draft** received.	Yes	MoEF has issued a letter to the Chief Sec. Maharashtra other relevant officials regarding cooperation with the EWG. This was as per the request of the co-ordinator Draft sent to Madhu Ramnath for reviewing, as well as to Bharat Bhushan. Rathore will review this towards the end of May.

			Nagpur 16.01.02 to 18.01.02, Meeting				
3.	East Coast	L. Kannan, Annamalai University, Parrangipettai	24.2.01, Inaugural workshop; 31.9.01, Boat Rally at Parangipettai along with a public hearing with the fisherfolk and a cultural fete. 12.11.01, Kakinanda 28.11.01, Gopalpur	Yes Yes Yes	- Information collection started with the help of post graduate students; - Co-ordinator has requested his colleagues to contribute to the BSAP. - Initial set of action points discussed between coordinator and TPCG coordinator - Second installment released - Draft action points received, comments sent by Kothari and Wafar - **1st draft** received end March	Yes	Wafar has gone through the report and found that suggestions made at the Southern Regional Workshop have not been incorporated. Comments to be sent.
4.	Eastern Ghats	T. Pullaiah, Sri Krishna Devaraja University, Ananthpur	2.12.01 & 3.11.01, Inaugural workshop 17.4.01, Nellore	Yes	- Responsibilities allocated for preparing sector wise SAPs covering plant, animal, agriculture and cultural diversity. - Region wise SAPs preparation allocations made. - Co-ordinator has broadcast talks in Telugu (NBSAP) on Radio. - Second installment released - **First draft received**, comments sent by Kothari. - Reminder for second draft sent. Coordinator responded on 26.4.02 saying it would be sent very soon.	Yes	Draft strong in Wild Plants section, but other sections need attention.
5.	Gangetic plains	Jamal Khan, Wildlife Society of India	22.3.01, First Meeting 26.6.01 & 27.6.01, Patna	Yes Yes	- Information to be collected from peer reviewed publications, reports/ dissertations/thesis (published / unpublished), individuals, organisations, govt.	Yes	There was a delay s due to the lack of response from some of the members suggested by the TPCG initially.

					departments, working plans, management plans, gazetteers etc, and media. - Specific themes identified and responsibilities allocated. Drafts were to be received by 31.7.01. Status paper on Gangetic biodiversity received. Co-ordinator has sent a reminder to others. - Second installment released. - SAP for Herpetofauna received, Kothari sent comments, revised paper submitted by author **- First draft received-** Chellam has given comments to co-ordinator in person.		The EWG members decided to exclude West Bengal and Orissa from the scope of work of the EWG. Copy of the draft has been sent to the Bihar co-ordinator for comments. Needs urgent follow up
6.	North-East India	R.S.Tripathi, NEHU, Shillong	29.5.01, Shillong	Yes	- Collection of baseline information begun. - Focal areas of work identified and listed in progress report. - Core drafting team formed, next meeting in January '02 - Key action points presented at the NE regional workshop. - SAP chapter received - Coordinator has been sent CD of drafts received from other EAs from the north east. Bhattacharjee met the coordinator on 10.4.02. He promised to send the draft soon.	Yes	The cause of delay was a problem with the MoU. NEEDS URGENT FOLLOW UP.
7.	Shiwaliks	H.S.Mehta, ZSI, Solan	29.1.01,First meeting; 7.2.0.1; 1.6.01, Jammu	Yes	- Tasks allocated to EWG members. - Proposed workshop in Jammu in December, postponed	Yes	Comments to be sent by Sharma

					- **1st draft** received in March 02. - 2nd installment released		
8	West Coast	M.N.Madhyastha, Mangalore University, Mangalore	26.8.00, First meeting 30.9.00; 24.3.01; 28.4.01; 18.8.01, Malpe 15.10.2001: meeting on coastal biodiversity organised in Goa, with Goa state Nodal agency. 6.11.2001, Bhavnagar 22.02.02 & 23.02.02 meeting at Kochi	Yes	- Brainstorming sessions with various stakeholders (fisherfolk, govt. officials) have been held. - Second installment released. - First draft received, comments sent by Kohli and Wafar - **2nd draft received**, comments sent by Wafar on 12.3.02. - Partial third installment released on special request by coordinator	Yes	
9	Western Himalaya	S.P.Singh, Kumaon University, Nainital	2.12.01 & 3.12.01 First meeting; 29.9.01 & 30.9.01, Nainital	Yes	- Responsibilities allocated to members who have conducted further interactions - Gap analysis is being done - Special focus on Kashmir Valley to make up for lack of J&K inputs - BSAP is being drafted - Comments on Progress report sent by Bhatt - SAP chapter received-comments sent by Kothari - Full SAP chapter received on 25.2.02 - 2nd installment released - Reminder for full draft sent on 3.5.02	Yes	
10.	Western Ghats	Ranjit Daniels, Chennai Snake Park, Chennai	15.9.01First meeting; 12.10.00; 4.11.00;	Yes	- Questionnaires distributed; Concept notes and checklists/data on vertebrates prepared &	Yes	

			2.8.01; (Regional meetings also held.		circulated. - Tasks allocated for region wise preparation of action points. - Second installment released. - Draft action plan submitted, comments sent by Kothari - **Revised BSAP submitted**, comments sent by Kothari, Shankar		

LIST OF BSAP DRAFTS RECEIVED FROM ECOREGIONS (as on 6.5.2001)

S. No.	Ecoregion	Received 1st draft, date	Commented on, by whom	Comments sent, date	Received 2nd draft, date	Commented on, by whom	Comments sent, date
1.	ARAVALLI	Yes, Nov 7th, 01	KK AK	Nov '01 22.12.2001	Yes	KK	10.4.02
2.	CENTRAL FOREST BELT	Yes 10.4.02					
3.	EAST COAST	Yes, Actions chapter Yes, revised actions chapter, 8.3.02 Yes, full draft end March	AK, Wafar	29.12.2001 &11.1.02	Yes, May 2002		
4.	EASTERN GHATS	Yes, October, 2001	AK	Nov '01	Yes, early April		
5.	GANGETIC PLAINS	Yes, Nov 29th 01	Chellam	To send (Sent prelim. comments)			
6.	NORTH EAST INDIA	Actions chapter recd. 22.12.01					
7.	SHIWALIKS	Yes, March 02					
8.	WEST COAST	Yes, Nov 28th 01	KK Wafar	Dec 20th 01 17.1.02	Yes	Wafar	12.3.02
9.	WESTERN GHATS	Yes	AK	Sept/Oct '01	Yes	DS	12.1.02
10.	WEST HIMALAYAS	Action points: 1st set 2nd set Full SAP chapter 25.2.02	AK AK, SB	Jan 2002 29.1.02			

Logs

Comments to be sent | Urgent follow-up | Peer review | Send to MoEF

Yes

AK/BMS — Madhu Ramnath

MUM

PVS

RC — AK W. Sivan

PCB — PCB

VS (in a week)

JATREE

MS — VS/AK

INTEGRATED DECISIONS AND SYSTEMS (INDIA) PVT LTD
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No. : **CPPP/679** Dated : **13-Jul-2001**

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Through :	
PETTY CASH-ON HAND	
On Account of :	
BEING CASH PAID TO SKYLARK EXPRESS AGAINST BILL NO. 15844 & 15845 FOR COURIER FOR S.R. GOYAL & CO. - JAIPUR AND PAGE POINT SERVICES.	
Amount (in words) :	
Rs. Fifty Seven Only	**57.00**

Receiver's Signature

Authorised Signatory

Item No. 3.3

Status of EWGs as on 22nd February 2002

S. No	Ecoregion	Name of nodal agency/coordinator	Status reg meetings	Minutes received	Further progress made towards formulation of SAP (Pl. describe)	First progress report received	Remarks
1.	Aravallis	VD Sharma, Paryavan Prahari, Jaipur	6.11.00, First meeting; Series of village meetings; 20. 4.01 EWG meeting	Yes Yes (few)	- Data collection in villages with the help of questionnaires followed by meetings in some of the villages. - Secondary data collated. - Second installment released. -Links established with relevant EAs. - Second installment released **First draft received**, comments sent by Kohli, Kothari. Draft being revised.	Yes	
2.	Central Forest Belt	Dilip Gode, VNCS, Nagpur	18.9.00, First meeting; 20.3. 00, EWG Meeting, Nagpur; 21.7.01 & 22.7.01, Nagpur; 28.7.01 & 28.7.01, Chandrapur; 11.8.01, meeting with NGO forum, Fetri; 10.8.01 & 118. 01, Jagdalpur; 25.8.01 & 26.8.01, Jagdalpur 27.8.01, Press Meet, Jagdalpur; 9.9.01, Nagpur 15.9.01, Press Meet, Nagpur	Yes	- Meetings with various stakeholders organised. - Special efforts to involve the government officials and politicians - Several village level consultations with the help of students. - Second installment and additional grant of Rs. 50,000 released - BSAP is being drafted, was to be ready by January '02. Reminder has been sent.	Yes	MoEF has issued a letter to the Chief Sec. Maharashtra other relevant officials regarding cooperation with the EWG. This was as per the request of the co-ordinator NEEDS URGENT FOLLOW UP

AK to follow up

			16.01.02 to 18.01.02, Meeting				
3.	East Coast	L. Kannan, Annamalai University, Parrangipettai	24.2.01, Inaugural workshop; 31.9.01, Boat Rally at Parangipettai along with a public hearing with the fisherfolk and a cultural fete. 12.11.01, Kakinanda 28.11.01, Gopalpur	Yes Yes Yes	- Information collection started with the help of post graduate students; - Co-ordinator has requested his colleagues to contribute to the BSAP. - Initial set of action points discussed between coordinator and TPCG coordinator - Second installment released - Draft action points received, comments sent by Kothari and Wafar - First draft to be ready in mid March '02.	Yes	Wafar to pursue
4.	Eastern Ghats	T. Pullaiah, Sri Krishna Devaraja University, Ananthpur	2.12.01 & 3.11.01, Inaugural workshop 17.4.01, Nellore	Yes	- Responsibilities allocated for preparing sector wise SAPs covering plant, animal, agriculture and cultural diversity. - Region wise SAPs preparation allocations made. - Co-ordinator has broadcast talks in Telugu (NBSAP) on Radio. - Second installment released - **First draft received**, comments sent by Kothari.	Yes	Draft strong in Wild Plants section, but other sections need attention. A meeting has been planned for 2 and 3rd March 2002 to finalize the Draft BSAP — Satheesh to pursue
5.	Gangetic plains	Jamal Khan, Wildlife Society of India	22.3.01, First Meeting 26.6.01 & 27.6.01, Patna	Yes Yes	- Information to be collected from peer reviewed publications, reports/ dissertations/thesis (published / unpublished), individuals, organisations, govt. departments, working plans, management plans, gazetteers etc, and media. - Specific themes identified and	Yes	There was a delay s due to the lack of response from some of the members suggested by the TPCG initially. The EWG members decided to exclude West Bengal and Orissa from

					responsibilities allocated. Drafts were to be received by 31.7.01. Status paper on Gangetic biodiversity received. Co-ordinator has sent a reminder to others. - Second installment released. - SAP for Herpetofauna received, Kothari sent comments, revised paper submitted by author - **First draft received-** Chellam has given comments to co-ordinator in person.	Is in Gir - Ravi to contact him mid-March	the scope of work of the EWG. Copy of the draft has been sent to the Bihar co-ordinator for comments/use
6.	North-East India	R.S.Tripathi, NEHU, Shillong	29.5.01, Shillong	Yes	- Collection of baseline information begun. - Focal areas of work identified and listed in progress report. - Core drafting team formed, next meeting in January '02 - Key action points presented at the NE regional workshop. - SAP chapter received	Yes	The cause of delay was a problem with the MoU. Coordinator was awaiting reports from N-E states, has been told to proceed independently of these NEEDS URGENT FOLLOW UP.
7.	Shiwaliks	H.S.Mehta, ZSI, Solan	29.1.01,First meeting; 7.2.0.1; 1.6.01, Jammu	Yes	- Tasks allocated to EWG members. - Proposed workshop in Jammu in December, postponed Draft rec'd. Virender to review	Yes	Draft requested by mid-November. Kothari spoke to him and had promise to submit draft by January end. Sharma is meeting Mehta on 23.2.02 at Shimla
8	West Coast	M.N.Madhyastha, Mangalore University, Mangalore	26.8.00, First meeting 30.9.00; 24.3.01; 28.4.01; 18.8.01, Malpe 15.10.2001: meeting	Yes	- Brainstorming sessions with various stakeholders (fisherfolk, govt. officials) have been held. - Second installment released. - **First draft received,** comments sent by Kohli and Wafar	Yes	Wafar has followed up with comments and suggestions for draft plan. Draft expected by mid-November after meeting

			on coastal biodiversity organised in Goa, with Goa state Nodal agency. 6.11.2001, Bhavnagar 22.02.02 & 23.02.02 meeting at Kochi			Drafting meet at Kochi in end-feb.	in Gujarat. NEEDS FOLLOW UP AND HELP WITH DRAFTING THE BSAP.
9	Western Himalaya	S.P.Singh, Kumaon University, Nainital	2.12.01 & 3.12.01 First meeting; 29.9.01 & 30.9.01, Nainital	Yes	- Responsibilities allocated to members who have conducted further interactions - Gap analysis is being done - Special focus on Kashmir Valley to make up for lack of J&K inputs - BSAP is being drafted - Comments on Progress report sent by Bhatt - SAP chapter received-comments sent by Kothari	Yes	NEEDS URGENT FOLLOW UP Co-ordinator met with an accident, process slightly delayed. Virinder to follow
10	Western Ghats	Ranjit Daniels, Chennai Snake Park, Chennai	15.9.01First meeting; 12.10.00; 4.11.00; 2.8.01; (Regional meetings also held.	Yes	- Questionnaires distributed; Concept notes and checklists/data on vertebrates prepared & circulated. - Tasks allocated for region wise preparation of action points. - Second installment released. - Draft action plan submitted, comments sent by Kothari - **Revised BSAP submitted**, comments sent by Kothari, Shankar	Yes ?	Changes needed in the final draft submitted. Daniels agreeable to incorporate them. SAP chapter weak

Status of EWGs as on 28th December 2001

S. No	Ecoregion	Name of nodal agency/coordinator	Status reg meetings	Minutes received	Further progress made towards formulation of SAP (Pl. describe)	First progress report received	Remarks
1.	Aravallis	VD Sharma, Paryavan Prahari, Jaipur	6.11.00, First meeting; Series of village meetings; 20. 4.01 EWG meeting	Yes Yes (few)	- Data collection in villages with the help of questionnaires followed by meetings in some of the villages. - Secondary data collated. - Second installment released. -Links established with relevant EAs. - Second installment released **First draft received**, comments sent by Kohli, Kothari. Draft being revised.	Yes	
2.	Central Forest Belt	Dilip Gode, VNCS, Nagpur	18.9.00, First meeting; 20.3. 00, EWG Meeting, Nagpur; 21.7.01 & 22.7.01, Nagpur; 28.7.01 & 28.7.01, Chandrapur; 11.8.01, meeting with NGO forum, Fetri; 10.8.01 & 118. 01, Jagdalpur; 25.8.01 & 26.8.01, Jagdalpur 27.8.01, Press Meet, Jagdalpur; 9.9.01, Nagpur 15.9.01, Press Meet, Nagpur	Yes	- Meetings with various stakeholders organised. - Special efforts to involve the government officials and politicians - Several village level consultations with the help of students. - Second installment and additional grant of Rs. 50,000 released - BSAP is being drafted, to be ready by January '02	Yes	MoEF has issued a letter to the Chief Sec. Maharashtra other relevant officials regarding cooperation with the EWG. This was as per the request of the co-ordinator

3.	East Coast	L. Kannan, Annamalai University, Parrangipettai	24.2.01, Inaugural workshop; 31.9.01, Boat Rally at Parangipettai along with a public hearing with the fisherfolk and a cultural fete. 12.11.01, Kakinada 28.11.01, Gopalpur	Yes Yes Yes	- Information collection started with the help of post graduate students; - Co-ordinator has requested his colleagues to contribute to the BSAP. - Initial set of action points discussed between coordinator and TPCG coordinator - Second installment released - Draft action points received, first draft to be ready in January '02.	Yes	
4.	Eastern Ghats	T. Pullaiah, Sri Krishna Devaraja University, Ananthpur	2.12.01 & 3.11.01, Inaugural workshop 17.4.01, Nellore	Yes	- Responsibilities allocated for preparing sector wise SAPs covering plant, animal, agriculture and cultural diversity. - Region wise SAPs preparation allocations made. - Co-ordinator has broadcast talks in Telugu (NBSAP) on Radio. - Second installment released - **First draft received,** comments sent by Kothari.	Yes — Satheesh to comment	Draft strong in Wild Plants section, but other sections need attention.
5.	Gangetic plains	Jamal Khan, Wildlife Society of India	22.3.01, First Meeting 26.6.01 & 27.6.01, Patna	Yes Yes	- Information to be collected from peer reviewed publications, reports/ dissertations/thesis (published / unpublished), individuals, organisations, govt. departments, working plans, management plans, gazetteers etc, and media. - Specific themes identified and responsibilities allocated. Drafts were to be received by 31.7.01. Status paper on Gangetic biodiversity received. Co-ordinator has sent a reminder to	Yes	There was a delay s due to the lack of response from some of the members suggested by the TPCG initially. The EWG members decided to exclude West Bengal and Orissa from the scope of work of the EWG.

