

DR. ANKUR AWADHIYA, I.F.S.

OSD to Hon'ble Forest Minister and DCF (IT)

B. Tech, IIT Kanpur (2009)

Ph.D, IIT Kanpur (2015)

AIGNFA (Masters in Forestry), IGNFA Dehradun (2016)

PG Diploma in Advanced Wildlife Management, WII Dehradun (2018)

Professional Certificate in Data Science, Harvard University (2021)

Micromasters in Data, Economics, and Development Policy, MIT (2022)

I.F.S. Officer, Indian Forest Service 2014 batch, M.P. Cadre

Email: mp572@ifs.nic.in

Education and Training

2021-2022	Micromasters in Data, Economics, and Development Policy, Massachusetts Institute of Technology Highlights 1. Awarded the credential with an 'A' grade in all of six courses.
2021-2021	Professional Certificate in Data Science, Harvard University Highlights 1. Awarded the professional certificate with 98.67% marks.
Sep 2017-Jun 2018	Post-Graduate Diploma in Advanced Wildlife Management at Wildlife Institute of India, Dehradun Highlights 1. Awarded the Institute's Gold Medal for the Top trainee in the course. 2. Awarded the Book prize for the Top trainee in Wildlife Biology in the course. 3. Awarded the Honours diploma .
Dec 2014-May 2016	IFS(Probationer) at Indira Gandhi National Forest Academy, Dehradun Highlights 1. Awarded the All Round Outstanding Performance Gold Medal and prize for Outstanding achievement in Securing highest overall aggregate marks . 2. Awarded the D. H. Kulkarni Gold Medal and prize for Outstanding achievement in Writing the Best Working Plan . 3. Awarded the Sanjay Kumar Singh Memorial Gold Medal and prize for Outstanding achievement in Forest Management and Environmental Conservation . 4. Awarded the Topper in Core Forestry Subjects Medal and prize for Outstanding achievement in Securing the highest marks in core forestry subjects . 5. Awarded the Shri P. Srinivas Memorial prize for Outstanding achievement in Securing highest marks in Forest Health and Forest Law .

6. Awarded the **K. P. Sagriya Shreshta Vaniki prize** for **Outstanding achievement in All Academic Subjects.**
7. Awarded the **Dr. B. N. Ganguli prize** for Outstanding achievement in **Academic Excellence.**
8. Awarded the **R. N. Mathur Memorial prize** for Outstanding achievement in **Securing highest marks in Forest Management.**
9. Awarded the **Senior Forester Prize** for best field forester prize for Outstanding achievement in **Securing the highest marks in tours and field exercises.**
10. Awarded the **Associate of the Indira Gandhi National Forest Academy Honours diploma** (equivalent of an M. Sc. in Forestry).

Sep 2014-Dec 2014 **IFS(Officer Trainee) at 89th Foundation Course, Lal Bahadur Shastri National Academy of Administration, Mussoorie**

Highlights

1. Awarded the **Director's Gold Medal** for securing the highest aggregate marks **by the honourable President of India.**
2. Awarded the **Director's Gold Medal** in Indian History and Culture **by the honourable President of India.**
3. Awarded the **Director's Gold Medal** in Public Administration **by the honourable President of India.**
4. Awarded the **First prize in Declamation Contest.**
5. Awarded the **First prize in Photography Competition.**
6. Awarded the **Second prize in Painting Competition.**
7. Awarded the **Second prize in Movie Making Competition.**

2009-2014

Ph.D, Biological Sciences and Bioengineering, IIT Kanpur

CPI: 10 / 10

Thesis title: Studies in Agarose-based bioplastic material (Degree awarded at Convocation of 2015)

Highlights

1. Awarded the **Ranjan Kumar Memorial Award for the best socially relevant project in the graduating class.** The project involved the designing and fabrication of new biodegradable plastic materials that are cheap, strong, mouldable, flexible and transparent. With a native strength around twice that of polyethylene, these plastics can be utilised to replace polythene bags. We also developed new anti-bacterial plastic surfaces, and also novel biocompatible and flexible drug-delivery vehicles that can be utilised as surgical dressings.
2. **Indian patent** app. no. 906/DEL/2015 (31 Mar 2015)

3. **International patent** app. no. PCT/IB2015/053216 (02 May 2015)

2005-2009

B. Tech, Biological Sciences and Bioengineering, IIT Kanpur

CPI: 9.2 / 10

Highlights

1. **Department Rank: 1**
2. **Grade ‘A’** in all the departmental and humanities courses.
3. Awarded the **General Proficiency medal of IIT Kanpur for best academic performance in the discipline.**
4. Awarded the **Sri Binay Kumar Sinha Award of IIT Kanpur for the best B. Tech project across all departments in the institute.** The project involved designing and fabrication of novel, low-cost cryogel filters utilising charged surfaces for the purpose of water filtration.
5. Awarded the **Proficiency medal of IIT Kanpur** for best project work in the BSBE department.
6. Awarded the **Academic excellence award of IIT Kanpur** for best academic performance.