Ravi meeting Jamal on 10th

					others. - Second installment released. - SAP for Herpetofauna received, Kothari sent comments, revised paper submitted by author - **First draft received**		
6.	North-East India	R.S.Tripathi, NEHU, Shillong	29.5.01, Shillong	Yes	- Collection of baseline information begun. - Focal areas of work identified and listed in progress report. - Core drafting team formed, next meeting in January '02 - Key action points presented at the NE regional workshop.	Yes	The cause of delay was a problem with the MoU. Coordinator was awaiting reports from N-E states, has been told to proceed independently of these
7.	Shiwaliks	H.S.Mehta, ZSI, Solan	29.1.01,First meeting; 7.2.0.1; 1.6.01, Jammu	Yes	- Tasks allocated to EWG members. - Proposed workshop in Jammu in December, postponed	Yes	Draft requested by mid-November. **NEEDS URGENT FOLLOW UP**, no news after Northern region workshop Expected 1st week of Jan.
8	West Coast	M.N.Madhyastha, Mangalore University, Mangalore	26.8.00, First meeting 30.9.00; 24.3.01; 28.4.01; 18.8.01, Malpe 15.10.2001: meeting on coastal biodiversity organised in Goa, with Goa state Nodal agency. 6.11.2001, Bhavnagar	Yes	- Brainstorming sessions with various stakeholders (fisherfolk, govt. officials) have been held. - Second installment released. - **First draft received**, comments sent by Kohli	Yes	Wafar has followed up with comments and suggestions for draft plan. Draft expected by mid-November after meeting in Gujarat. **NEEDS FOLLOW UP AND HELP WITH DRAFTING THE BSAP.** Wafar to go to Mangalore
9	Western Himalaya	S.P.Singh, Kumaon University, Nainital	2.12.01 & 3.12.01 First meeting; 29.9.01 & 30.9.01, Nainital	Yes	- Responsibilities allocated to members who have conducted further interactions - Gap analysis is being done	Yes	**NEEDS URGENT FOLLOW UP** Co-ordinator met with an Action pts. have started coming in

					- Special focus on Kashmir Valley to make up for lack of J&K inputs - BSAP is being drafted - Comments on Progress report sent by Bhatt / Comments on action points sent by Kothari		accident, process slightly delayed.
10.	Western Ghats	Ranjit Daniels, Chennai Snake Park, Chennai	15.9.01First meeting; 12.10.00; 4.11.00; 2.8.01; (Regional meetings also held.	Yes	- Questionnaires distributed; Concept notes and checklists/data on vertebrates prepared & circulated. - Tasks allocated for region wise preparation of action points. - Second installment of 25% released. - Draft action plan submitted, comments sent by Kothari - **Final BSAP submitted,** comments sent by Kothari, Shankar	Yes	Changes needed in the final draft submitted. Daniels agreeable to incorporate them. SAP chapter weak

Revised

MC Master

Status of EWGs as on 25th October 2001

S. No	Ecoregion	Name of nodal agency/coordinator	Status reg meetings	Minutes received	Further progress made towards formulation of SAP (Pl. describe)	First progress report received	Remarks
1.	Aravallis	VD Sharma, Paryavan Prahari, Jaipur	6.11.00, First meeting; Series of village meetings; 20. 4.01 EWG meeting	Yes Yes (few)	- Data collection in villages with the help of questionnaires followed by meetings in some of the villages. - Secondary data collated. - Second installment released. -Links established with relevant EAs.	Yes	First draft expected in mid October.
2.	Central Forest Belt	Dilip Gode, VNCS, Nagpur	18.9.00, First meeting; 20.3. 00, EWG Meeting, Nagpur; 21.7.01 & 22.7.01, Nagpur; 28.7.01 & 28.7.01, Chandrapur; 11.8.01, meeting with NGO forum, Fetri; 10.8.01 & 118. 01, Jagdalpur; 25.8.01 & 26.8.01, Jagdalpur 27.8.01, Press Meet, Jagdalpur; 9.9.01, Nagpur 15.9.01, Press Meet, Nagpur	Yes	- Meetings with various stakeholders organised. - Special efforts to involve the government officials and politicians - Several village level consultations with the help of students. - Second installment and additional grant of Rs. 50,000 released - BSAP is being drafted	Yes	MoEF has issued a letter to the Chief Sec. Maharashtra other relavant officials regarding cooperation with the EWG. This was as per the request of the co-ordinator
3.	East Coast	L. Kannan, Annamalai University, Parrangipettai	24.2.01, Inaugural workshop; 31.9.01, Boat Rally at Parangipettai along	Yes	- Information collection started with the help of post graduate students; - Co-ordinator has requested his	Yes	

General pt. of NGO pressure all the time eg from KV, repeated letters, press coverage, WWF BCSP meeting, WWF core group letter, discussions.

The National Consultation of 5th August, 1998

Bansuri: to add- esp the sectorwise views: ie., NE states, NGOs, industry

A draft outline of the bill was circulated to the participants, and comments invited on the same. These comments were presented to a General Body of about 300 persons on the 5th August 1998. Persons present at the meeting opine that while there was not too much progress made on the actual drafting of the bill, there was a fair exchange of ideas at the meeting. The process of consultation has been lauded for the breadth of participation, both of the states and of non-official organisations and interests. Many representatives of industry also took part in the consultation. The revised draft that resulted from this meeting was further sent out for comments to NGOs, by the MoEF itself.

Smaller group est to finalise it!

The processes that went into organisation of this 'National Consultation' were very similar to the earlier one of 10th June, 1997, i.e., a draft of the proposed biodiversity law was widely circulated, and representatives from the Central and State Governments, NGOs, private sector, the media, scientific institutions and academicians were invited. The draft circulated was a slightly modified version of the Swaminathan Committee's draft.

Ministers from North-Eastern States of India expressed some concerns at this consultation regarding the role of local communities in the protection of biodiversity, which is already recognised to a large extent in their state and local level laws, and that the biodiversity law at the national level, by arrogating to the National Authority the power of decision-making on access, should not dilute or vitiate other existing laws. They also felt the structure of the law should be to give concrete powers to the State, while keeping the National Authority as a supervisory authority.

It was also pointed out that the definition of 'biological resources' and of 'knowledge' was inadequate and confusing. Some NGOs and experts pointed out that 'biological resources' should include all plant and germplasm originating in India irrespective of whether they are stored in museums or herbaria within or outside India. Further, it was pointed out that derivatives with chemical alterations during and/or after extraction should not be excluded from the purview of the law, since there was the danger of unchecked use modified Indian germplasm material. Suggestions regarding the kind of export controls that could be imposed were also discussed.

ends where?

Concerns were also expressed about the composition of the National Authority and the scope of its work, and the fact that there were no provisions for local level involvement. Sugegstions for making widespread attempts to document local level knowledge, resources and innovations in the form of biodiversity registers were made.

Concerns were also expressed regarding the fact that elements such as 'right to information' regarding the activities of the authorities constituted, provision for raising objections to the access sought to be sanctioned, etc, should be included.

Lot of disc. on need to regulate domestic access also; to safeguard indig knowledge; to give powers to local bodies

			with a public hearing with the fisherolk and a cultural fete. Meetings planned in November, at Vishakhapatnam, Orissa, and West Bengal		colleagues to contribute to the BSAP. - Public consultations with fisherfolk and other local communities are planned - Initial set of action points discussed between coordinator and TPCG coordinator - Co-ordinator has requested for second installment to be released. - Draft to be sent by mid-November.		
4.	Eastern Ghats	T. Pullaiah, Sri Krishna Devaraja University, Ananthpur	2.12.01 & 3.11.01, Inaugural workshop 17.4.01, Nellore	Yes	- Responsibilities allocated for preparing sector wise SAPs covering plant, animal, agriculture and cultural diversity. - Region wise SAPs preparation allocations made. - Co-ordinator has broadcast talks in Telugu (NBSAP) on Radio. - **Draft action plan submitted.**	Yes	
5.	Gangetic plains	Jamal Khan, Wildlife Society of India	22.3.01, First Meeting 26.6.01 & 27.6.01, Patna	Yes Yes	- Information to be collected from peer reviewed publications, reports/ dissertations/thesis (published / unpublished), individuals, organisations, govt. departments, working plans, management plans, gazetteers etc, and media. - Specific themes identified and responsibilities allocated. Drafts were to be received by 31.7.01. Status paper on Gangetic biodiversity received. Co-	Yes	There was a delay s due to the lack of response from some of the members suggested by the TPCG initially. The EWG members decided to exclude West Bengal and Orissa from the scope of work of the EWG. Preliminary draft has been

General discussion on the nature of the processes at the national level

(Bansuri- where there are no clear-cut categories above under which u can place the views/concerns of the people interviewed, put them in here, either under existing headings, or feel free to create new ones…)

Strengths of the national level processes

Most of the people interviewed stated that the laudable feature of the entire process of biodiversity law and policy formulation was the fact that, unlike may other laws, it had witnessed consultations and participation from various sectors ~~which~~. The positive aspect of the process is the wealth of information, ideas and possibilities for the law that have been accumulated. It is to be noted that there is no legal mandate in India that provides for any pre-determined mechanism for consultation of all concerned stakeholders who are to be affected by any law. India is the world's largest democracy; however in terms of actual decision-making, the 'actors' are the elected representatives of the people, i.e., the Legislature, and not the people themselves. In view of this, the processes that have gone into the biodiversity law and policy are viewed by many as unique and trend-setting.

Weaknesses of the national processes

However there are numerous short-comings as well. One of the basic criticisms of the processes behind the national action plan and the biodiversity law has been the prolonged time it has taken. Various reasons have been cited for the same:

- vastness and complexities of the issue,
- vastness and diverse composition of India's population which poses practical constraints to any participatory/consultative exercise
- lack of any organisation or institutionalized structure under which local and tribal communities could discuss and take an informed stand
- insufficient planning in terms of the course of action the 'consultation' process should take,
- insufficient allocation of time and resources, because of which the process itself has been criticised as being token and not substantive
- differences between the various wings of the government, and lack of coordination between them
- attempts by non-governmental organisations to come up with alternative drafts of the law independent of each other, and their failure to take a uniform stand,
- change of guard at the political level thrice since the ratification of the CBD,
- lack of informed debate among the private sector, and consequently lack of concerted action by them
- lack of informed debate among local and tribal communities, and consequently lack of concerted action by them

?

Why would these cause delays? They are ~~the~~ faults of the process in themselves..

					ordinator has sent a reminder to others. - Second installment of 25% has been released. - SAP for Herpetofauna received, Kothari sent comments, revised paper submitted by author	3 more papers rec'd. (authors unclear) ~~Too academic an appr~~	requested by 15 November. Worry Too academic.
6.	North-East India	R.S.Tripathi, NEHU, Shillong	29.5.01, Shillong	Yes	- Collection of baseline information begun. - Focal areas of work identified and listed in progress report.	Yes	The cause of delay was a problem with the MoU. Coordinator was awaiting reports from N-E states, has been told to proceed independently of these Has indicated that he hopes to complete the task by end November Needs urgent follow up.
7.	Shivaliks	H.S.Mehta, ZSI, Solan	29.1.01,First meeting; 7.2.0.1; 1.6.01, Jammu	Yes	- Tasks allocated to EWG members.	Yes	Draft requested by mid-November. Worry Poor social issues understanding
8	West Coast	M.N.Madhyastha, Mangalore University, Mangalore	26.8.00, First meeting 30.9.00; 24.3.01; 28.4.01; 18.8.01, Malpe 15.10.2001: meeting on coastal biodiversity organised in Goa, with Goa state Nodal	Yes	- Brainstorming sessions with various stakeholders (fisherfolk, govt. officials) have been held. - Second installment of 25% released.	Yes	Wafar has followed up with comments and suggestions for draft plan. Draft expected by mid-November after meeting in Gujarat. ~~Needs urgent follow up~~ Virinder/Madhu to identify someone with social/pol. understanding

- inadequate consultation with the state governments, and dissatisfaction with the extent to which the concerns of states has been taken into board in the existing draft of the legislation
- the fact that only select NGOs and individuals were invited for most of the meetings and consultations, and there were no public notices or public hearings organised

The entire exercise towards 'consultation' by the Government is viewed by many as arbitrary and sporadic actions. The 'gap' between 1995 and 1997, two years when nothing happened either in the nature of 'consultation' or at the level of any 'Governmental action'. What has been even more severely criticised is the fact that in 1997 when the processes were 'restarted', entirely new committees were constituted. Many who were involved in the 'first phase', so to speak, feel affronted that most of the work done and suggestions made were ignored, thereby resulting in what can only be described as "an enormous waste of expertise, human effort and financial resources."

NGO action

How have the views and perceptions of local communities informed the process? It is but obvious that all the 'official processes' initiated have essentially be non-consultative as far as majority of India's population is concerned. This would hold true for the processes at the level of the two states discussed later in this report, as well. There have been no public hearings or other forms of consultations with local communities. The fact that practically all the national level consultations have been taking place in Delhi, and mostly at the 'invitation' from the Ministry of Environment and Forests, also highlights the limited nature of the 'consultation. Initiatives by NGOs in calling meetings for discussing and debating on the approaches to be adopted for biodiversity conservation have invariably not been attended by Governmental officials/the 'policy-makers'.

Do NGOs represent the views of local communities- are questions that merit some attention. There is no clear-cut answer to this. Firstly, one cannot assume one homogeneous 'local community' view. Secondly, the NGOs that have been involved in the 'consultative' process, have a strong local presence in the areas where they work, and point out that their views and perceptions have got refined and strengthened though their work and constant interactions with the local communities. So, yes, in general it can be stated that NGOs have had a critical role to play in reflecting local community concerns.

Not the same as 'representing'

It is recognised that NGOs in India have played a critical role in generating discussion and debate on the issue of stake and involvement of communities in biodiversity conservation. The non-governmental organisations which have played an active role in the national process, have made concerted efforts in the areas of their work, to constantly interact with farming and other local communities, organizing programmes ranging from training and awareness raising to actual efforts to evolve biodiversity registers. NGOs and their members have also played a critical role in raising awareness on the potential of the CBD. This has been done through writings in newspapers and journals, and through

			agency. 6.11.2001: meeting planned at Bhavnagar (Gujarat)				
9	Western Himalaya	S.P.Singh, Kumaon University, Nainital	2.12.01 & 3.12.01 First meeting; 29.9.01 & 30.9.01, Nainital	Yes	- Responsibilities allocated to members who have conducted further interactions - Gap analysis is being done - Special focus on Kashmir Valley to make up for lack of J&K inputs - BSAP is being drafted	Yes	
10.	Western Ghats	Ranjit Daniels, Chennai Snake Park, Chennai	15.9.01First meeting; 12.10.00; 4.11.00; 2.8.01; (Regional meetings also held.	Yes	- Questionnaires distributed; Concept notes and checklists/data on vertebrates prepared & circulated. - Tasks allocated for region wise preparation of action points. - Second installment of 25% released. - Draft action plan submitted **- Final BSAP submitted.**	Yes	Comments on draft BSAP sent by Kothari

lectures, discussions, and training programmes organised at the local level. But the point to be noted is that the reach of no NGO is as widespread as that of the State. NGO action is invariably concerted action in certain pockets and areas where they have a presence.

Examples of NGO action towards initiating and completing biodiversity registers include:

a) The efforts of the Centre for Ecological Sciences, Indian Institute of Science, Bangalore, and of NGOs in the state of Karnataka, which is discussed in greater length below.

b) The efforts of Gene Campaign (of which Dr.Suman Sahai is a founder member):

Gene Campaign has undertaken work on documentation of biodiversity and knowledge relating thereto among three tribal populations: the Munnars in South Bihar (in the Chotanagpur region); the Bhils of Madhya Pradesh; and the Tharus of the Terai region. The impetus for the same was the realisation that documentation was an essential necessity to conserve the knowledge and resources, and could form the basis for articulating 'community rights'. Medicinal plants and knowledge related thereto was sought to be documented with the help of educated tribal youth. Elders in the village, medical practitioners and traditional healers were consulted in the collection and understanding of the information.

The effort in Chotanagpur was sponsored as a pilot study by the Technology, Information, Forecasting and Assessment Council (TIFAC) of the Department of Science and Technology, Government of India.

One of the biggest stumbling blocks that the members of Gene Campaign faced was the fact that the knowledge sought to be documented was degraded and devalued to a large extent in the eyes of the community, and in the eyes of the practitioners as well. To convince them of the necessity to document and conserve the same was therefore a challenge. The process of documentation and the dialogue initiated with regard to it has however renewed a fair bit of enthusiasm of the extent and variety of knowledge possessed by the community. The register process is complete in Bihar, and is in the process of completion in the two other regions. One copy of the register remains with the community, while Gene Campaign has a copy as well. However there would be no publication of the register unless the legal position with regard to it is clarified.

c) **Bansuri- supplement below with the write-ups u have on the Jaiv Panchayats**

The efforts of Research Foundation of Science, Technology and the Environment (RFSTE, of which Dr.Vandana Shiva is a founder member) towards initiating a movement called the *Jaiv Panchayat: Living Democracy* movement started in early 1999. Activists from RFSTE and Navdanya have been interacting with local villagers in different parts of India (their strongest presence being in the state of Uttar Pradesh) to constitute informal community level institutions called *Jaiv Panchayats* comprising of volunteers from a village. The members of the *Jaiv Panchayat* are

Status of EWGs as on 26th August 2001

S. No	Ecoregion	Name of nodal agency/coordinator	Status reg meetings	Minutes received	Further progress made towards formulation of SAP (Pl. describe)	First progress report received	Remarks
1.	Aravallis	VD Sharma, Paryavan Prahari, Jaipur	First meeting held on November 6, 2000. A series of meetings have been organized since then. Last meeting held on 20th April, 2001	Yes	- Over 100 Questionnaires have been distributed in the villages throughout the Aravalli stretch in Rajasthan, followed by meetings in the villages to explain NBSAP and verify the data. Over 67 have been received. - Similar exercise being carried out in Gujarat with the help of the Gujarat Nodal agency. - VD Sharma is part of BSAP working group in Rajas than. - Efforts being made to link up with Delhi. - Tasks assigned for analysis within the EWG. While looking at existing Information on micro-organic, aquatic biodiversity of the region, gaps being identified simultaneously. -Co-ordinator has linked up with the Haryana Nodal agency to cover	Yes	The process of information collection and dissemination has been extremely participatory. The data collection and village meetings have been organized along with Forest Department, NGOs and independent researchers. Second installment has been released.

Info. from 150 vill across 3 states

Draft by mid-Oct.

Vimal to help org. meet in Asola?

					portion of Aravallis in Haryana. Has attended state level meeting		
2.	Central Forest Belt	Dilip Gode, VNCS, Nagpur	First meeting held on September 18, 2000. A meeting of the EWG took place on 20.3.2001 at Nagpur. Workshop of Vidarbha area at Nagpur, 21 - 22 , July 2001 Vidarbha level workshop to process draft BSAP at Chandrapur, 28-29 July, 2001 Two days workshop at Jagdalpur - Bastar 10th and 11th, August 2001.	Yes	- Several gram sabhas /meetings with officials, NGOs, community representatives, villagers, and tribals have been organized. - Addressed a forum of Vidarbha NGOs at Fetri on 11th August 2001. Special session was arranged on BSAP. - A workshop for NGOs and Governmental Agencies, Community Based Organisations and meeting for the members of Advisory Committee / Working Group from Bastar area at the office of D C-Bastar, Jagdalpur on 24th August 2001. - Review and Writing workshop on BSAP-Bastar on 25th and 26th August 2001 at Agricultural Research Center of Indira Gandhi Agricultural University, Jagdalpur. - Meet with Press at Jagdalpur on 27th August 2001.	Yes	Letter from the PS Forest to go to Commissioner Bastar, CF Kanker & Jagdalpur nee A letter from the MoEF to the relevant officials, as requested by the co-ordinator of the EWG has been sent. Second installment has been released. Coordinator has written to MoEF for grant of additional Rs. 75, 000/- to meet the extra cost of the program. TPCG has recommended release of Rs. 50,000. Matter pending with MoEF MoEF has issued a letter to the Chief Sec. Maharashtra, regarding cooperation with the EWG

					- Meeting of the members of working gp. and advisory committee at Nagpur on 9th September 2001. - Meet the press on 15th September 2001 at Nagpur.		
3.	East Coast	L. Kannan, Annamalai University, Parrangipettai	Inaugural workshop held on February 24, 2001.	Yes	- Information collection started with the help of post graduate students; - Boat rally planned at Parangipettai on 31st August 2001. In the evening, there will be a public meeting in the salankukara street, Parangipettai to popularise the National Biodiversity Strategy and Action Plan (NBSAP) programme followed by a cultural fete to be presented by the students of CAS in Marine Biology	Yes	Kannan is quite enthusiastic about popularizing the NBSAP at all levels. Wafar has written to him to start consolidating the draft plan, and Kothari to meet him on 31st Aug. to discuss this.
4.	Eastern Ghats	T. Pullaiah, Sri Krishna Devaraja University, Ananthpur	Inaugural workshop held on December 2 and 3, 2000 Meeting held on April 17, 2001 at Nellore	Yes	- Responsibilities allocated for preparing sector wise SAPs covering plant, animal, agriculture and cultural diversity. - Region wise SAPs preparation allocations	Yes	Proposal for finalizing SAP by July 2001. Needs urgent follow-up.

KK/Satheesh

					made. Co-ordinator has broadcasted talks in Telugu (NBSAP) on Radio.		
5.	Gangetic plains	Jamal Khan, Wildlife Society of India	First Meeting Held on March 22, 2001 . Second meeting held Patna, June 26-27, 2001.	Yes Yes	- Information will be collected from various sources: These include Peer reviewed publications, reports/ dissertations/thesis (published / unpublished), People and experts (local people and PA managers), Organisations (universities, central research institutes), Action plans and management plans of PAs, District gazetteers, Working plans and District information centers, Govt. departments (agriculture, forest, fisheries, irrigation, dairy etc), Internet, Media and NGOs. - Specific themes have been identified and responsibilities have been allocated within the EWG. - Members decided to have a greater communication through	Yes	There was a delay in beginning the BSAP process due to the lack of response from some of the members suggested by the TPCG initially. The EWG unanimously decided to exclude West Bengal and Orissa from the scope of work of the EWG. Second installment of 25% has been released. Needs urgent follow up KK/Rav.

					e-mail and it was also decided that members should send relevant information and literature to the co-ordinator who would send it to the person concerned. - Presentations were made by members of the EWG on the topics assigned to them. First draft of sub themes to be submitted to the Coordinator by July 31, 2001.		
6.	North-East India	R.S.Tripathi, NEHU, Shillong	A coordination meeting of all the state level coordinators of the northeast held on May 29, 2001 at Shillong; attended by Bhattacharjee.	Yes	- While starting late, the co-ordinator has begun with collection of baseline information at his level and with his colleagues at the North-Eastern Hill University (NEHU). - Focal areas of work that he has identified, include: biodiversity of sacred groves, biosphere reserves, abandoned jhum lands, medicinal and aromatic plants (including their cultivation), canes and bamboos, wetland biodiversity, insect biodiversity, threatened	Yes	The co-ordinator visited MoEF to clarify the difficulties with some of the clauses in the MoU. These had been a cause of the delay in signing the MoU. Reasons were clarified and MoU signed. Needs urgent follow up. PCB in touch; asked him to send update

					taxa, non-timber forest produce (including marketing problems).		
7.	Shivaliks	H.S.Mehta, ZSI, Solan	First meeting held on January 29, 2001. Meeting in Jammu on June 1, 2001	Yes	- Tasks allocated to EWG members. A small meeting held on February 7, 2001. - Co-ordinator present at MNW. Why mentioned only for him?)	Yes	Needs urgent follow up. KK Nirinder
8	West Coast	M.N.Madhyastha, Mangalore University, Mangalore	First meeting held on August 26, 2000. Meeting held on September 30, 2000. (Second regional meeting held on 28 April, 200)	Yes	- A small meeting held in Mumbai in October 2000. - Brainstorming session with various stakeholders (fishermen, govt. officials) on March 24, 2001. - Meeting with various stakeholders of the coastal region at Malpe held on 18th August 2001, which was filmed.	Yes Has employed someone for collation	A meeting scheduled at Gujarat could not be held because of the earthquake. Madhyastha is trying to organize a meeting at Goa now and later in Kerala. He also desires to participate in the Lakshadweep NBSAP process, since this is part of west coast. Second installment of 25% released. Wafar has followed up with comments and suggestions for draft plan.
9	Western Himalaya	S.P.Singh, Kumaon University, Nainital	First meeting held on December 2 and 3, 2001	Yes	- Responsibilities allocated to members. Members to conduct further interactions with people in their assigned areas/states/region till end January 2001. - Based on report gap analysis to be done and SAP to be developed. A note on expanding the scope of NBSAP to include services	Yes	Data collection and consolidation underway.

					provided by ecosystem and connected watershed and geological features by the Coordinator circulated at the MNW. - Meeting to be organised in ~~mid~~ end September to which HP, J&K and Uttaranchal SSC coordinators shall be called.		
10.	Western Ghats	Ranjit Daniels, Chennai Snake Park, Chennai	- First meeting held on September 15, 2000. - Meetings held on October 12, 2000 and November 4, 2000. Further meetings scheduled in 2001. - Meeting held on 2nd August 2001 to discuss draft action plan	Yes	- Proposal for sending questionnaires to five states falling in the eco region. - Concept notes and checklists/data on vertebrates prepared & circulated. - Draft action plan presented at the MNW. **- Draft action plan submitted**	Yes	The co-ordinator made a presentation of the process at the Rainforest Research workshop held at Coimbatore in February 2001. He also attended the meeting of the Tamil Nadu SSC. Second installment of 25% released.

Status of EWGs as on 20TH July 2001

S. No	Ecoregion	Name of nodal agency/coordinator	Status regmeetings	Minutes received	Further progress made towards formulation of SAP (Pl. describe)	First progress report received	Remarks
1.	Aravallis	VD Sharma, Paryavan Prahari, Jaipur	First meeting held on November 6, 2000. A series of meetings have been organized since then. Last meeting held on 20th April, 2001	Yes	- Over 100 Questionnaires have been distributed in the villages throughout the Aravalli stretch in Rajasthan, followed by meetings in the villages to explain NBSAP and verify the data. Over 67 have been received. - Similar exercise being carried out in Gujarat with the help of the Gujarat Nodal agency. - VD Sharma is part of BSAP working group in Rajas than. - Efforts being made to link up with Delhi. - Tasks assigned for analysis within the EWG. While looking at existing Information on micro-organic, aquatic biodiversity of the region, gaps being identified simultaneously.	Yes	The process of information collection and dissemination has been extremely participatory. The data collection and village meetings have been organized along with Forest Department, NGOs and independent researchers. Second installment has been released.
2.	Central Forest Belt	Dilip Gode, VNCS, Nagpur	First meeting held on September 18, 2000.	Yes	- Several gram sabhas /meetings with officials, NGOs, community	Yes	Letter from the PS Forest to go to Commissioner Bastar, CF Kanker & Jagdalpur nee

gone.

Mah-govt. letter to Vidarbha officials is needed.

Democracy and the People

The inauguration of Democracy in India was the result of a covenant. The elite or the middle class and the intelligentsia highly accomplished and rather well off were on the one side. The ordinary people in their great diversity with all their problems and disabling conditions were on the other. The two disparate worlds-- modern and liberal against the unexposed and unequipped-- entered a new kind of deal. The elite made a promise about the future. Nehru's "tryst with destiny" speech made on the eve of Independence where in he said that "now the time comes when we shall redeem our pledge" is a personification of that promise held out to the people. The elite was now in the seat of power. Till a while ago they were one with the people in the anti-colonial struggles.

Whatever the social origins of the elite, mostly well off middle classes from the upper castes, the *Savaranas* or *Dwijya* castes, with a sprinkling of some from the lower castes, they were all bound in a shared world with the ordinary people. This was a world born of struggles. Outside this shared world; there were two divergent voices. One was that of the Marxist left led by the Communist Party fighting for revolution. The other was the Hindu right wing, which opted for a restoration of the old social order, which embodied the glory that was the "Indian" past. The Communist Party was at the head of a mass upsurge at the time of Independence, the like of which the country never again experienced. We will have occasion to refer to it later. The Hindu right wing, as an organised force, was then a minuscule presence, so it did not matter much at that time.

The covenant was not just an "act of faith" as is often made out to be. It had a history behind it, inescapable for all; the elite was as much involved in it as were the masses. Two aspects of this history are worth a mention. Of lesser salience for the argument to be presented here was the history of the constitutional developments, which over a stretch of long time was creating a political establishment adept at handling modern constitutional institution. The other was that India saw one of the longest fought out Freedom Movement anywhere in the world. Its limits were, as core understandings go, the limits imposed by the bourgeois outlook and preferences of the dominant leadership. Nevertheless one significant feature of the National Movement was the constant pressure exerted by the radical urge among the people within it to come to the forefront. The anti-feudal struggles of the peasantry have been the most important component of the radical impulse. The other has been the unending quest of the most wretched in India, the Dalits, to overcome untouchability and other such disabling conditions which have disfigured the social personality of India. The spiritual and philosophical greatness of India remains diminished to the extent that untouchability remains in our midst. These two struggles of peasants in general and Dalits in particular also give a link with the agrarian disturbances and rebellions prior to the beginning of the nationalist phase in Indian politics, all of which were beaten back with little or no sympathy from the emerging elite. Going backward, from the Pabna and Deccan revolts to the Fakir—Sanyasssi insurrections these hundred years of revolts were replete with militant voices against exploitation, discrimination, predatory practices, and cruelty.

			A meeting of the EWG took place on 20.3.2001 at Nagpur. Vidarbha level workshop to process draft BSAP scheduled fro 28-29 July, 2001		representatives, villagers, and tribals have been organized. - Proposal to hold the workshop over the draft by the last week of April.		A letter from the MoEF to the relevant officials, as requested by the co-ordinator of the EWG has been sent Second installment has been released. Coordinator has written to MoEF for grant of additional Rs. 75, 000/- to meet the extra cost of the program; MoEF's reply awaited.
3.	East Coast	L. Kannan, Annamalai University, Parrangipettai	Inaugural workshop held on February 24, 2001.	Yes	- Information collection started with the help of post graduate students; proposal for arranging boat rallies in Pondicherry and Tamil Nadu.	Yes	Next workshop planned for Andhra Pradesh. Kannan is quite enthusiastic about popularizing the NBSAP at all levels.
4.	Eastern Ghats	T. Pullaiah, Sri Krishna Devaraja University, Ananthpur	Inaugural workshop held on December 2 and 3, 2000 Meeting held on April 17, 2001 at Nellore	Yes	- Responsibilities allocated for preparing sector wise SAPs covering plant, animal, agriculture and cultural diversity. Region wise SAPs preparation allocations made. Co-ordinator has broadcasted talks in Telugu (NBSAP) on Radio.	Yes	~~Draft document to be prepared by March 31, 2001.~~ Proposal for finalizing SAP by July 2001.
5.	Gangetic plains	Jamal Khan, Wildlife Society of India	First Meeting Held on March 22, 2001. Second meeting held on June 26-27, 2001.	Yes Yes	Information will be collected from various sources: These include Peer reviewed publications, reports/ dissertations/thesis (published / unpublished), People and experts (local people and PA managers), Organisations (universities,	Yes	There was a delay in beginning the BSAP process due to the lack of response from some of the members suggested by the TPCG initially. The EWG unanimously decided to exclude West Bengal and Orissa from the scope of work

A&L drlip to give separate budget; recommend to MoEF

— what to ask re. dates

All of this history found an expression in the formulation of the socialist trend of thought within the national movement, articulated differently, in order of time, by the Communist party, Nehru, and the Congress Socialist Party and many other smaller radical trends. These however never became a dominant force but remained as a powerful current, of a countervailing kind, to the dominant bourgeois condition within the Freedom Movement. These forced a constant dialogue within the anti-Colonial movement. The point is not whether these convinced the dominant mood. Rather, the fact of the matter is that of a forced dialogue and still, today, these represent the lineage of dissent in Indian social and political life. The voice of the elite always met with a challenge in the making of modern India and therefore the National Movement is something, which cannot be written as an autobiography. Other voices always disturb it being formed as coherent. What perhaps is more authentic are all the biographies that have been written of each of the ideological or political currents? Together they make up the story, which is the National Movement or the Freedom Struggle or anti-Colonialism.

The Freedom Movement thus forced the elite to keep its ears close to the people, to be attentive and sensitive to their aspirations, and these in turn were the inspirations for some sections of the leadership. That is how the covenant emerged. It was in this dialogue of distance as well as of difference-- as these worlds were so dissimilar—- and sensitivity to these that political explorations of themes and needs took place and the covenant gained in substance. Constitution making is a continuation of this dialogue in the struggle for domination. The Preamble to the constitution and much of what is there in the Directive Principles is a standing ovation to this dialogue of struggle.

The legitimacy of the covenant is in itself its limitation. The class outlook and the bourgeois preferences of the elite was forced into a compromise with the radical impulse of the masses-- the peasantry, the working classes, the toiling people, the oppressed castes, and so on. People living in poverty, illiteracy, lack of culture, absence of shelter, poor health, etc. were promised an immediate relief and eventual solution from all of this, which made life so difficult to live. It is only in this sense that I find it possible to read Nehru's 'now the time comes when we shall redeem our pledge". These were the people in whom "faith" was reposed, the granting of adult franchise and all the Fundamental Rights. The legitimacy to rule was a result of this. People delegated the power to rule on the promise of 'tryst with destiny".

After Independence, within the dialogue of struggle the class compulsions took over. The bourgeoisie gained in importance out of all proportions to its economic strength. It became a force to reckon with. Because what it represented was viewed as the future of India by the political leadership that was becoming entrenched. Hence by aligning with the landed gentry, partly due to its structural weaknesses and part due to the fear of the radical impulse in society, the bourgeoisie became the leading force. It should be kept in mind that large landed property owners in India are the reservoir of the most conservative trends in Indian politics with a surplus of coercive power, which often gets mobilized to beat back the people. Thus the bourgeois led leadership chose to go for the limited western inspired modernisation rather than emancipatory transformation. It was thus forced to rely on western capital(ism); this now

					central research institutes), Action plans and management plans of PAs, District gazetteers, Working plans and District information centers, Govt. departments (agriculture, forest, fisheries, irrigation, dairy etc), Internet, Media and NGOs. - Specific themes have been identified and responsibilities have been allocated within the EWG. - Members decided to have a greater communication through e-mail and it was also decided that members should send relevant information and literature to the co-ordinator who would send it to the person concerned. Presentations were made by members of the EWG on the topics assigned to them. First draft of sub themes to be submitted to the Coordinator by July 31, 2001.		of the EWG. Second installment of 25% has been released.
6.	North-East India	R.S.Tripathi, NEHU, Shillong	A coordination meeting of all the state level coordinators of the northeast, held on May 29, 2001 at Shillong ; attended by	Yes	- While starting late, the co-ordinator has begun the ecoregional process had begun with collection of baseline information at his level and with his colleagues at the North-	Yes	The co-ordinator visited MoEF to clarify the difficulties with some of the clauses in the MoU. These had been a cause of the delay in signing the MoU. Reasons were clarified and MoU signed.

has become rampant with the drive towards globalisation. The foreboding of what was to come can clearly be seen in Nehru's "tryst with destiny" speech where having said "now the times comes when we shall redeem our pledge" he goes on to add immediately, "not wholly or in full measure, but very substantially". The premonition of "not wholly" was an intuition about the futuredue to the class compulsions which taking over the politics around the time of Independence. That by now is evident that the promise has remained unfulfilled, far too less than "very substantially".

This then remains the problem with democracy. Whether it is poverty, caste oppression, and gender discrimination. The disabling inequalities have not lessened; the terrain has changed as will become clear later. The struggles within democracy in India are therefore primarily for equality. This will come out as the central theme as we unfold the story of democracy in its manifold details.

Let us come back to the covenant to go ahead with the story of democracy in India. It was viewed with a great deal of suspicion by many a commentators. Why does then the diffidence come among those looking at the inauguration of democracy in India? The covenant was not believed to fully cohere. The scepticism was rooted in the unusual basis on which the inauguration of democracy in India was based. Can it be possible to expect people in poverty and illiteracy and cultural backwardness to be the guarantors of democracy? Its anchors and actors? To remember that all people were in possession of vote at one go is important. Everywhere else before India, adult franchise was a result of small, incremental additions, including in the mother of democracy, Britain. The logic of anti-Colonial mass movements in India was such that it could not be otherwise; it was empowering. Any other way of going about would have been disenfranchising for the people. And people had already learnt the power of mass movements. We will soon see how this was received with a great deal of misgivings by many a commentators.

This was not all. The covenant that inaugurated democracy in India was radically different than any other. The Hobbesian covenant was for the security of life and limb. The Lockean one was for the protection of liberty and property. The Indian covenant was a radicalised version of Rousseau. Rousseau wanted to restore the egalitarian principle, which was lost with the institutionalisation of property, so that the quest for common good embodies equal voices. Even in a radicalised atmosphere of enlightenment Europe, Rousseau became a derided voice of dissent. Similarly but with additional moves viz. on the caste and gender questions the covenant directed the removal of every obstacle in the way of equality. Equality in India even today means struggles for inclusion because the exclusions in India were based on multiple sources and were differently graded. Can democracy in a country like India do this? Creation of equality therefore became the founding principle of democracy in India. And the quest for it remains, in diverse ways, the driving force in the survival of democracy in India.