Class 12 (2005)

CBSE Board, D.A.V. Public School, Bilaspur, C.G.

Percentage: 91.0%

Class Rank: 1

Class 10 (2003)

CBSE Board, D.A.V. Public School, Bilaspur, C.G.

Percentage: 91.6%

Class Rank: 1

Professional details

2014-Present

Indian Forest Service Officer borne on the Madhya Pradesh Cadre

Highlights

1. **Member of the National Steering Committee for the Green Forestry sector** under the Global Technology Watch Group project supported by the Department of Science & Technology, Government of India. The group guides in scouting technology development happening globally and its prioritisation in the Indian context. The report of the committee will be input to National Missions being implemented under National Action Plan on Climate Change (NAPCC).
2. Awarded the prestigious **S. K. Seth prize in the field of Forestry** for my contributions on the **impact of climate change on wildlife health.**
3. Awarded the **Vanyaprani Sanrakshan Puraskar by the Government of Madhya Pradesh** for my contributions to the conservation of forest and wildlife.

4. To protect forests from forest fire, **developed a forest fire early detection and warning system (named Simply-Fire)** that is now being implemented in several forest circles of Madhya Pradesh and Uttarakhand. I was also instrumental in **creating a new procedure to generate compartment-wise fire sensitivity maps** of forest divisions. The map generated for South Balaghat (Territorial) Division has been incorporated in the Fire Plan of the division.
5. **Developed a simulation-based model to study the impacts of global warming on carbon sequestration and forest stand dynamics, including stand volume, mean annual increment, leaf area index, gross primary productivity and dry mass.** The model, presented at the XIX Commonwealth Forestry Conference, demonstrated that CO₂ fertilisation and temperature augmentation have opposite impacts on the studied parameters, and that which of these two factors shall dominate is contingent on their relative strengths, the age of the stand, and (maybe) other parameters. By analysing the species-based and site-based positive and negative feedbacks of global warming on various forest stand dynamics parameters, the model helps predict the best species for any site for carbon sequestration, emissions trading and climate-change mitigation efforts.
6. **Developed a novel device to curb poaching of wild animals (named TripSafe).** This device was demonstrated to the Field Directors of all the tiger reserves of the country under the umbrella of the National Tiger Conservation Authority (NTCA). The NTCA has directed that the device be implemented in various states of the country. The device has now been developed on a commercial scale for this wide-spread usage. The device, costing just INR 500, has the advantages of simplicity, cost effectiveness and efficacy. It generates audible alerts for the frontline staff whenever an earth fault causes tripping of the electricity supply. This information can then be utilised for directed patrolling of the high-voltage electricity lines to apprehend the poachers, thus creating deterrence and protecting wildlife.
7. **Developed a camera-based surveillance and monitoring device (named AutoCam).** The device, utilising commercially available cameras, detects motion by calculating pixel-based differences between two frames of images, and when the difference exceeds a threshold, saves the image. It has been utilised for the study of natural behaviour of wild dogs (*Dholes*), and has the potential of being utilised for the monitoring of entry points, cattle kills, water holes, salt licks and sensitive locations exceptionally susceptible to poaching activities.

8. **Developed a 3-d decision support system (called Nirnayan)** for rapid identification of key water conservation areas and to act as an aid to managerial decision making in a landscape.
9. **Developed a web-based “Madhya Pradesh Plant Biodiversity Search Engine”** that can be used to generate and query district-wise plant biodiversity data of the state. The possible applications include simplification and consolidation of working plan preparation efforts and an aid for *in-situ* and *ex-situ* conservation of vulnerable plant species of the state.
10. Deployed several novel measures, including **DNA fingerprinting of trees, Tiger scat diagnostics, Drone and camera-based surveillance, Dog squad, Fire-fighters and legal tools including eco-sensitive zone notification** for the protection of Nauradehi Wildlife Sanctuary.
11. **DCF IT and OSD to Hon’ble Forest Minister, Madhya Pradesh** from 17 June 2019 to date.
12. **DFO, Nauradehi Wildlife Division, Sagar** from Oct 23 2018 to 17 June 2019.
13. **DCF, Green India Mission, Bhopal** from Aug 2018 to Oct 2018.
14. **Sub-divisional Officer, Betul (Territorial) Sub-division, Betul** from May 2017 to August 2017.
15. **Range incharge, Laugur (Territorial) Range, Balaghat** from May 2016 to December 2016.
16. As the **nodal officer for the conduction of medical camps under the Deendayal Vananchal Sewa Yojana**, played instrumental role in the conduction of medical camps in 30 forest villages in two divisions: North Balaghat (Territorial) Division and South Balaghat (Territorial) Division.
17. I was assigned the **task of smoothening several administrative procedures**, and the practices developed, including one for the collection of minor forest produce, have been implemented and are being utilised in several forest circles of the state.