In the context of this, the answer to the question whether democracy in India has achieved what all it set out to do as a part of the covenant is obvious; it has not. The question rather is

			Bhattacharjee.		Eastern Hill University (NEHU). - Focal areas of work that he has identified, include: biodiversity of sacred groves, biosphere reserves, abandoned jhum lands, medicinal and aromatic plants (including their cultivation), canes and bamboos, wetland biodiversity, insect biodiversity, threatened taxa, non-timber forest produce (including marketing problems).		PCB to follow up Ask Tripathi. to pay for chedema coord. for meetings
7.	Shivaliks	H.S.Mehta, ZSI, Solan	First meeting held on January 29, 2001. Meeting in Jammu on June 2?	Yes	Tasks allocated to EWG members. A small meeting held on February 7, 2001.	Yes	Next meeting in Jammu on April 1,2001
8	West Coast	M.N.Madhyastha , Mangalore University, Mangalore	First meeting held on August 26, 2000. Meeting held on September 30, 2000. (Second regional meeting held on 28 April, 200)	Yes	- A small meeting held in Mumbai in October 2000. Brainstorming session with various stakeholders (fishermen, govt. officials) on March 24, 2001.	Yes	A meeting scheduled at Gujarat could not be held because of the earthquake. Madhyastha is trying to organize a meeting at Goa now and later in Kerala. He also desires to participate in the Lakshadweep NBSAP process, since this is part of west coast. Second installment of 25% released.
9	Western Himalaya	S.P.Singh, Kumaon University, Nainital	First meeting held on December 2 and 3, 2001	Yes	- Responsibilities allocated to members. Members to conduct further interactions with people in their assigned areas/states/region till end	Yes	Data collection and consolidation underway. Co-ordinator has asked for additional time to finish the

what has allowed democracy to go on for well over 50 years. To see its eminent demise or to run it down has been also a part of the biographies, often prospectively, written for it. It has not only survived but it has survived with full and equal legal citizenship. Its survival has belied the prophets of doom who had since the late 1950's starting with Salig Harrison prophesied its oncoming demise. Not only that nothing of the sort happened but also it could even overcome the trauma of Emergency terror with only a few scares on its body politics. A new kind of criticism has now become common since commentators have become diffident of predicting its demise in the face of the ill-fate of their predictions and of its remarkable resilience.

This new type of criticism has to do with its degeneration and loss of respect among the people. It is replete in all kinds of mass media and drawing room conversations. But it is also found within the academia. Let me take one example from a radical, left oriented scholar. Atul Kohli has argued that in the recent phase, "India has had too much of the 'wrong' kind of democracy and not enough of the 'right' kind". There is in general a "governability crisis that contribute toward making Indian democracy the 'wrong' type". There has developed in India a widespread inclination within the government and the political parties to capitulate, he argues, in face overpoliticization and immediate electoral pressure, leading to the decay of state institutions. This indictment was written, 30 years after Salig Harrison's gloomy forecasts, in the late 1980's.

It is nobody's case that everything is right with Indian democracy. If democracy as a value translates itself as a set of practices informed by norms and procedures, then the question is how can it get transcribed in conditions of India. If people being poor cannot get education and remain ill equipped to accomplish enough of culture, then how do democratic practices get effected. This question is important because democracy has enormously expanded and electoral politics has witnessed a phase of deepening among the very people who are not best equipped to practice democracy in all its normative details. So too have the apprehensions and reservations about democracy deepened over the last decade. Implementation of the Mandal award and the consequent upper caste vandalism and the demolition of Babri Masjid preceded by an intense communal chauvinist campaign are landmark moments in Indian politics and social life. These two events led to very contrary consequences in Indian politics. I will come to the consequences of Masjid—Mandir dispute later in the book. For now I want to briefly look at what Mandal meant for democracy in India.

It is important to look at the Mandal award not for any of its merit per se but to begin with, to grasp five interrelated assumptions, which are doing the rounds in the prevailing political atmosphere in the country. All of these are widely shared and constantly repeated by the articulate sections in control of media of mass communications. First there is the assumption that among the "people" there is great cynicism and disenchantment with the institutions of democracy in India. Secondly, leaders who occupy positions in these institutions lack in principles, are opportunists and therefore prone to shifting loyalties and alliances. Thirdly, there has been a decline in morality of public life with rampant corruption and unclean political climate. Fourthly, there has been a sharp increase in social disharmony and therefore

					January 2001. Based on report gap analysis to be done and SAP to be developed. A note on expanding the scope of NBSAP to include services provided by ecosystem and connected watershed and geological features by the Coordinator circulated at the MNW.		BSAP.
10.	Western Ghats	Ranjit Daniels, Chennai Snake Park, Chennai	First meeting held on September 15, 2000. Meetings held on October 12, 2000 and November 4, 2000. Further meetings scheduled in 2001.	Yes	Proposal for sending questionnaires to five states falling in the eco region. Concept notes and checklists/data on vertebrates prepared & circulated. Draft action plan presented at the MNW.	Yes	The co-ordinator made a presentation of the process at the Rainforest Research workshop held at Coimbatore in February 2001. He also attended the meeting of the Tamil Nadu SSC. Second installment of 25% released.

Full draft ready, to be disc. on 2nd Aug.

caste conflicts and casteism have become the bane of politics, what with Lalloo Yadavs and Mulayum Singhs and Mayavatis proliferating in politics. Fifth and last, due to all of this social life has become vicious and debilitating.

It is a well-known fact that "public confidence" is a source of strength for any democracy. If we go by the articulate opinion in newspapers and magazines and T.V. and so on, it is clear that public confidence is abysmally low, becoming non-existent. How did this come about? To get to this, let us recount the history of last two decades, briefly though.

Rajiv Gandhi's massive victory in the wake of Indira Gandhi's assassination in 1984 created a ray of hope within the same elite that now feels disillusioned. He was seen as Mr.Hope with a vision for taking India into the next century. This did not last. He was soon mired in corruption and went down badly in the next elections in 1989. V.P.Singh who replaced him fought the election on the platform of eradicating corruption. He too became popular with the same elite. He was taken as Mr.Clean who would rid the country of corruption. The scandal of the Bofor gun, as the symbol against corruption, is still fresh in our minds. Around August of 1989 V.P.Singh suddenly became a villain from being a hero. The announcement of the implementation of the Mandal award, keeping 27 per cent of government jobs for the OBC's, became a moment of drastic alterations in subjective feelings.

It set in motion a process of realignment of sentiments and preferences and the general outlook among the articulate sections of society, the elite in its entirety baring the critical intelligentsia in academia and political activists. The Mandal award also let lose a caste war on the society, a widespread vandalism by the youth belonging to the upper caste against public property and orderly routine life in society. It evoked a high degree of sympathy among the elite and the established middle classes. Never before in Indian history disruption of daily life and destruction of public property were met with such sympathy or apologia in the mass media and polite drawing room conversation. In the political culture prevailing within the establishment in India, not just sympathy but even bare understanding has always been in deficit for all popular struggles, be they of the working class, or peasantry, or other toilers or the employees. This was the first time when the gentry did not mind when trains did not run or the road traffic came to a stand still. The refrain instead became what will the poor fellows do if not protest. And to remind us, this did go on for a longer time then most strikes of exploited people do.

The vandalism of the children of the upper caste also generated a sympathetic discourse in society, at least what was read in the newspapers or heard and seen on the T.V. It gave rise to a heated debate on terms like merit and capability and efficiency. Soon not only the terms of debate were changing but also rather two incommensurable discourses were shaping up. What the Dalits or OBC's spoke through the same terms was not clearly intelligible to the upper castes or the Savaranas. This has not changed too much since then. In fact ever since then the public sphere in India remains badly fragmented. There is no more a public united on a minimum inter subjective understanding, I will have more to say on this in a later chapter.

Item No. 3.3

Status of EWGs as on 11th May 2001

S. No	Ecoregion	Name of nodal agency/coordinator	Date of signing MoU & Payment details	Status reg formation of EWG	Status reg 1st meeting	Minutes received	Further progress made towards formulation of SAP (Pl. describe)	First progress report received	Remarks
1.	Aravallis	VD Sharma, Paryavan Prahari, Jaipur	- MoU signed on September 16, 2000 - DD Sent	EWG formed in October 2000.	First meeting held on November 6, 2000, Last meeting held on 20th April, 2001	Yes	- Over 100 Questionnaires have been distributed in the villages throughout the Aravalli stretch in Rajasthan, followed by meetings in the villages to explain NBSAP and verify the data. Over 67 have been received. - Similar exercise being carried out in Gujarat with the help of the Gujarat Nodal agency. - VD Sharma is part of BSAP working group in Rajas than. - Efforts being made to link up with Delhi. - Tasks assigned for analysis within the EWG. While looking at existing Information on micro-organic, aquatic biodiversity of the region, gaps being identified simultaneously.	Yes	The process of information collection and dissemination has been extremely participatory. The data collection and village meetings have been organized along with Forest Department, NGOs and independent researchers.
2.	Central Forest Belt	Dilip Gode, VNCS, Nagpur	- MoU signed on August 25, 2001 - DD Sent	EWG and an Advisory Committee	First meeting held on September 18,	Yes	- Several gram sabhas /meetings with officials, NGOs, community	No	Letter from the PS Forest to go to

				formed in August 2000.	2000. A meeting of the EWG took place on 20.3.2001 at Nagpur.		representatives, villagers, tribals have been organized. - Proposal to hold the workshop over the draft by the last week of April.		Commissioner Bastar, CF Kanker & Jagdalpur nee A letter from the MoEF to the relevant officials, as requested by the co-ordinator of the EWG has been sent
3.	East Coast	L. Kannan, Annamalai University, Parrangipettai	- MoU signed on October 17, 2000 - DD Sent	EWG formed in August 2001.	Inaugural workshop held on February 24, 2001.	No	- Information collection started with the help of post graduate students; proposal for arranging boat rallies in Pondicherry and Tamil Nadu.	Yes	Next workshop planned for Andhra Pradesh. Kannan is quite enthusiastic about popularizing the NBSAP at all levels.
4.	Eastern Ghats	T. Pullaiah, Sri Krishna Devaraja University, Ananthpur	- MoU signed on August 24, 2000 - DD Sent	EWG formed in August 2000.	Inaugural workshop held on December 2 and 3, 2000 Meeting held on April 17, 2001 at Nellore	Yes	- Responsibilities allocated for preparing sector wise SAPs covering plant, animal, agriculture and cultural diversity. Region wise SAPs preparation allocations made. Co-ordinator has broadcasted talks in Telugu (NBSAP) on	No	Draft document to be prepared by March 31, 2001. Proposal for finalizing SAP by ~~May~~ July 2001.

							Radio.		
5.	Gangetic plains	Jamal Khan, Wildlife Society of India	- MoU signed on August 17, 2000 - DD Sent.	EWG formed in December 2000.	First Meeting Held on March 22, 2001	Yes	Information will be collected from various sources: These include Peer reviewed publications, reports/ dissertations/thesis (published / unpublished), People and experts (local people and PA managers), Organisations (universities, central research institutes), Action plans and management plans of PAs, District gazetteers, Working plans and District information centers, Govt. departments (agriculture, forest, fisheries, irrigation, dairy etc), Internet, Media and NGOs. - Specific themes have been identified and responsibilities have been allocated within the EWG. - Members decided to have a greater communication through e-mail and it was also decided that members should send relevant information and literature to the co-ordinator who	No	There was a delay in beginning the BSAP process due to the lack of response from some of the members suggested by the TPCG initially. The EWG unanimously decided to exclude West Bengal and Orissa from the scope of work of the EWG.

							would send it to the person concerned. - A workshop has been planned for late June (between 25-30th) at Patna where the first draft will be presented and discussed.		
6.	North-East India	R.S.Tripathi, NEHU, Shillong	- MoU signed in March 2001 - DD Sent	EWG formed in August 2000	A coordination meeting of all the state level coordinators of the northeast, by the 3rd week of May, is proposed.		- While starting late, the co-ordinator has begun the ecoregional process had begun with collection of baseline information at his level and with his colleagues at the North-Eastern Hill University (NEHU). - Focal areas of work that he has identified, include: biodiversity of sacred groves, biosphere reserves, abandoned jhum lands, medicinal and aromatic plants (including their cultivation), canes and bamboos, wetland biodiversity, insect biodiversity, threatened taxa, non-timber forest produce (including marketing problems).	No	The co-ordinator visited MoEF to clarify the difficulties with some of the clauses in the MoU. These had been a cause of the delay in signing the MoU. Reasons were clarified and MoU signed.
7.	Shivaliks	H.S.Mehta, ZSI, Solan	- MoU signed on October 31, 2000 - DD Sent	EWG formed in January 2000.	First meeting held on January 29, 2001.	Yes	Tasks allocated to EWG members. A small meeting held on February 7, 2001.	No	Next meeting in Jammu on April 1,2001
8	West Coast	M.N.Madhyastha,	- MoU signed on	EWG formed	First meeting	Yes	- A small meeting held in	No	A meeting

See PCB update

		Mangalore University, Mangalore	August 21, 2000 - DD Sent	in July 2000.	held on August 26, 2000.		Mumbai in October 2000. Brainstorming session with various stakeholders (fishermen, govt. officials) on March 24, 2001. - Second regional meeting held on 28 April, 2001 Kerala meeting → To org. meetings in Goa & Guj.		scheduled at Gujarat could not be held because of the earthquake. Madhyastha is trying to organize a meeting at Goa now and later in Kerala. He also desires to participate in the Lakshadweep NBSAP process, since this is part of west coast.
9	Western Himalaya	S.P.Singh, Kumaon University, Nainital	- MoU signed on August 26, 2000 - DD Sent	EWG formed in July 2000.	First meeting held on December 2 and 3, 2001	Yes	- Responsibilities allocated to members. Members to conduct further interactions with people in their assigned areas/states/region till end January 2001. Based on report gap analysis to be done and SAP to be developed. Visited Kasaragod will send update	Brief progress report of activities received	Data collection and consolidation underway. Co-ordinator has asked for additional time to finish the BSAP.
10.	Western Ghats	Ranjit Daniels, Chennai Snake Park, Chennai	- MoU signed on August 18, 2000 - DD Sent	EWG formed in August 2000.	First meeting held on September 15, 2000.	Yes	- Meetings held on October 12, 2000 and November 4, 2000. Further meetings scheduled in 2001. Proposal for sending	Yes	The co-ordinator made a presentation of the process at the Rainforest

AK

Is Panel inc.? — Can he present the plan at MNW?

							questionnaires to five states falling in the eco region. Concept notes and checklists/data on vertebrates prepared & circulated.		Research workshop held at Coimbatore in February 2001. He also attended the meeting of the Tamil Nadu SSC.

EWG-General 8.1.15\Log\Status Chart\Ver.15_KK\26.3.2001

✓ - Satisfactory - 8
* - Serious - 2

Ask for Progr. Report

Sl. No	Ecoregion	Name of nodal agency/coordinator	Date of signing MoU & Payment details	Status reg formation of EWG	Status reg 1st meeting	Minutes received	Further progress made towards formulation of SAP(Pl. describe)	First progress report received	Remarks
1.	Aravallis	VD Sharma, Paryavan Prahari, Jaipur	- MoU signed on September 16, 2000 - DD Sent	EWG formed in October 2000.	First meeting held on November 6, 2000	Yes	Meetings and public hearings held subsequently. Questionnaire being distributed in the villages throughout the Aravalli stretch in Rajasthan, followed by meetings in the villages to explain NBSAP and verify the data. Efforts being made to link up with Delhi and Gujarat SSCs as well as link up with the State Process in Rajasthan. Tasks assigned for analysis within the EWG.		
2.	Central Forest Belt	Dilip Gode, VNCS, Nagpur	- MoU signed on August 25, 2001 - DD Sent	EWG and an Advisory Committee formed in August 2000.	First meeting held on September 18, 2000.	Yes	Several gram sabhas /meetings with officials, NGOs, community representatives, villagers, tribals have been organized. Proposal to hold the workshop over the draft by the last week of April.		
3.	East Coast	L. Kannan, Annamalai University, Parrangipettai	- MoU signed on October 17, 2000 - DD Sent	EWG formed in August 2001.	Inaugural workshop held on February 24, 2001.	~~No~~ Yes	Information collection started with the help of post graduate students; proposal for arranging boat rallies in Pondicherry and Tamil Nadu.		Next workshop planned for Andhra Pradesh. Kannan is

the particles described by the field. This was exactly the method applied before. In the case of a scalar field we obtained $\hat{\boldsymbol{J}} = \hat{\boldsymbol{L}} = \hat{\boldsymbol{r}} \times \hat{\boldsymbol{p}}$, i.e. it describes particles which have only orbital angular momentum, or particles without spin ($S = 0$). In the case of a vector field we obtained $\hat{\boldsymbol{J}} = \hat{\boldsymbol{L}} + \hat{\boldsymbol{S}}$, where $\hat{\boldsymbol{S}}^2 = S(S+1)\hbar^2 = 1(1+1)\hbar^2$. Hence, vector fields describe particles with spin $S = 1$ (cf. Example 1.10).

EXAMPLE

1.12 Transformation of Two-Component Spinors Under Rotations

The rotation of scalar and spinor wave fields was evident and easy to comprehend, as easy to imagine as a rotated scalar or vector. In the case of two-component spinors it is not so easy. We have to modify the direct method of determining the rotation operator, which we developed in previous sections. We have to study not only a single wave function, but also the behaviour of an equation for two-component spinors under rotation. For simplicity we choose the Pauli equation,

$$\mathrm{i}\hbar\frac{\partial\psi}{\partial t} = \hat{H}\psi = \left\{\frac{1}{2m}\left(\hat{\boldsymbol{p}} - \frac{e}{c}\boldsymbol{A}\right)^2 + V(\boldsymbol{r}) - \mu_\mathrm{B}\hat{\boldsymbol{\sigma}}\cdot\boldsymbol{B}\right\}\psi \quad . \tag{1}$$

We denote the two-component spinor by $\psi = \binom{\psi_1}{\psi_2}$. The rotation operator is again denoted by $\hat{U}_\mathrm{R}(\phi)$ and the rotated spinor by ψ'. Both are related by

$$\psi'(\boldsymbol{r},t) = \hat{U}_\mathrm{R}(\phi)\psi(\boldsymbol{r},t) \quad . \tag{2}$$

We do not know enough to construct $\hat{U}_\mathrm{R}(\phi)$ directly, but we can follow an alternative route: $\int\psi^\dagger\psi d^3x$ must be invariant. Hence, $\hat{U}_\mathrm{R}(\phi)$ is a unitary operator,

$$\int\psi^\dagger\psi d^3x = \int\psi'^\dagger\psi' d^3x = \int\psi^\dagger\hat{U}_\mathrm{R}^\dagger(\phi)\hat{U}_\mathrm{R}(\phi)\psi d^3x \quad , \tag{3}$$

and

$$\hat{U}_\mathrm{R}^\dagger(\phi)\hat{U}_\mathrm{R}(\phi) = \mathbb{1} \quad . \tag{4}$$

From (1.65), we can infer that the value of a rotated scalar function $f(\boldsymbol{r})$ at the rotated location equals that of the original function at the original location. If $f(\boldsymbol{r})$ is a product, e.g. $\psi^\dagger\psi$, this statement holds too, and we must take the related locations of the individual factors [cf. (1.65)]. This means that the scalar density $\psi^\dagger\psi(\boldsymbol{r},t)$ behaves under active rotations like a scalar wave function, and

$$\psi'^\dagger(\boldsymbol{r})\psi'(\boldsymbol{r}) = \psi^\dagger(\hat{R}^{-1}\boldsymbol{r})\psi(\hat{R}^{-1}\boldsymbol{r}) \quad . \tag{5}$$

We can write the rhs of (5) as a sum over the two spinor components. The terms of the sum are scalar functions which are transformed by $\exp(-(\mathrm{i}/\hbar)\phi\cdot\hat{\boldsymbol{L}})$, as in (1.71), i.e.

$$\begin{aligned}\psi^\dagger(\hat{R}^{-1}\boldsymbol{r})\psi(\hat{R}^{-1}\boldsymbol{r}) &= \sum_{m=1}^{2}\psi_m^*(\hat{R}^{-1}\boldsymbol{r})\psi_m(\hat{R}^{-1}\boldsymbol{r}) \\ &= \sum_{m=1}^{2}\left[\exp\left(-\frac{\mathrm{i}}{\hbar}\phi\cdot\hat{\boldsymbol{L}}\right)\psi_m(\boldsymbol{r})\right]^* \\ &\quad\times\left[\exp\left(-\frac{\mathrm{i}}{\hbar}\phi\cdot\hat{\boldsymbol{L}}\right)\psi_m(\boldsymbol{r})\right] \\ &= [\hat{U}_L(\phi)\psi(\boldsymbol{r})]^\dagger[\hat{U}_L(\phi)\psi(\boldsymbol{r})] \quad .\end{aligned}$$

In the last step we have introduced the operator

$$\hat{U}_L(\phi) = \exp\left(-\frac{\mathrm{i}}{\hbar}\phi\cdot\hat{\boldsymbol{L}}\right) \tag{6}$$

known from (1.70). $\hat{U}_L$ takes into account the orbital angular momentum of the components. We denoted this part by $\hat{U}_L$, as there will be another part originating from the spin. Clearly $\hat{U}_L(\phi)$ determines the behaviour under transformations dependent on the coordinates. Hence, we need another term that depends on the spinorial properties, as in the case of the vector field (cf. Example 1.9). This term $\hat{U}_\mathrm{S}$ must not be coordinate-dependent and, we can now write for the total rotation operator

$$\hat{U}_\mathrm{R}(\phi) = \hat{U}_\mathrm{S}(\phi)\hat{U}_L(\phi) \quad . \tag{7}$$

Relations (3) and (4) only hold if $\hat{U}_\mathrm{S}(\phi)$ is a *unitary* operator, because $\hat{U}_\mathrm{R}$ and $\hat{U}_L$ are unitary. So we make the following ansatz for $\hat{U}_\mathrm{S}(\phi)$:

$$\hat{U}_\mathrm{S}(\phi) = \exp\left(-\frac{\mathrm{i}}{\hbar}\phi\cdot\hat{\boldsymbol{a}}\right) \quad , \tag{8}$$

where the hermitian vector operator $\hat{\boldsymbol{a}}$ has still to be determined.

In order to find $\hat{\boldsymbol{a}}$, we have to study the transformation of the Pauli equation (1). We require that the spin vector $\boldsymbol{s}$ or – being identical up to a constant factor – the Pauli vector operator $\boldsymbol{\sigma} = [\hat{\sigma}_1, \hat{\sigma}_2, \hat{\sigma}_3]$ transforms under space rotations as a vector. This leads us to the relation

$$\hat{U}_\mathrm{S}^\dagger(\phi)\hat{\sigma}_i\hat{U}_\mathrm{S}(\phi) = R_{ji}\hat{\sigma}_j \quad , \tag{9}$$

which simply expresses that the matrices $\hat{\sigma}_i$ transform in the same manner as the components of a vector under space rotations. If (9) holds, we can be sure that $\boldsymbol{\sigma}$ really is a vector. Restricting ourselves to infinitesimal rotations $\delta\boldsymbol{\phi}$ by writing [cf. (1.61)]

$$R_{ji} = \delta_{ji} + \varepsilon_{imj}\delta\phi_m \tag{10}$$

and

$$\hat{U}_\mathrm{S} = \left\{\mathbb{1} - \frac{\mathrm{i}}{\hbar}\delta\phi_n\hat{a}_n\right\} \quad . \tag{11}$$

Writing (9) in the form

$$R_{ji}\hat{U}_\mathrm{S}^\dagger(\phi)\hat{\sigma}_i\hat{U}_\mathrm{S}(\phi) = \hat{\sigma}_j \tag{9a}$$

and using (10) and (11) yields

$$\begin{aligned}\hat{\sigma}_j &\simeq \{\delta_{ji} + \varepsilon_{imj}\delta\phi_m\}\left\{\mathbb{1} + \frac{\mathrm{i}}{\hbar}\delta\phi_l\hat{a}_l\right\}\hat{\sigma}_i\left\{\mathbb{1} - \frac{\mathrm{i}}{\hbar}\delta\phi_n\hat{a}_n\right\} \\ &\simeq \{\delta_{ji} + \varepsilon_{imj}\delta\phi_m\}\left\{\hat{\sigma}_i + \frac{\mathrm{i}}{\hbar}\delta\phi_n[\hat{a}_n,\hat{\sigma}_i]_-\right\} \\ &\simeq \hat{\sigma}_j - \varepsilon_{imj}\delta\phi_m\hat{\sigma}_i + \frac{\mathrm{i}}{\hbar}\delta\phi_n[\hat{a}_n,\hat{\sigma}_j]_- \end{aligned} \tag{12}$$

where we have omitted terms of higher order in $\delta\phi$. Since the $\delta\phi_m$ can be chosen arbitrarily, (12) implies the relation

$$[\hat{a}_n,\hat{\sigma}_j]_- = \mathrm{i}\hbar\varepsilon_{knj}\hat{\sigma}_k \quad . \tag{13}$$

The operators $\hat{a}_n$ must be represented by 2×2 matrices. Since the three Pauli matrices combined with the two-dimensional unit matrix form a complete basis for all hermitian 2×2 matrices, the $\hat{a}_n$ can be written as a linear combination, i.e.

$$\hat{a}_n = \alpha_{nm}\hat{\sigma}_m + \beta_n\mathbb{1} \quad , \tag{14}$$

where the coefficients α_{nm} and β_n are real (c-numbers). Without loss of generality, we may set $\beta_n = 0$, as the unit matrix only generates a (trivial) phase transformation in (8). Furthermore, it commutes with $\hat{\sigma}_j$ in (13) which now becomes an equation for the coefficients α_{nm}:

$$\alpha_{nm}[\hat{\sigma}_m,\hat{\sigma}_j]_- = \mathrm{i}\varepsilon_{njk}\hat{\sigma}_k \quad . \tag{15}$$

Taking the commutation relations of the Pauli matrices

$$[\hat{\sigma}_m,\hat{\sigma}_j]_- = 2\mathrm{i}\hbar\varepsilon_{mjk}\hat{\sigma}_k \tag{16}$$

into account, (15) reads

$$2\alpha_{nm}\varepsilon_{mjk}\hat{\sigma}_k = \hbar\varepsilon_{njk}\hat{\sigma}_k \quad . \tag{17}$$

This can only be fulfilled by

$$\alpha_{nm} = \tfrac{1}{2}\hbar\delta_{nm} \quad . \tag{18}$$

Thus, we get

$$\hat{a}_n = \tfrac{1}{2}\hbar\hat{\sigma}_n \tag{19}$$

and, after inserting this into (8)

$$\hat{U}_\mathrm{S}(\phi) = \exp(-\tfrac{1}{2}\mathrm{i}\hbar\phi\cdot\hat{\boldsymbol{\sigma}}) \quad . \tag{20}$$

Introducing the spin operator

$$\hat{\boldsymbol{s}} = \tfrac{1}{2}\hbar\hat{\boldsymbol{\sigma}} \quad , \tag{21}$$

we get the *complete rotation operator for two-component spinors* according to (7) and (8), i.e.

$$\begin{aligned}\hat{U}_\mathrm{R}(\phi) &= \hat{U}_L(\phi)\hat{U}_\mathrm{S}(\phi) = \exp\left[-\frac{\mathrm{i}}{\hbar}\phi\cdot\left(\hat{\boldsymbol{L}} + \frac{\hbar}{2}\hat{\boldsymbol{\sigma}}\right)\right] \\ &= \exp\left[-\frac{\mathrm{i}}{\hbar}\phi\cdot(\hat{\boldsymbol{L}} + \hat{\boldsymbol{s}})\right] \quad .\end{aligned} \tag{22}$$

We conclude therefore, that the two-component spinors transform according to

$$\psi'(\boldsymbol{r}) = \exp\left(-\frac{\mathrm{i}}{\hbar}\phi\cdot\hat{\boldsymbol{J}}\right)\psi(\boldsymbol{r}) \quad , \tag{23}$$

where the total angular momentum is given by

$$\hat{\boldsymbol{J}} = \hat{\boldsymbol{L}} + \hat{\boldsymbol{s}} \quad . \tag{24}$$

Such an expression is known to us from scalar (total angular momentum = orbital angular momentum) and vector (total angular momentum = orbital angular momentum + spin $1\hbar$) wave functions, but now the spin eigenvalue is $|\boldsymbol{s}| = 1/2\hbar$.

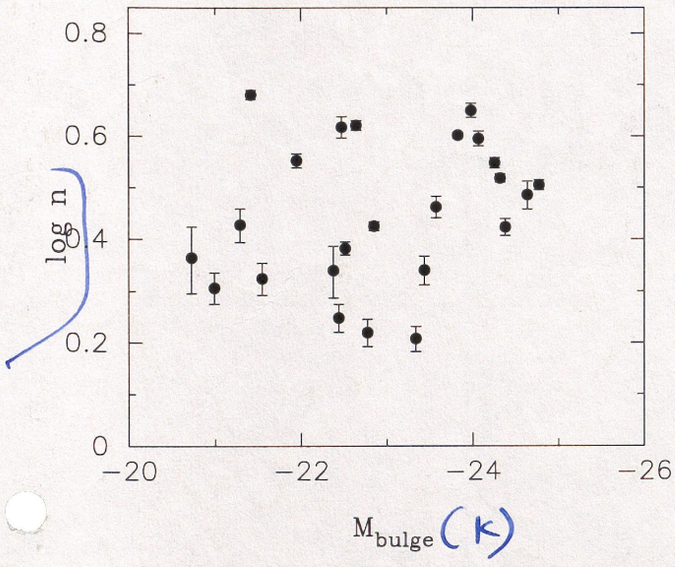
EXERCISE

1.13 Measuring the Direction of Electron Spins

Consider a device that allows the measurement of the component of spin of an electron in an arbitrary direction. Assume that such a measurement has been performed on a certain electron with respect to a certain direction (e_2), and the result is spin up ($\uparrow$) in the direction of e_2.

							Inputs being procured by post also.		quite enthusiastic about popularizing the NBSAP at all levels. more is input that goes into NBSAP recommendation
4.	Eastern Ghats	T. Pullaiah, SriKrishna Devaraja University, Ananthpur	- MoU signed on August 24, 2000 - DD Sent	EWG formed in August 2000.	Inaugural workshop held on December 2 and 3, 2000	Yes	Responsibilities allocated for preparing sector wise SAPs covering plant, animal, agriculture and cultural diversity. Region wise SAPs preparation allocations made. Co-ordinator has broacasted talks in Telegu (NBSAP) on Radio.		Draft document to be prepared by March 31, 2001. Proposal for finalizing SAP by May 2001.
5.	Gangetic plains	Jamal Khan, Wildlife Society of India	- MoU signed on August 17, 2000 - DD Sent.	EWG formed in December 2000.	First Meeting Held on March 22, 2001				
6.	North-East India	R.S.Tripathi, NEHU, Shillong	- MoU signed in March 2001 - DD Sent				Data collection underway as per co-ordinator.		
7.	Shivaliks	H.S.Mehta, ZSI, Solan	- MoU signed on October 31, 2000 - DD Sent	EWG formed in January 2000.	First meeting held on January 29, 2001.	Yes	Tasks allocated to EWG members. A small meeting held on February 7, 2001.		Next meeting in Jammu on April 1,2001
8	West Coast	M.N.Madhyastha, Mangalore University, Mangalore	- MoU signed on August 21, 2000 - DD Sent	EWG formed in July 2000.	First meeting held on August 26, 2000.	Yes	A small meeting held in Mumbai in October 2000. Brainstorming session with various stakeholders (fishermen, govt.officials)		A meeting scheduled at Gujarat could not be held because of the

Fig. 5



							on March 24, 2001.		earthquake. Madhyastha is trying to organize a meeting at Goa now and later in Kerala. He also desires to participate in the Lakshadweep NBSAP process, since this is part of west coast.	Had meeting with Venkataraman.
9	Western Himalaya	S.P.Singh, Kumaon University, Nainital	- MoU signed on August 26, 2000 - DD Sent	EWG formed in July 2000.	First meeting held on December 2 and 3, 2001	Yes	Responsibilities allocated to members. Members to conduct further interactions with people in their assigned areas/states/region till end January 2001. Based on report gap analysis to be done and SAP to be developed.			Virender to follow up
10.	Western Ghats	Ranjit Daniels, Chennai Snake Park, Chennai	- MoU signed on August 18, 2000 - DD Sent	EWG formed in August 2000.	First meeting held on September 15, 2000.	Yes	Meetings held on October 12, 2000 and November 4, 2000. Further meetings scheduled in 2001. Proposal for sending questionnaires to five states falling in the eco region. Concept notes and checklists/data on vertebrates prepared & circulated.			Ravi & Darshan to follow

1986ApJ...311..526H

2. Why are active elliptical galaxies able to produce very powerful radio sources, while active disk galaxies (e.g., Seyfert galaxies) apparently are not? This question has proved to be one of the most puzzling of all regarding active galaxies. Our results make the question even more puzzling, since they suggest that active galaxies which appear to be on-going or recently completed mergers between disk galaxies (e.g., 3C 305) *can* sometimes produce very powerful radio sources. This suggests that the ability to produce a very powerful radio source is not always determined by the nature of the central engine, but sometimes by the environment of the central engine. But in what way does the central region of a disk-disk merger resemble more strongly the central region of an elliptical than of a disk galaxy?

3. How can a morphologically peculiar galaxy produce a very large ($\gtrsim$300 kpc), straight radio source? The correlation between gas rotation and radio ejection axes seen in large radio sources (Simkin 1979; Kotanyi and Ekers 1979; Heckman *et al.* 1985) implies that a relationship between gas dynamics on scales $\lesssim$ few kpc from the nucleus and the radio ejection axis exists. Thus, the gas dynamics in this interior region must be orderly, even when severe disorder apparently exists on larger scales.

4. The study of the stellar population of radio galaxies at high redshift may tell us more about the cosmological evolution of the galaxy merger rate (e.g., Roos 1985) than about the *passive* evolution of elliptical galaxies. This conjecture is supported not only by our results on relatively low-redshift galaxies, but by recent investigations of high-redshift radio galaxies (Spinrad and Djorgovski 1984*a*, *b*; Lilly and Longair 1984; Eisenhardt and Lebofsky 1985). In particular, could the era of very powerful radio sources at $z \approx 2$ correspond to the epoch at which many(?) elliptical galaxies were produced by mergers of gas-rich systems (disk galaxies)?

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Item No. 3.3

Status of the EWGs as ofJanuary 26th , 2001

Sl No.	Name of Ecoregion	Name of Coordinator	Confirmed	Present at INW	Status reg formation of committee	Status reg. 1st meeting	Payment details	Follow up
1.	West Himalaya	S.P. Singh	Yes	Yes	EWG set up	Meeting held on 2nd & 3rd of December at Dehradun	Signed MoU received; DD sent	Informal meeting of coordinator and some members held with Kothari and Taneja in Almora. Minutes received
2.	Central Forest Belt	Dilip Gode	Yes	Yes	EWG set up (has made a EWG as well as an advisory group),	Meeting held on 22nd September at Nagpur, at Jagdalpur on 12th October	Signed MoU received; DD sent	Has indicated the area to be covered by the ecoregion Chellam to prepare a map & send to Dilip Gode, reminder for minutes sent by Kothari Next meeting in Bastar in March.
3.	Eastern Ghats	T. Pullaiah	Yes	Yes	EWG set up	Meeting held on 2nd & 3rd of December at Anantapur	Signed MoU received; DD sent	Minutes received
4.	Gangetic Plains	Jamal Khan	Yes	Yes	EWG set up		Signed MoU received; .DD sent	Bhatt & Kohli to visit AMU
5.	North East India	R.S. Tripathi	Yes	Yes	EWG set up		Signed MoU awaited	Reminder sent by BCIL & Kothari !
6.	West Coast	M.N. Madhyastha	Yes	Yes	EWG set up	Meeting held on 26th of August at Mangalore, attended	Signed MoU received, DD sent	Report of 1st meeting received. Brief details of meeting held in Mumbai also received.

						by Wafar		
7.	East Coast	L.Kannan	Yes	Yes	EWG set up		Signed MoU received, DD sent	Alterations to list suggested by Dr. Wafar - Boat Rallies planned. 1st mtg in Feb end.
8.	Aravalli Range	V.D. Sharma	Yes	No	EWG set up	Meeting held on 6th November, and on 8th December, meeting in Palya Kheda village on 6th Feb	Signed MoU received; DD sent	Sharma requested for 10% as final payment, MoEF has approved Minutes received
9.	Western Ghats	R.J. Ranjit Daniels	Yes	Yes	EWG set up	Meeting held on 15th September at Chennai; 12th October at Bangalore: 3rd & 4th November at Peechi	Signed MoU received; DD sent	Report of all meetings received, have asked for electronic version In electronic version of minutes on website - URL provided
10.	Shiwaliks	H.S. Mehta	Yes	NA	EWG set up(Kothari responded saying there is no NGO/Community participation	Meeting to be held on 29th Jan to be attended by Sarin	Signed MoU received; DD sent	1st meeting held. Minutes awaited - Report received from Sarin

						by Wafar		
7.	East Coast	L.Kannan	Yes	Yes	EWG set up		Signed MoU received, DD sent	Alterations to list suggested by Dr. Wafar
8.	Aravalli Range	V.D. Sharma	Yes	No	EWG set up		Signed MoU received; DD sent	Sharma requested for 10% as final payment, MoEF has approved
9.	Western Ghats	R.J. Ranjit Daniels	Yes	Yes	EWG set up	Meeting held on 15th September at Chennai; 12th October at Bangalore: 3rd & 4th November at Peechi	Signed MoU received; DD sent	Report of first meeting received, have asked for electronic version
10.	Shiwaliks	H.S. Mehta	Yes	NA	EWG set up(Kothari responded saying there is no NGO/Community participation	-	Signed MoU received; DD sent	

Wafar to pursue

KK to pursue

Virinder following up re. balanced composition

Item No. 4.3

Status of the EWGs as of December 12th , 2000

Sl No.	Name of Ecoregion	Name of Coordinator	Confirmed	Present at INW	Status reg formation of committee	Status reg. 1st meeting	Payment details	Follow up
1.	West Himalaya	S.P. Singh	Yes	Yes	EWG set up	Meeting held on 2nd & 3rd of December at Dehradun	Signed MoU received; DD sent	Informal meeting of coordinator and some members held with Kothari and Taneja in Almora. Minutes received
2.	Central Forest Belt	Dilip Gode	Yes	Yes	EWG set up (has made a EWG as well as an advisory group),	Meeting held on 22nd September at Nagpur, at Jagdalpur on 12th October	Signed MoU received; DD sent	Has indicated the area to be covered by the ecoregion Chellam to prepare a map & send to Dilip Gode
3.	Eastern Ghats	T. Pullaiah	Yes	Yes	EWG set up	Meeting held on 2nd & 3rd of December at Anantapur	Signed MoU received; DD sent	
4.	Gangetic Plains	Jamal Khan	Yes	Yes	~~Committee yet to be formed~~ Set up		Signed MoU received;	Reminder sent by BCIL
5.	North East India	R.S. Tripathi	Yes	Yes	EWG set up		Signed MoU awaited	Reminder sent by BCIL
6.	West Coast	M.N. Madhyastha	Yes	Yes	EWG set up	Meeting held on 26th of August at Mangalore, attended	Signed MoU received, DD sent	Report of 1st meeting received. Brief details of meeting held in Mumbai also received.