Other accomplishments / Extra-curriculars

- Secured **All India Rank 25** in IFS examination 2013.
- Received the **CBSE merit certificates and laureate certificates** in classes 10th and 12th for top position in board exams.
- **Awarded the KVPY fellowship** by the Department of Science and Technology, Govt. of India.
- **Awarded the NTSE scholarship with 1st rank in the state.**
- **Twice selected in the Indian National Biology Olympiad; secured 97% marks in the National Mathematics Olympiad.**

- Qualified the **National Standard Examinations in Physics, Chemistry and Biology**.
 - **Achieved AIR 3 in National Science Olympiad.**
 - Taught children from underprivileged sections of the society. The work received a **recommendation under the National Service Scheme**.
 - Secured the **1st position in ‘Smart Manager’** contest in Techkriti 2007, and **1st position in ‘Vyakhya’ (lecturing contest)** in Techkriti 2008 at **IIT Kanpur**. The topic was: ‘Dolly, Molly, Polly... What next? (Cloning)’
 - **Achieved AIR 2 in All India Sanskrit Competitive exam** conducted by Arya Vidya Sabha, DAV - the largest nongovernmental educational body in India, and received a scholarship for the same.
 - Received awards in quizzes, essay, drawing, debate, declamation, speech, painting and movie making competitions at school, institute and academy levels.
 - I was **invited to attend the Republic Day parade in the Prime Minister’s box** due to my educational achievements.
 - My summer internship work earned the **‘Best Summer Innovation’ award at IIT Kanpur**.
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Positions of responsibility

Academic

- **Instructor for Wildlife Ecology** online course (Fall 2021), IIT Kanpur under the National Programme for Technology Enhanced Learning, Ministry of Human Resource Development, Government of India.
- **Instructor for Conservation Geography** online course (Fall 2021), IIT Kanpur under the National Programme for Technology Enhanced Learning, Ministry of Human Resource Development, Government of India.
- **Instructor for Forests and their management** online course (Spring 2021), IIT Kanpur under the National Programme for Technology Enhanced Learning, Ministry of Human Resource Development, Government of India.
- **Instructor for Conservation Economics** online course (Spring 2021), IIT Kanpur under the National Programme for Technology Enhanced Learning, Ministry of Human Resource Development, Government of India.
- **Instructor for Wildlife Conservation** online course (Fall 2020), IIT Kanpur under the National Programme for Technology Enhanced Learning, Ministry of Human Resource Development, Government of India.
- **Instructor for Wildlife Ecology** online course (Fall 2020), IIT Kanpur under the National Programme for Technology Enhanced Learning, Ministry of Human Resource Development, Government of India.

- **Instructor for Forests and their management** online course (Spring 2020), IIT Kanpur under the National Programme for Technology Enhanced Learning, Ministry of Human Resource Development, Government of India.
- **Instructor for Forest Biometry** online course (Spring 2020), IIT Kanpur under the National Programme for Technology Enhanced Learning, Ministry of Human Resource Development, Government of India.
- **Instructor for Wildlife Conservation** online course (Fall 2019), IIT Kanpur under the National Programme for Technology Enhanced Learning, Ministry of Human Resource Development, Government of India.
- **Instructor for Wildlife Ecology** online course (Spring 2019), IIT Kanpur under the National Programme for Technology Enhanced Learning, Ministry of Human Resource Development, Government of India.
- **Instructor for Forest Biometry** online course (Spring 2019), IIT Kanpur under the National Programme for Technology Enhanced Learning, Ministry of Human Resource Development, Government of India.
- **Instructor for Wildlife Conservation** online course (Fall 2018), IIT Kanpur under the National Programme for Technology Enhanced Learning, Ministry of Human Resource Development, Government of India.
- **Instructor for Forest Biometry** online course (Fall 2017) with Dr. Mainak Das, IIT Kanpur under the National Programme for Technology Enhanced Learning, Ministry of Human Resource Development, Government of India.
- **Tutor for ESO219: Introduction to Biology (2010-11, 2011-12)** course at IIT Kanpur for B. Tech students.
- **Teaching assistant for BSE631: Developmental Biology II (2010-11)** course at IIT Kanpur for B. Tech, M. Tech and Ph.D students.
- **Teaching assistant for BSE292: Molecular Biology Lab (2009-10, 2010-11)** course at IIT Kanpur for B. Tech students.
- **Teaching assistant for ESO219: Introduction to Biology (2009-10)** course at IIT Kanpur for B. Tech students.
- **Coordinator of Seminar courses: BSE701 and BSE702** at IIT Kanpur for Ph.D students.
- **Post-graduate admission coordinator student** at IIT Kanpur.