Concerns pe balance no govt no NGO.

~~Anant~~ To send clarification on MoU to MoEF

Status of the EWGs as of December 8th , 2000

Sl No.	Name of Ecoregion	Name of Coordinator	Confirmed	Present at INW	Status reg formation of committee	Status reg. 1st meeting	Payment details	Follow up
1.	West Himalaya	S.P. Singh	Yes	Yes	EWG set up	Meeting held on 2nd & 3rd of December at Dehradun	Signed MoU received; DD sent	Informal meeting of coordinator and some members held with Kothari and Taneja in Almora
2.	Central Forest Belt	Dilip Gode	Yes	Yes	EWG set up (has made a EWG as well as an advisory group),	Meeting held on 22nd September at Nagpur, at Jagdalpur on 12th October	Signed MoU received; DD sent	Has indicated the area to be covered by the ecoregion Chellam to prepare a map & send to Dilip Gode
3.	Eastern Ghats	T. Pullaiah	Yes	Yes	EWG set up	Meeting held on 2nd & 3rd of December at Anantapur	Signed MoU received; DD sent	
4.	Gangetic Plains	Jamal Khan	Yes	Yes	Committee yet to be formed		Signed MoU received;	Reminder sent by BCIL
5.	North East India	R.S. Tripathi	Yes	Yes	EWG set up		Signed MoU awaited	Reminder sent by BCIL
6.	West Coast	M.N. Madhyastha	Yes	Yes	EWG set up	Meeting held on 26th of August at Mangalore, attended	Signed MoU received, DD sent	Report of 1st meeting received

Dibble, To. To sow seeds in shallow holes made with a suitable instrument.

Dieback. (*a*) The progressive dying, usually backwards from the tip, of any portion of a plant. (BCFT). (*b*) The death of the shoot, the root remaining alive.

Diffuse-Porus Woods. *Hardwoods in which the pores (vessels) are scattered of diffused throughout the growth ring without any abrupt diminution in size from the spring wood to the summer wood. Cf. *Ring-porus woods.* (BCFT modif.).

Dioecious. Applied to flowering plants having unisexual (male or female) flowers on separate individuals. Cf. *Monoecious.*

Diploid (Genet.). Having the usual two *chromosome sets; individual so constituted, the normal condition for vegetative tissues of higher plants. Cf. *Haploid; Meiosis; Polyploid.* (BCFT).

Disafforest, To (Deprec.). Often used as a synonym for **dereserve*; it also covers corresponding action in the case of Protected *Forests.

Disclimax (Ecol.). Abbr. *Disturbance climax.* Any *proclimax that originates from and is maintained due to disturbance by man or domestic animals. See *Climax, biotic.*

Disforest, To. Syn. (Deprec.). *Deforest; Dereserve.*

Dispersion (Stat.). The range of variation of the values in a set of observations of a character common to the individuals of a *population. (BCFT).

d.o.b. Abbr. for *diameter over or outside bark.*

Dominant. (*a*) (Silvic.). A tree forming part of the dominant tree class. See *Tree classes,* Appendix II. (*b*) (Ecol.). That constituent of plant community which exerts the greatest influence on its character. (*c*) (Genl.). A species of the upper *canopy. (BCFT).

Dominant Character (Genet.). One that is fully developed whether the *gene producing it is present in one or both members of the *chromosome pair, i.e., whether the individual is *heterozygous or *homozygous. Anton. *Recessive character.* (BCFT).

Dominated. (*a*) (Silvic.). Applied to a tree that has its crown somewhat below the level reached by its dominant neighbours. See *Tree classes,* Appendix II. (*b*) (Ecol.). Applied to all forms of plants occupying a subordinate position with reference to dominant plants in the same community. (BCFT modif). See *Sub-dominant.*

Dormancy, Seed. A condition of mature viable seed in which germination is considerably delayed even though external conditions favour germination. (BCFT).

						by Wafar		
7.	East Coast	L.Kannan	Yes	Yes	EWG set up		Signed MoU received, DD sent	Alterations to list suggested by Dr. Wafar
8.	Aravalli Range	V.D. Sharma	Yes	No	EWG set up		Signed MoU received; DD sent	Sharma requested for 10% as final payment, MoEF has approved
9.	Western Ghats	R.J. Ranjit Daniels	Yes	Yes	EWG set up	Meeting held on 15th September at Chennai; 12th October at Bangalore: 3rd & 4th November at Peechi	Signed MoU received; DD sent	Report of first meeting received, have asked for electronic version
10.	Shiwaliks	H.S. Mehta	Yes	NA	EWG set up(Kothari responded saying there is no NGO/Community participation	-	Signed MoU received; DD sent	

10 10 9 5

Dormant (or Latent) Bud. A bud that remains inactive for an indefinite period until stimulated into growth. (BCFT).

Drag-hole. A hole cut at one end of a log to faciliate the attachment of gear for dragging.

Drainage Area. See *Catchment area.*

Drift (Geol.). Unconsolidated geological material that has been moved from the site of weathering. (BCFT).

Drift-wood. Timber that is a drift, beached, stranded or sunk (in a river, lake or sea). (See Sec. 45, Indian Forest Act). Cf. *Waif.*

Drill. (*a*) A line impressed on a seedbed for receiving seed.

(*b*) Any implement used for making such impressed lines.

d.u.b. Abbr. for *Diameter under bark.*

Duff. Syn. for *Mor.*

Dune. Moving hillock formed by shifting sand.

Durability. Of wood, the resistance offered by it against disease, decay and insect attack.

Duramen. See *Heartwood.*

Dysgenic (Genet.). Tending towards racial deterioration, in particular towards a loss of vigour and productiveness. Anton. *Eugenic.* (BCFT).

E

Earth, Tropical Red. A uniform, friable and porous red soil which may contain a *laterite horizon. (BCFT). Cf. *Loam, tropical red; Latosol.*

Echard (Ecol.). That fraction of the total amount of water in the soil which is not available for use by plants. See *Holard; Chresard.* Holard minus chresard = Echard.

Ecoclimate. Climate operating as an ecological factor. The sum of the meteorological factors within a habitat. (BCFT).

Ecocline. (Genet.). A *cline correlated with ecological factors. Cf. *Topocline.* (BCFT).

Ecology. The study of plants and/or animals in relation to their *environment. See *Autecology; Synecology.*

Ecotone (Ecol.). The transition zone (or tension belt) between two adjoining *communities irrespective of their ecological status.

Ecotype (*a*) (Ecol). An element of a Linnaean species separable on the basis of its association with particular *habitat factors. (*b*) (Genet.). A *biotype resulting from *selection with referenc to a particular *habitat. (BCFT modif.).

Ectodynamorphic (Ped.). Soils whose properties are influenced mainly by factors other than parent material. See *Endodynamorphic.* (SSSA).

Status of the EWGs as of November 25, 2000

Sl No.	Name of Ecoregion	Name of Coordinator	Confirmed	Present at INW	Status reg formation of committee	Status reg. 1st meeting	Payment details	Follow up
1.	West Himalaya	S.P. Singh	Yes	Yes	List received		Signed MoU received; DD sent	Informal meeting of Coordinator and some members held with Kothari and Taneja in Almora.
2.	Central Forest Belt	Dilip Gode	Yes	Yes	List sent (has made a EWG as well as an advisory group), additional names suggested	22nd August ?? meeting held on 18th September Meeting at Jagdalpur on 22nd October	Signed MoU received; DD sent	Has indicated the area to be covered by the ecoregion Chellam to prepare a map & send to Dilip Gode
3.	Eastern Ghats	T. Pullaiah	Yes	Yes	List sent., will additionally coopt forest conservators	Meeting on 2nd & 3rd Dec at Anantapur	Signed MoU received; DD sent	
4.	Gangetic Plains	Jamal Khan	Yes	Yes	List sent, additional names suggested		Signed MoU received; committee yet to be formed.	Reminder sent by BCIL
5.	North East India	R.S. Tripathi	Yes	Yes	List sent		Signed MoU awaited	Reminder sent by BCIL
6.	West Coast	M.N. Madhyastha	Yes	Yes	List sent, has been asked to prune it	Meeting held on 26th of August at Mangalore, attended by Wafar	Signed MoU received, DD sent	Report of 1st meeting received

priya ASSOCIATES

CREDIT-MEMO

No. 4623

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Working at Dept. T. No.

Particulars	Rate	Qty.	Amount Rs.	Ps.
(1) MAKE - T.V.S. washing Machine.		1	3400	00
MODEL - Super (Grey)				
CHASIS No. - 33381.				
Receipt given to Mr Jagle on 15-2-95. Cheque No:- 258442 dtd 21-6-95				
		Total	3400	00

Service sold vide this memo will be accepted for repairs between 9 a. m. & 12-30 p.m. service and guarantee of this article mentioned in this memo is offered by the manufacturer as per their terms and conditions for 25 months

B.S.T. No. N-25-F-15656 w.e.f. 8-4-93 C.S.T. No. MAH-N-25-F-9515

I/We hereby certify that my/our Registration Certificate under the Bombay Sales Tax Act, 1959 is in force on the date on which the sale of the goods specified in this Bill/Cash memorandum is made by us and that the memorandum of sale covered by this Bill/Cash memorandum has been effected by me/us in the regular course of my/our business.

(INITIAL BALANCE PER MONTH FOR MONTHS)

Customer's Signature | Guarantor's Signature | FOR PRIYA ASSOCIATES

Vijay

Signature

7.	East Coast	L.Kannan	Yes	Yes	List sent		Signed MoU received, DD sent	Alterations to list suggested by Dr. Wafar
8.	Aravalli Range	V.D. Sharma	Yes	No	List sent; women included on suggestion of Kothari		Signed MoU received; DD sent	Sharma requested for 10% as final payment, MoEF has approved
9.	Western Ghats	R.J. Ranjith Daniels	Yes	Yes	List sent	Meeting held on 15th September at Chennai; 12th October at Bangalore	Signed MoU received; DD sent	Report of first meeting received, have asked for electronic version
10.	Vindhya-Satpura Ranges	YASHADA to suggest a coordinator						
11.	Deccan (Maharashtra, Karnataka, Andhra)	As in no. 11						
12.	Shiwaliks	H.S. Mehta	Yes	NA	Sharma has sent in a list. Kothari responded saying there is no NGO/community participation	-	Signed MoU received; DD sent	

3rd and 4th Nov at Peechi (Kerala)

CREDIT-MEMO

Priya ASSOCIATES

No. 4623

SHOP NO. 5, ARYA SAMAJ, PIMPRI, PUNE-411 017. T 86006

DATE 17.5.95

D. C. No. 4284.

Mr. Saraseria. A/c Bajaj Auto Ltd.

Address "Vrundavan" Plot NO:. 180 Sector NO:. 27 'A'

Nigdi Pradhikaran Poona. 411044.

Working at

Dept. T. No.

Guarantor's Name

Address

Working at Dept. T. No.

Particulars	Rate	Qty.	Amount Rs.
(1) MAKE – T.V.S. washing Machine.		1	3400
MODEL – Super (Grey)			
CHASIS No. – 83381.			
		Total	3400

Service sold vide this memo will be accepted for repairs between 9 a. m. & 12-30 p.m. service and guarantee of this article mentioned in this memo is offered by the manufacturer as per their terms and conditions for 25 months.

B.S.T. No. N-25-F-15656 w.e.f. 8-4-93 C.S.T. No. MAH-N-25-F-9515

I/We hereby certify that my/our Registration Certificate under the Bombay Sales Tax Act, 1959 is in force on the date on which the sale of the goods specified in this Bill/Cash memorandum is made by us and that the memorandum of sale covered by this Bill/Cash memorandum has been effected by me/us in the regular course of my/our business.

(INITIAL BALANCE PER MONTH FOR MONTH

Customer's Signature | Guarantor's Signature | FOR PRIYA ASSOCIATES

Signature

Item No. 6.3

Status of the EWGs as of 30th October,2000

Sl No.	Name of Ecoregion	Name of Coordinator	Confirmed	Present at INW	Status reg formation of committee	Status reg. 1st meeting	Payment details	Follow up
1.	West Himalaya	S.P. Singh	Yes	Yes	List received		Signed MoU received; DD sent	
2.	Central Forest Belt	Dilip Gode	Yes	Yes	List sent (has made a EWG as well as an advisory group), additional names suggested	22nd August ?? meeting held on 18th September Meeting at Jagdalpur on 22nd October	Payable to Vidarbha Nature Conservation Society Signed MoU received; DD sent	Has indicated the area to be covered by the ecoregion Chellam to prepare a map & send to Dilip Gode
3.	Eastern Ghats	T. Pullaiah	Yes	Yes	List sent., will additionally coopt forest conservators		Wants funds in his name Signed MoU received; DD sent	
4.	Gangetic Plains	Jamal Khan	Yes	Yes	List sent, additional names suggested		Signed MoU received; committee yet to be formed.	
5.	North East India	R.S. Tripathi	Yes	Yes	List sent		Signed MoU awaited	
6.	West Coast	M.N. Madhyastha	Yes	Yes	List sent, has been asked to prune it	Meeting held on 26th of August at Mangalore, attended by Wafar	Wants it in his name Funds sent	Report of 1st meeting received

Item No. 6.3

7.	East Coast	L.Kannan	Yes	Yes	List sent		Payable to Registrar, Annamalai University, Annamalainagar 608002, under intimation to L. Kannan Signed MoU awaited	Alterations to list suggested by Dr. Wafar
8.	Aravalli Range	V.D. Sharma	Yes	No	List sent; women included on suggestion of Kothari		Signed MoU received; DD sent	Sharma requested for 10% as final payment, MoEF has approved
9.	Western Ghats	R.J. Ranjith Daniels	Yes	Yes	List sent	Meeting held on 15th September at Chennai; 12th October at Bangalore	Payable to Ranjith Daniels, Chennai Snake Park Trust Money sent	Report of first meeting received, have asked for electronic version
10.	Vindhya-Satpura Ranges	YASHADA to suggest a coordinator						Reminder sent to YASHADA by Kothari
11.	Deccan (Maharashtra, Karnataka, Andhra)	As in no. 11						Reminder sent to YASHADA by Kothari
12.	Shiwaliks	H.S. Mehta	Yes	-	-	-	Signed MoU awaited	

Status of the EWGs as of 16th October,2000

Sl No.	Name of Ecoregion	Name of Coordinator	Confirmed	Present at INW	Status reg formation of committee	Status reg. 1st meeting	Payment details	Follow up
1.	West Himalaya	S.P. Singh	Yes	Yes	List received		Signed MoU received; DD sent	
2.	Central Forest Belt	Dilip Gode	Yes	Yes	List sent (has made a EWG as well as an advisory group), additional names suggested	22nd August ?? meeting held on 18th September Meeting at Jagdalpur on 22nd October	Payable to Vidarbha Nature Conservation Society Signed MoU received; DD sent	Has indicated the area to be covered by the ecoregion Chellam to prepare a map & send to Dilip Gode
3.	Eastern Ghats	T. Pullaiah	Yes	Yes	List sent., will additionally coopt forest conservators		Wants funds in his name Signed MoU received; DD sent	
4.	Gangetic Plains	Jamal Khan	Yes	Yes	List sent, additional names suggested		Signed MoU received; committee yet to be formed.	
5.	North East India	R.S. Tripathi	Yes	Yes	List sent		MoU sent, but it has not been sent back	
6.	West Coast	M.N. Madhyastha	Yes	Yes	List sent, has been asked to prune it	Meeting held on 26th of August at Mangalore, attended by Wafar	Wants it in his name Funds sent	Report of 1st meeting received
7.	East Coast	L.Kannan	Yes	Yes	List sent		Payable to Registrar,	Alterations to list suggested by Dr.

- preparing leaflets, brochures for WCPA to present to the 2000 WCC and the 2002 WPC; and

- preparing different language versions of WCPA publications.

Regional Meetings

WCPA aims to hold a number of regional sessions by the time of the 2002 congress. In 1999, these will be in East Asia, South East Asia, with priority thereafter focussed on South Asia and Africa.

							Annamalai University, Annamalainagar 608002, under intimation to L. Kannan Signed MoU awaited	Wafar
8.	Aravalli Range	Dr. V.D. Sharma	Yes	No	List sent; women included on suggestion of Kothari		Signed MoU received; DD being sent	
9.	Western Ghats	R.J. Ranjit Daniels	Yes	Yes	List sent	Meeting held on 15th September at Chennai; 12th October at Bangalore	Payable to Ranjit Daniels, Chennai Snake Park Trust Money sent	Report of first meeting received have asked for electronic version
10.	Vindhya-Satpura Ranges	YASHADA to suggest a coordinator						Reminder sent to YASHDA by Kothari
11.	Deccan (Maharashtra, Karnataka, Andhra)	As in no. 11						Reminder sent to YASHDA by Kothari
12.	Shiwaliks	H.S. Mehta ~~being requested~~	Yes	NA				Sharma, NPD following up.
Total			10		9	3		

Confirmed – 10
Proposed – 2 (funds avail.-?)

INSIDE . . .

II A liberating experience

III The big names count

IV Bio-chemistry was his forte

THE MAG

Great Himalayan National Park

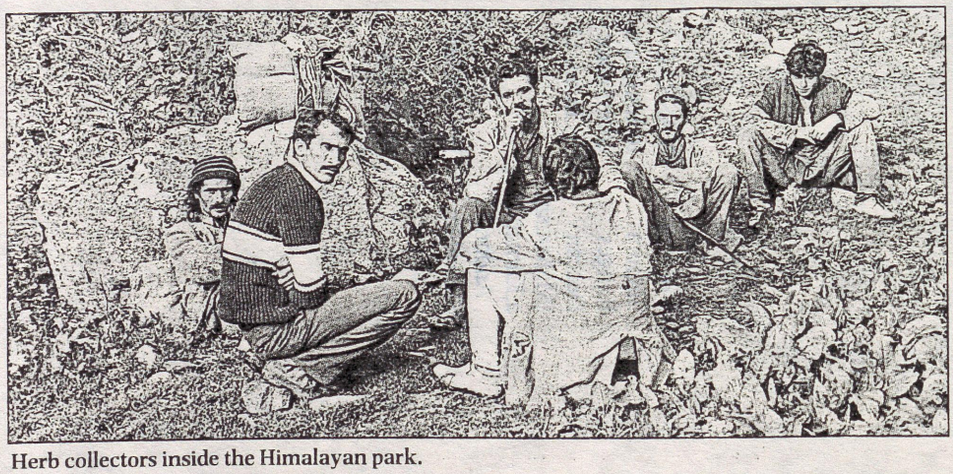
Losing a sanc

Environmental groups are up in arms again – this time over the Jiwanal valley and the Great Himalayan National Park in Kulu district of Himachal Pradesh. With a part of the valley being denotified to set up a hydel project, the ecological significance of the area has been ignored. Moreover, there are wider issues of conservation at stake. PANKAJ SEKHSARIA on the battle to save this pristine habitat.



Himalayan Environmental Society

The Parbati range in the Jiwanal Valley in Himachal Pradesh.



Ashish Kothari

Herb collectors inside the Himalayan park.

AS ORIGINALLY planned, Prime Minister Atal Bihari Vajpayee would have celebrated June 5, World Environment Day, by laying the foundation for the 2051 MW Parbati hydel electric project in Kulu district of Himachal Pradesh. More pressing concerns – particularly the situation in Kargil–forced him to postpone his trip. It may also have saved him from an embarrassing situation as the project has been in the eye of controversy for some time.

About 10.6 sq.kms of the Great Himalayan National Park (GHNP) in Kulu district had been denotified to lay the foundation for the project. In a quick, efficient and quiet operation in the last week of May, the State Government knocked off 10.6 sq.kms. of the Jiwanal valley in the north, from the boundary of the park and importantly, from

(status as of 2.9.2000)

List of confirmed EWG coordinators to whom MoU has been sent

1. Shri Dileep Gode,
Vidarbha Nature Conservation Society,
Tidke Ashram,
Ganeshpeth,
Nagpur – 440 018
Maharashtra

2. Dr. Ishwar Prakash, – Withdrawn
Desert Regional Station,
Zoological Survey of India,
107, K.N. Nagar, Chopasani Road,
Jodhpur – 342 009
Rajasthan

3. Dr. Jamal Khan,
Wildlife Society of India,
Centre of Wildlife and Ornithology,
Aligarh Muslim University,
Aligarh – 202 002
Uttar Pradesh

4. Dr. L. Kannan,
Centre for Advance Study in
Marine Biology,
Annamalai University,
Parangipettai – 608 502
Tamil Nadu

5. Dr. M.N. Madhyastha,
Department of Biosciences,
Mangalore University,
Mangala Gangotri
Mangalore – 574 199
Karnataka
DD sent on 29.08.2000

6. Dr. R.S. Tripathi,
Coordinator,
Regional Centre, NAEB,
Department of Botany, NEHU,
Shillong – 793 022
Meghalaya

7. Dr. Ranjit R.J. Daniels,
Honorary Secretary,
Chennai Snake Park, Raj Bhavan Post,
Chennai – 600 022
Tamil Nadu
DD sent on 29.08.2000

8. Dr. S. P. Singh,
Professor & Head,
Department of Botany, D.S.B. Campus,
Kumaon University,
Nainital – 263 002
Uttar Pradesh

9. Dr. T. Pulliah,
Department of Botany,
Sri Krishna Devaraja University,
Ananthpur – 515 003
Andhra Pradesh
DD sent on 1.09.2000

case, in which four n-bounce paths contribute for all n greater than 1.) It must be emphasized that these particular bounds for n, and the classification of the solutions (a), (b), (c), and (d), cannot be applied for arbitrary unequal R_0 and R, but there are always some bounds on the n values of contributing paths. This is because between bounces the paths are of form (2.5), for which there is a fixed ratio between maximum radius and the interval between zero crossings. For any t value, then, there is time for only so many bounces high enough to reach a given R_0 or R value.

The evaluation of $G^{(\mathrm{WKB})}$ proceeds from these results. Expression (3.1) eventually takes the form

$$G^{(\mathrm{WKB})}[R,t;R_0,0] = \sum_{n=0}^{n_{\max}(R_0,R,t)} \sum_k P_k^{(n)} \left(\frac{P_k^{(n)} F_k^{(n)}}{4\pi i} \right)^{1/2} \exp\left(i S_k^{(n)} \right) , \qquad (3.9)$$

with n the number of bounces, as above, and k labelling the n-bounce paths, the range of k depending of course on n. The classical actions $S_k^{(n)}$ are given by Eqs. (3.3), (3.4), and (3.6). The functional determinants $F_k^{(n)}$ are:

$$F^{(0)} = \frac{32/(\alpha t)}{4 + \alpha^2 t_0 (t - t_0)} , \qquad (3.10a)$$

with α and t_0 from Eqs. (3.2);

$$F^{(1)} = -\frac{t_1^4/(t_1 - R_0)^2}{t^2 + 2R_0 t - 6tt_1 + 6t_1^2 + 2(R - R_0)t_1} , \qquad (3.10b)$$

with t_1 from Eq. (3.5);

$$F^{(n)} = \frac{t_1^2 (t_n - t_1)/(t_1 - R_0)}{t[(4n^2 - 2n - 1)t_1 - (2n-1)t_n - 2(n-1)R_0] + R[t_n - (2n-1)t_1] \\ +2n(t_1^2 + t_n^2) - 4n^2 t_1 t_n + R_0[(2n-1)t_n - t_1]} , \qquad (3.10c)$$

for $n \geq 2$, with t_1 and t_n from Eqs. (3.7a) and (3.7c). The phase factors are $P_k^{(n)} = +1$ if $F_k^{(n)}$ has the same sign as $F^{(0)}$ and $P_k^{(n)} = -1$ if it has the opposite sign. This choice of phases ensures the boundary conditions $G^{(\mathrm{WKB})}[0,t;R_0,0] = 0$ and $G^{(\mathrm{WKB})}[R,t;0,0] = 0$, hence the condition $\psi(0,t) = 0$ for any wormhole wave function, via the cancellation of contributions from paths differing by one bounce. For example, as R approaches zero, the contribution of the direct (zero-bounce) classical path becomes equal in magnitude and opposite in sign to that of a one-bounce path[1] with bounce time approaching t. This phase prescription accords

[1] The absolute value of the argument of the logarithm is taken in the action (2.6) and subsequent expressions to ensure that this cancellation still occurs when the direct path is just timelike and the one-bounce path just spacelike, i.e., for $R_0 \approx t$ and R approaching zero.

EWG-General 8.1.6 \Log \ Status Chart \ Ver. 6 AK, SP \ ~~24.8.2000~~

BT 4.9.2000

Item No. 4.3

Status of the EWGs as of ~~24th August,~~ 4th Sept 2000

Sl No.	Name of Ecoregion	Name of Coordinator	Confirmed	Present at INW	Status reg formation of committee	Status reg. 1st meeting	Payment details	Follow up
1.	West Himalaya	S.P. Singh	Yes	Yes	~~List received~~			Reminder regarding formation of their group sent by Kothari
2.	Central Forest Belt	Dilip Gode	Yes	Yes	List sent (has made a EWG as well as an advisory group), additional names suggested	22nd August	Payable to Vidarbha Nature Conservation Society	Has indicated the area to be covered by the ecoregion Chellam to prepare a map & send to Dilip Gode
3.	Eastern Ghats	T. Pullaiah	Yes	Yes	List sent., will additionally coopt forest conservators		Wants funds in his name	DD sent
4.	Gangetic Plains	Jamal Khan	Yes	Yes	List sent, additional names suggested			funds not yet sent as final list awaited
5.	North East India	R.S. Tripathi	Yes	Yes	List sent			DD sent
6.	West Coast	M.N. Madhyastha	Yes	Yes	List sent, has been asked to prune it		Wants it in his name	DD sent
7.	East Coast	L.Kannan	Yes	Yes	List sent		Payable to Registrar, Annamalai University, Annamalainagar 608002, under intimation to L. Kannan	Alterations to list suggested by Dr. Wafar
8.	Aravalli Range	Ishwar Prakash/VD Sharma	Declined	No	List sent; has said he is contacting members, wants additional NGO names??		Written asking the Director for the Desert Regional Station to be via media for funds??	MoU now to be sent to VD Sharma.
9.	Western Ghats	R.J. Ranjit Daniels	Yes	Yes	List sent		Payable to Ranjit Daniels, Chennai Snake Park Trust	DD sent
11.	Vindhya-Satpura Ranges	YASHADA to suggest a coordinator						Reminder sent to YASHADA by Kothari

Continued

12.	Deccan (Maharashtra,Karnataka, Andhra)	As in no. 11						Reminder sent to YASHADA by Kothari

5

Status of the EWGs as of 24th August, 2000

Sl No.	Name of Ecoregion	Name of Coordinator	Confirmed	Present at INW	Status reg formation of committee	Status reg. 1st meeting	Payment details	Follow up
1.	West Himalaya	S.P. Singh	Yes	Yes				Reminder regarding formation of their group sent by Kothari
2.	Central Forest Belt	Dilip Gode	Yes	Yes	List sent (has made a EWG as well as an advisory group), additional names suggested	22nd August	Payable to Vidarbha Nature Conservation Society	Has indicated the area to be covered by the ecoregion Chellam to prepare a map & send to Dilip Gode
3.	Eastern Ghats	T. Pullaiah	Yes	Yes	List sent., will additionally coopt forest conservators		Wants funds in his name	
4.	Gangetic Plains	Jamal Khan	Yes	Yes	List sent, additional names suggested			
5.	North East India	R.S. Tripathi	Yes	Yes	List sent			
6.	West Coast	M.N. Madhyastha	Yes	Yes	List sent, has been asked to prune it	Postponed meeting to 26th August due to delay in receving funds	Wants it in his name	
7.	East Coast	L.Kannan	Yes	Yes	Has indicated that he will send list		Payable to Registrar, Annamalai University, Annamalainagar 608002, under intimation to L. Kannan	Reminder for forming committee sent by Kothari
8.	Aravalli Range	Ishwar Prakash	Yes	No	List sent; has said he is contacting members, wants additional NGO names		Written asking the Director for the Desert Regional Station to be via media for funds	Additional NGO names sent by Kothari
9.	Western Ghats	R.J. Ranjit Daniels	Yes	Yes	List sent		Payable to Ranjit Daniels, Chennai Snake Park Trust	
11.	Vindhya-Satpura Ranges	YASHADA to suggest a coordinator						Reminder sent to YASHADA by Kothari
12.	Deccan (Maharashtra,Karnataka	As in no. 11						Reminder sent to YASHADA by Kothari

has been corrected for atmospheric extinction, it can be transformed to a standardized magnitude (M_λ) by

$$M_\lambda = m_{\lambda 0} + \beta_\lambda C + \gamma_\lambda \tag{1.16}$$

where C is the standard color index of the star, β_λ and γ_λ are the color coefficient and zero-point constant, respectively, of the instrument. The standardized color index is given by

$$C = \delta c_0 + \gamma_c \tag{1.17}$$

where c_0 is the observed color index which has been corrected for atmospheric extinction. Again, δ is a color coefficient and γ_c is a zero-point constant. These coefficients and zero-point constants are determined for each photometer system by the observation of standard stars. The details of this are taken up in Chapter 4.

1.10 OTHER SOURCES ON PHOTOELECTRIC PHOTOMETRY

There are several sources relating to photoelectric photometry that are available in good astronomical libraries. Some of these are obscure and are difficult to locate. Most of the references listed below are out of print or are sections of expensive texts. However, if you are interested in more detail than can be found in this text, we recommend looking at those references available in your area.

- Irwin, J. B., ed. 1953. *Proceedings of the National Science Foundation Astronomical Photoelectric Conference.* Flagstaff, Arizona: Lowell Observatory. This book has considerable detail on sky conditions and site selections for observatories.
- Wood, F. B., ed. 1953. *Astronomical Photoelectric Photometry.* Washington, D.C.: AAAS. This is the proceedings of a symposium on December 31, 1951. Contains many references of early photometry and describes DC, AC, and pulse-counting techniques as practiced at that time.
- Hiltner, W. A., ed. 1962. *Astronomical Techniques.* Chicago: Univ. of Chicago Press. Three chapters of this book are of particular interest: Lallemand ("Photomultipliers"), Johnson ("Photoelectric Photometers and Amplifiers"), and Hardie ("Photoelectric Reductions").
- Whitford, A. E. 1962. "Photoelectric Techniques." In *Handbuch der Physik.* Berlin: Springer-Verlag Co. Edited by S. Flugge, p. 240. This chapter is a well-rounded description of photomultiplier tube photometry.
- Wood, F. B. 1963. *Photoelectric Astronomy for Amateurs.* New York: Macmillan. This text is low level and understandable, but is incomplete and contains out of date circuitry.
- *AAVSO,* 1967. *Manual for Astronomical Photoelectric Photometry.* Cambridge: AAVSO. The AAVSO has a short manual to start observers on photometry.
- Golay, M. 1974. *Introduction to Astronomical Photometry.* Holland: D. Reidel. For complete theoretical descriptions of wide-band photometry, this text is hard to beat. Requires extensive mathematics and astronomy background.
- Young, A. T. 1974. In *Methods of Experimental Physics: Astrophysics* **vol. 12A**. Edited by N. Carleton. New York: Academic Press. This is extremely complete in the problems arising in photometry and should be required reading.

In addition, some professional observatories have their own small manuals that can be obtained directly from them.

Amateur and professional astronomers interested in photometry are strongly encouraged to join the International Amateur-Professional Photoelectric Photometry (IAPPP) association. The goal of this group is to foster communication on the practical aspects of photometry. This is accomplished through annual IAPPP symposia and the IAPPP Communications. Interested persons should contact either of the following people:

Dr. Terry D. Oswalt
Dept. of Physics and Space Sciences
Florida Institute of Technology
Melbourne, FL 32901

Mr. Robert C. Reisenweber
Rolling Ridge Observatory
3621 Ridge Parkway
Erie, PA 16510
U. S. A.

Status of the EWGs as of 2nd August, 2000

Sl No.	Name of Ecoregion	Name of Coordinator	Confirmed	Present at INW	Status reg formation of committee	Status reg. 1st meeting	Payment details	Follow up
1.	West Himalaya	S.P. Singh	Yes	Yes				Reminder regarding formation of their group sent by Kothari
2.	Central Forest Belt	Dilip Gode	Yes	Yes	List sent (has made a EWG as well as an advisory group), additional names suggested	22nd August	Payable to Vidarbha Nature Conservation Society	Has indicated the area to be covered by the ecoregion Chellam to prepare a map & send to Dilip Gode
3.	Eastern Ghats	T. Pulliah	Yes	Yes				Can Satheesh, Sarat, or Shruti follow this up?
4.	Gangetic Plains	Jamal Khan	Yes	Yes	List sent, additional names suggested			
5.	North East India	R.S. Tripathi	Yes	Yes	List sent, additional names suggested			
6.	West Coast	M.N. Madhyastha	Yes	Yes	List sent, has been asked to prune it	Postponed meeting to last week August as funding situation unclear	Wants it in his name	
7.	East Coast	L.Kannan	Yes	Yes	Has indicated that he will send list		Payable to Registrar,	Reminder for forming committee sent by

Therefore the probability of obtaining an angle $\psi_1 < \psi < \psi_2$, for given ψ_1 and ψ_2 is

$$p(\psi_1, \psi_2) = \frac{1}{2}(\cos\psi_2 - \cos\psi_1). \tag{1.89}$$

Now given a value of β the probability $p(> \beta_a)$ of obtaining an apparent transverse speed which exceeds some value β_a is given by Equation 1.89, with ψ_1 and ψ_2 being the two values of the angle of inclination between which the apparent transverse speed exceeds β_a. Equation 1.87 can be expressed as a quadratic in $\cos\psi$ using which it is very simple to show (Cawthorne et al. (1986)) that

$$p(> \beta_a) = \frac{1}{2}(\cos\psi_2 - \cos\psi_1) = \frac{1}{1+\beta_a^2}\sqrt{1 - \frac{\beta_a^2}{\gamma^2 - 1}}. \tag{1.90}$$

The probability is maximised when $\beta \to 1$, with

$$p_{max}(\beta_a) = \frac{1}{1+\beta_a^2}, \tag{1.91}$$

and we can obtain an upper limit on $p(> \beta_a)$ even when the true speed β is not known.

1.8.3 Flux Amplification

When a source consisting of radiating particles moves at relativistic speed towards the observer, the observed flux is Doppler boosted to levels which can be far higher than the flux observed when the source is stationary. On the other hand when the source moves away the observed flux can be greatly reduced, so that features which are intrinsically symmetric, like a two-sided radio jet, can appear to be one sided.