Non-academic

- **Member of the National Steering Committee for the Green Forestry sector** under the Global Technology Watch Group project supported by the Department of Science & Technology, Government of India (2017-present).
- **Aug 2019-Present:** Member-Secretary of the e-Office Implementation Committee for the Forest Department.

- **Jun 2019-Present:** DCF IT and OSD to Hon'ble Forest Minister, Madhya Pradesh.
- **Oct 2018-Jun 2019:** DFO Nauradehi Wildlife Division, Sagar, Madhya Pradesh.
- **Aug 2018-Oct 2018:** DCF (Green India Mission), Bhopal, Madhya Pradesh.
- **May 2017-Aug 2017:** Sub-divisional Officer, Betul (Territorial) Sub-division, Betul, Madhya Pradesh.
- **May 2016-Dec 2016:** Range incharge, Laugur (T) Range, South Balaghat (T) Division, Balaghat, Madhya Pradesh.
- **Treasurer for India Day, West Zone at LBSNAA, Mussoorie.**
- **Overall coordinator for Fete Counsellor Group at LBSNAA, Mussoorie.**
- **Member, Mess committee** at Seventh Hall of Residence, IIT Kanpur.
- Worked as the **Accounts Secretary of the Physics society**, where I was involved in collection and channelization of financial resources for the optimal working of the society at IIT Kanpur. Also worked as the **Junior Marketing Executive for Megabucks**, an international business and entrepreneurship festival hosted by IIT Kanpur.

Languages known

Hindi (fluent)

English (fluent)

French (certificate course)

Computer skills

I am comfortable on **Windows, Linux and Mac OSX platforms**, and have experience in the **following languages and packages**:

R (Course work at Harvard Online)

Java (Course work at IIT Kanpur)

C, C++ (Certificate courses at IIT Kanpur)

Fluent, Gambit, MATLAB, python (Course work at IIT Kanpur)

HTML, PHP, My SQL (Certificate course at IIT Kanpur)

ArcGIS, QGIS and ERDAS packages, R programming (Course work at IGNFA, Dehradun)

jemdoc and L^AT_EX

Bash scripting and server setups (I developed and deployed **backup servers, search engines, web servers and lab management system** during my graduate studies.)

Personal

Citizenship: Indian

Marital status: Unmarried

List of patents

1. **906/DEL/2015** (31 Mar 2015): Indian patent
 2. **PCT/IB2015/053216** (02 May 2015): International patent
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List of publications

Books

1. **Principles of Wildlife Conservation:** by Ankur Awadhiya and published by Taylor and Francis / CRC Press (2021)
2. **Deforestation in Madhya Pradesh: 2000-2018 An analysis of satellite-derived data:** by Ankur Awadhiya and Abhijit Awadhiya and published by the Madhya Pradesh Forest Department (2019)
3. **Fundamentals of distance sampling:** by Ankur Awadhiya and published by the Wildlife Institute of India, Dehradun (2018)
4. **QGIS based decision-support system for creating Forest Working Plans:** by Ankur Awadhiya and published by the Indira Gandhi National Forest Academy, Dehradun (2016)
5. **RS-GIS with free software:** by Ankur Awadhiya and published by the Indira Gandhi National Forest Academy, Dehradun (2016)
6. **Studies in Agarose-based bioplastic material (Ph.D thesis):** by Ankur Awadhiya (2014)

Research articles

1. **Ankur Awadhiya**, Understanding the differential roles of major causal factors in the 2017 Delhi smog through an analysis of satellite, meteorological and pollution data, *Indian Forester*, 145(8), 707-717, 2019.
2. **Ankur Awadhiya & Ajay Srivastava**, Rapid appraisal of Manas Tiger Reserve to understand its conservation challenges, *Indian Forester*, 144(10), 976-985, 2018.
3. **Ankur Awadhiya**, Impact of Climate Change on Wildlife Health: A manager's perspective, *Indian Forester*, 144(10), 911-921, 2018.
4. **Ankur Awadhiya**, Generation of division-level fire maps using satellite-derived fire data, *Indian Forester* 144 (5), 471-476, 2018.
5. **Ankur Awadhiya**, Impact of Global Warming on the Carbon Sequestration Potential and Stand Dynamics of Chir Pine Forests, *Indian Forester* 143(9), 907-914, 2017.

6. **Ankur Awadhiya**, Fire Breakers: Novel Devices for the Control of Forest Surface Fires, *Indian Forester* 143(5), 737-744, 2017.
7. **Ankur Awadhiya**, Adapting forest management to climate change, *National Seminar on Climate Change and Role of Communities for Adaptation and Mitigation* (2017)
8. **Ankur Awadhiya** & Abhijit Awadhiya, Impact of global warming on the carbon sequestration potential and stand dynamics of Chir Pine forests, *XIX Commonwealth Forestry Conference*, 2017
9. **Ankur Awadhiya**, Suhela Tyeb, Kalpana Rathore & Vivek Verma (2017), Agarose Bioplastic Based Drug Delivery System for Surgical and Wound Dressings. *Engineering in Life Sciences* DOI: 10.1002/elsc.201500116
10. **Ankur Awadhiya**, David Kumar, Kalpana Rathore, Bushara Fatma, & Vivek Verma (2016), Synthesis and characterization of agarose-bacterial cellulose biodegradable composites. *Polymer Bulletin* doi:10.1007/s00289-016-1872-3
11. **Awadhiya, Ankur**, Kumar, David & Verma, Vivek (2016), Crosslinking of agarose bioplastic using citric acid. *Carbohydrate Polymers* <http://dx.doi.org/10.1016/j.carbpol.2016.05.040>
12. Mohit Gera, **Ankur Awadhiya** & Neelu Gera (2016), Provenance trial of *Dalbergia sissoo* Roxb., *Indian Forester*, 142 (3) : 213-220, 2016
13. Mohit Gera, **Ankur Awadhiya** & Neelu Gera (2016), Progeny trial of *Acacia catechu*, *Indian Forester*, 142 (8) : 727-733, 2016
14. **Awadhiya, Ankur** & Verma, Vivek, Silver nano-particles incorporated agarose-based bioplastic films for packaging applications, *International Conference on Emerging Materials and Processes*, 2014
15. **Awadhiya, Ankur** & Verma, Vivek, A Novel Biocomposite Based On Agarose And Hydrolysed Cotton Cellulose For Packaging Applications, *International Conference on Emerging Materials and Applications*, 2014

General-interest articles

1. **Ankur Awadhiya**, Vyangya: Daastan-e-bureaucracy: Fursat Bahadur (Hindi), *Aranya*, 2019
2. **Ankur Awadhiya**, Vyangya: Daastan-e-bureaucracy: Hierarchy (Hindi), *Aranya*, 2019
3. **Ankur Awadhiya**, Sansmaran: Ghonsala (Hindi), *Aranya*, 2018
4. **Ankur Awadhiya**, Vichar: Rescue (Hindi), *Aranya*, 2018
5. **Ankur Awadhiya**, Himraj aur Shashank (Hindi), *Aranya*, 2018
6. **Ankur Awadhiya**, Vyangya: Daastan-e-bureaucracy: Pita-Putra Prasanga (Hindi), *Aranya*, 2017
7. **Ankur Awadhiya**, Vyangya: Daastan-e-bureaucracy: Nandi katha (Hindi), *Aranya*, 2017

8. **Ankur Awadhiya**, Manzil abhi baaki hai Maa! (Hindi), *Aranya*, 2017
 9. **Ankur Awadhiya**, Vyangya: Hindi bhashi kshetron mein vyapt bhashayi avarodh (Hindi), *Aranya*, 2016
 10. **Ankur Awadhiya**, Vyangya: Daastan-e-bureaucracy: Kahani bandar ganana ki (Hindi), *Aranya*, 2016
 11. **Ankur Awadhiya**, Mera Panigrahan (Hindi), *Aranya*, 2015
 12. **Ankur Awadhiya**, Till we meet again, *Memoirs*, 2014
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