Consider a source of radiation which moves towards the observer as in Figure 1.8.1. To obtain an expression for the Doppler boosting of the flux we need to perform a Lorentz transformation between the rest frame of the source and that of the observer (cosmological factors will be introduced later). If ν and ν' are the observer frame and rest frame frequency respectively, we have (see Appendix ??)

$$\nu = \mathcal{D}\nu', \tag{1.92}$$

where the Doppler boosting factor $\mathcal{D}$ is given by

$$\mathcal{D} = \frac{1}{\gamma(1 - \beta\cos\psi)}. \tag{1.93}$$

							Annamalai University, Annamalainagar 608002, under intimation to L. Kannan	Kothari
8.	Aravalli Range	Ishwar Prakash	Yes	No	List sent; has said he is contacting members, wants additional NGO names			TPCG to suggest additional NGO names
9.	Western Ghats	R.J. Ranjit Daniels	Yes	Yes	List sent		Payable to Ranjit Daniels, Chennai Snake Park Trust	
11.	Vindhya-Satpura Ranges	YASHADA to suggest a coordinator						Reminder sent to YASHADA by Kothari
12.	Deccan (Part of Maharashtra, Karnataka, Andhra)	As in no. 11						Reminder sent to YASHADA by Kothari

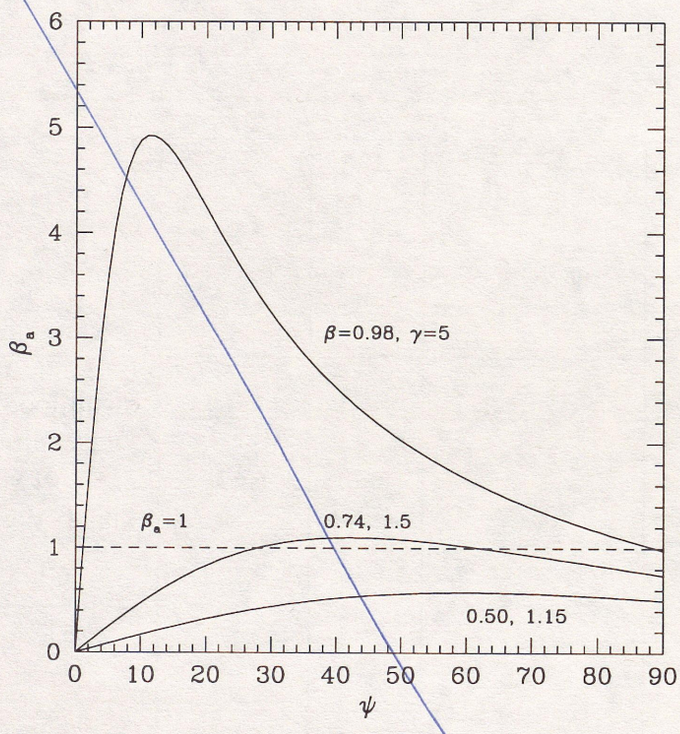


Fig. 1.7. Apparent transverse speed as a function of the angle between blob velocity $\overline{v}$ and the line of sight. Values of β and the Lorentz factor γ are indicated against each curve.

probability distribution of the angles made with the line of sight to the observer is

$$p(\psi)\, d\psi = \frac{1}{2} \sin\psi\, d\psi, \quad 0 < \psi < \pi. \tag{1.88}$$

Status of the EWGs as of 25th July 2000

Sl No.	Name of Ecoregion	Name of Coordinator	Confirmed	Present at INW	Post-INW Follow-up	Payment details	Status
1.	West Himalaya	S.P. Singh	Yes	Yes			Reminder from BCIL regarding formation of their group
2.	Central Forest Belt	Dilip Gode	Yes	Yes	Has sent in a list of members. Has indicated the area to be covered by the ecoregion		Chellam & Kothari to prepare a map & send to Dilip Gode
3.	Eastern Ghats	T. Pulliah	Yes	Yes			Reminder to be sent by BCIL
4.	Gangetic Plains	Jamal Khan	Yes	Yes			
5.	North East India	R.S. Tripathi	Yes	Yes			Reminder for forming committee
6.	West Coast	M.N. Madhyastha	Yes	Yes	List of members being drawn up, meeting planned for 1st week of August	Wants it in his name	
7.	East Coast	L.Kannan	Yes	Yes			Reminder for forming committee
8.	Aravalli Range	Ishwar Prakash	Yes	No	Has subsequently corresponded, and asked for suggestions on members; suggestions sent to him		
9.	Shivaliks	Possible coordinator to be suggested; Virinder has reiterated					TPCG decided to drop this EWG

The flux ratio for the point source and jet cases is shown in Figure 1.8.3. Given an observed flux ratio, it is not possible to determine the value of β as well as the inclination angle. However, assuming the extreme relativistic case $\beta = 1$, an upper limit to the angle of inclination can be obtained :

$$\psi \leq \frac{R^{1/(2+\alpha)} - 1}{R^{1/(2+\alpha)} + 1}, \quad R = \frac{F_{in}}{F_{out}}. \tag{1.100}$$

The Doppler boosting factor $\mathcal{D}$ increases monotonically as the angle of inclination decreases from 90° to 0°, with $\mathcal{D}_{min} = \mathcal{D}(90°) = 1/\gamma$ and $\mathcal{D}_{max} = \mathcal{D}(0°) = \gamma(1+\beta)$. Some useful relations which connect γ, $\mathcal{D}$, ψ and the apparent speed β_a are

$$\gamma = \frac{\beta_a^2 + \mathcal{D}^2 + 1}{2\mathcal{D}}, \tag{1.101}$$

$$\tan\psi = \frac{2\beta_a}{\beta_a^2 + \mathcal{D}^2 - 1}, \tag{1.102}$$

$$\frac{1+\beta\cos\psi}{1-\beta\cos\psi} = \beta_a^2 + \mathcal{D}^2. \tag{1.103}$$

These relations have been used by Ghisellini et al. (1993) to put limits on the Lorentz factor and the angle of inclination using observable quantities.

1.8.4 Variability

Consider a source in which the flux density changes in a time $\sim \Delta t_{var}$. By the usual argument which relates variability to source size, the linear size of the source is $\sim c\Delta t_{var}$. If the source is at a distance D from the observer, the angular size is $\theta \sim c\Delta t_{var}/D$. If the $F(\nu)$ is the flux density of the source, using Equation 1.55 the *variability brightness temperature* is defined by

$$T_{var} = \frac{F(\nu)D^2}{2k\nu^2\Delta t_{var}^2}. \tag{1.104}$$

In the case of many sources with observed rapid variability the estimated brightness temperature exceeds the temperature at which catastrophic energy loss through the inverse Compton process dominates (see Section 2.4). In fact it was this problem of rapid variability which led Rees (1967) to propose relativistic motion in the source. To see how this helps, one needs only to notice that if the source is in motion, it is not the observed time scale Δt_{var} which should go into determining the

		Mr. Mehta's name					
10.	Western Ghats	R.J. Ranjit Daniels	Yes	Yes	Has suggested list of members		
11.	Vindhya-Satpura Ranges	New region, suggested during the INW, and YASHADA will suggest a coordinator					Retain & wait for coordinators name
12.	Deccan (Part of Maharashtra & Karnataka)	As in no. 11					Retain & wait for coordinators name

It is shown in Appendix ?? that $I(\nu)/\nu^3$ is a Lorentz invariant, where $I(\nu)$ is the intensity of radiation. It follows that the transformation law for the intensity is

$$I(\nu) = \mathcal{D}^3 I'(\nu'). \tag{1.94}$$

For an unresolved source which is optically thin, or optically thick and spherically symmetric, the flux $F(\nu) \propto I(\nu)$ and it transforms in the same way as the intensity. For a source with a power-law spectrum $F(\nu) \propto \nu^{-\alpha}$ the transformation can be written as

$$F(\nu) = \mathcal{D}^{3+\alpha} F'(\nu), \tag{1.95}$$

which shows the boosting of the observed flux over the rest frame flux. Now consider two identical sources which move in opposite directions with the same speed v and line of sight angle ψ and $\pi + \psi$ respectively. If F_{in} is the observed flux from the source moving towards the observer and F_{out} is the flux from the source moving away, we have

$$\frac{F_{in}}{F_{out}} = \left(\frac{1+\beta\cos\psi}{1-\beta\cos\psi}\right)^{3+\alpha}. \tag{1.96}$$

The boosting formula is somewhat different when the source is a jet like feature (which may be considered to be made up of a number of unresolved components). In such a case the observed flux is obtained by integrating over the area of the feature. Following Blandford (1990) we can write

$$F(\nu) = \int I(\nu)\, d\Omega\, dl = \int j_\nu \frac{da\, dl}{d_A^2}, \tag{1.97}$$

where j_ν is the emissivity, $d\Omega$ is an element of solid angle, da is an area element normal to the line of sight and d_A is the distance to the source. † The emissivity transforms as $j_\nu = \mathcal{D}^2 j'(\nu')$ which for a power-law spectrum becomes $j_\nu = \mathcal{D}^{2+\alpha} j'(\nu)$. Introducing the volume element $dV = dA\, dl$, the transformation law for the flux becomes

$$F(\nu) = \frac{\mathcal{D}^{2+\alpha}}{d_A^2} \int j'(\nu)\, dV = \mathcal{D}^{2+\alpha} S'(\nu), \tag{1.98}$$

and the ratio of the flux from an advancing jet to an identical receding jet is

$$\frac{F_{in}}{F_{out}} = \left(\frac{1+\beta\cos\psi}{1-\beta\cos\psi}\right)^{2+\alpha}. \tag{1.99}$$

† the relation between solid angle and area elements can be preserved over cosmological distances by interpreting d_A as the angular diameter distance as explained in Section ??.

Status of the EWGs as of 17th July 2000

Sl No.	Name of Ecoregion	Name of Coordinator	Confirmed	Present at INW	Post-INW Follow-up	Payment details
1.	West Himalaya	S.P. Singh	Yes	Yes		
2.	Central Forest Belt	Dilip Gode	Yes	Yes	Has sent in a list of members. Has indicated the area to be covered by the ecoregion	
3.	Eastern Ghats	T. Pulliah	Yes	Yes		
4.	Gangetic Plains	Jamal Khan	Yes	Yes		
5.	North East India	R.S. Tripathi	Yes	Yes		
6.	West Coast	M.N. Madhyastha	Yes	Yes	List of members being drawn up, meeting planned for 1st week of August	Wants it in his name
7.	East Coast	L.Kannan	Yes	Yes		
8.	Aravalli Range	Ishwar Prakash	Yes	No	Has subsequently corresponded, and asked for suggestions on members; suggestions sent to him	
9.	Shivaliks	Possible coordinator to be suggested; Virinder has reiterated Mr. Mehta's name				
10.	Western Ghats	R.J. Ranjit Daniels	Yes	Yes	Has suggested list of members	
11.	Vindhya-Satpura Ranges	New region, suggested during the INW, and YASHADA will suggest a coordinator				
12.	Deccan	As in no. 11				

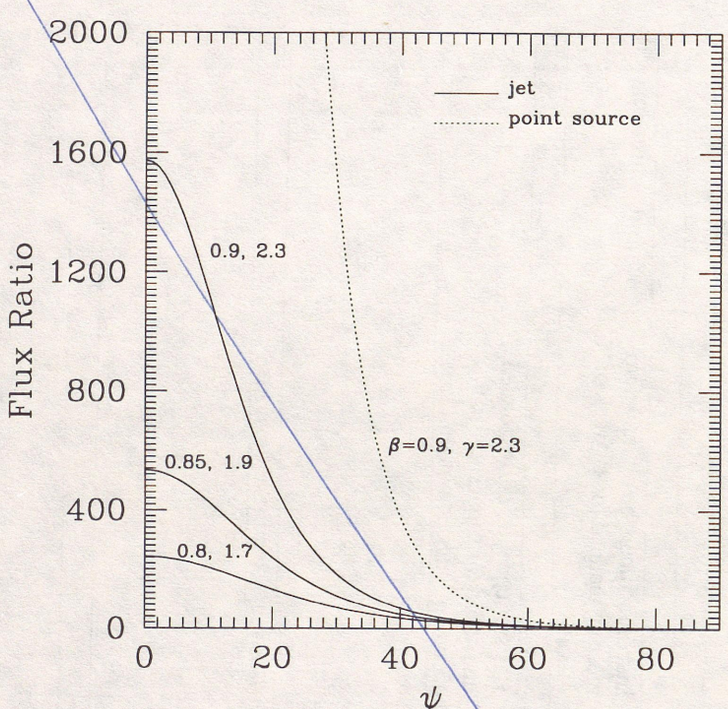


Fig. 1.8. The observed flux ratio of advancing and receding jets for $\beta = 0.8 - 0.9$ and for the point source case with $\beta = 0.9$. A power-law spectrum with $\alpha = 0.5$ is assumed.

limit on the size of the emitting region. The appropriate quantity is the variability time scale in the rest frame of the source, given by

$$\Delta t'_{var} = \mathcal{D} \Delta t_{var} \tag{1.105}$$

where $\mathcal{D}$ is the Doppler boosting factor introduced in Equation 1.93. The source size is therefore $R \sim c\Delta t'_{var} \sim c\mathcal{D}\Delta t_{var}$, and the solid angle subtended at the source is $\sim (c\mathcal{D}\Delta t_{var}/D)^2$. The observed flux is then

Status of the EWG's as of 13th July 2000

Sl No.	Name of Ecoregion	Name of Coordinator	Confirmed	Present at INW	Post-INW Follow-up	Payment details
1.	West Himalaya	S.P. Singh	Yes	Yes		
2.	Central Forest Belt	Dilip Gode	Yes	Yes	Boundaries of this ecoregion need to be delineated by the coordinator; will be much smaller than area marked in current map	
3.	Eastern Ghats	T. Pulliah	Yes	Yes		
4.	Gangetic Plains	Jamal Khan	Yes	Yes		
5.	North East India	R.S. Tripathi	Yes	Yes		
6.	West Coast	M.N. Madhyastha	Yes	Yes	List of members being drawn up, meeting planned for 1st week of August	Wants it in his name
7.	East Coast	L.Kannan	Yes	Yes		
8.	Aravalli Range	Ishwar Prakash	Yes	No	Has subsequently corresponded, and asked for suggestions on members	
9.	Shivaliks	Possible coordinator to be suggested; Virinder has reiterated Mr. Mehta's name				
10.	Western Ghats	R.J. Ranjit Daniels	Yes	Yes	Has suggested list of members	
11.	Vindhya-Satpura Ranges	New region, suggested during the INW, and YASHADA will suggest a coordinator				
12.	Deccan	As in no. 11				

given by

$$F(\nu) = I(\nu)\left(\frac{c\mathcal{D}\Delta t_{var}}{D}\right)^2, \tag{1.106}$$

where $I(\nu)$ is the intensity in the observer's frame. Substituting this in Equation 1.104, using the transformations in Equations 1.92 and 1.94 and introducing the rest frame brightness temperature $T' = I'(\nu')c^2/2k^2\nu'^2$ we get

$$T_{var} = \mathcal{D}^3 T'. \tag{1.107}$$

Now for a source with superluminal motion we have for the angle of inclination $\sin\psi \sim 1/\gamma$ so that $\mathcal{D} = \gamma^{-1}(1-\beta\cos\psi)^{-1} \sim \gamma$. A Doppler factor of ~ 10, which is consistent with the statistics of superluminal motion (see Section ??), therefore implies a rest frame brightness temperature below the inverse Compton limit for $T_{var} \gtrsim 10^{15}$ K.

Qian et al. (1992) have observed variability with timescales of ~ 1 day at 5 GHz in the flux density of the quasar 0917+624. The amplitude of variation is ~ 20 percent. Additional variability at shorter timescales of 0.3 day has been observed at higher frequencies. Such variability implies that $T_{var} \gtrsim 2\times10^{18}$ and a Doppler factor $\gtrsim 100$ is required to avoid the Compton catastrophe. The Lorentz factors needed are therefore very much larger than the estimates for more normal sources and unless the quasar is highly unusual (a few other cases of such rapid variability are also known), some other mechanism has to be invoked to explain the observations. Qian et al. have interpreted the variability in terms of the apparent superluminal motion of a relativistic shock through inhomogeneous structures along a jet which is beamed towards the observer.

1.8.5 Beaming and Luminosity Functions

Beaming amplifies the observed flux, i.e., the observed source luminosity in an orientation dependent manner. If a population of sources all having the same intrinsic luminosity is subject to beaming, the sources will appear to be distributed over a range of luminosity. The luminosity function, i.e., the comoving number density of sources as a function of luminosity, is therefore spread out from its original delta function form. The effect of beaming on luminosity functions was studied in detail by Urry and Shafer (1984) and Padovani and Urry (1992). We shall consider a somewhat simplified version of their treatment here and

EWG General 8.1.26/Log/Staus Chart/ Ver 26, KS, 08.11.02

LIST OF BSAP DRAFTS RECEIVED FROM ECOREGIONS (as on 08.11.02)

Ecoregion	Name of nodal agency/coordinator	Received 1st draft, date	Commented on, by whom	Comments sent, date	Received 2nd draft, date	Commented on, by whom	Comments sent, date	Summary received	Sent/ endorsed by MoEF	Remarks (including Comments to be sent, and urgent follow up)
ARAVALLI	VD Sharma, Paryavan Prahari, Jaipur	Yes, Nov 7th, 01	KK AK	Nov '01 22.12.2001	Yes	KK	10.4.02		Sent, endorsed	Summary of the BSAP translated in hindi and circulated to villagers
CENTRAL FOREST BELT	Dilip Gode, VNCS, Nagpur	Yes 10.4.02	----	-----	Yes, 6.5.02	AK Prathuba Pande.	7.7.02 Yes (directly to coordinator)			BMS to send comment Needs Urgent follow up → Received 3rd. Version
EAST COAST	L. Kannan, Annamalai University, Parrangipettai	Yes, Actions chapter Yes, revised actions chapter, 8.3.02 Yes, full draft end March	AK, MVMW	29.12.2001& 11.1.02				Yes		MVMW to check whether it can be recommended for endorsement
EASTERN GHATS	T. Pullaiah, Sri Krishna Devaraja University, Ananthpur	Yes, October, 2001	AK	Nov '01	Yes, early april	PS	Yes			PVS to send comments on the revised draft PVS to check AK's comments
GANGETIC PLAINS	Jamal Khan, Wildlife Society of India	Yes, Nov 29th 01	RC, KK	Yes	Yes Nov '02			Yes		RC to follow up urgently
NORTH EAST INDIA	R.S.Tripathi, NEHU, Shillong	Actions chapter recd. 22.12.01	AK commented on the SAP	Yes	Yes, 18.10.02			Yes		PCB to give comments on the revised draft

Anwarendra Chaudhary comments Yes Nov '02
Nov '02
↳ said drastic revisions required - CORE - Comments.

		Yes, full draft 26.6.02	chapter, PCB							
SHIWALIKS	H.S.Mehta, ZSI, Solan	Yes, March 02	VS	Yes, 28.5.02						Meeting for finalization of BSAP held on 2nd Nov. VS to check on latest status
WEST COAST	M.N.Madhyastha, National Isitute of Technology, Surathkal	Yes, Nov 28th 01	KK MVMW	Dec 20th 01 17.1.02	Yes	MVMW	12.3.02	Yes		Conducted public hearing in Gujarat and Lakshadweep Revised SAP chapter received (4.11.02) MVWM to check on the revised SAP Chapter
WESTERN GHATS	Ranjit Daniels, Chennai Snake Park, Chennai	Yes	AK	Sept/Oct '01	Yes	DS	12.1.02		Endorsed	DS to follow up urgently
WEST HIMALAYAS	S.P.Singh, Kumaon University, Nainital	Action points: 1st set 2nd set Full SAP chapter 25.2.02 Full draft received Mid-July 02	AK AK	Jan 2002 29.1.02				Yes		VS to check on the latest status

Summary received.

VSharma to send his comments to coordinator. Also comments on summary. MS to send comments on Van Panchayat?

Special Corporate Business Practices:

Overbooking:

Use of Market Segments:

Special Corporate Requests:

Special Yield Requirements: