

Report of CV Starr Fellows visiting WCS facilities (Bronx, Queen's, Central Park Zoos & New York Aquarium) from October 9-26, 2003

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Preamble

Education is a constant process, the termination of which indicates intellectual death. However, attending training workshops and seminars as a 'participant' after being an educator for well over 15 years seemed a little odd, as I didn't expect to "learn" many new methods of teaching or add information to my existing knowledge-base. Under such circumstances, when I received a letter of invitation from the ZOO office to attend a five-day training program on **Tigers** (Teachers for Tigers - T4T) at Chennai, conducted by educators from the Wildlife Conservation Society (WCS), I wondered what should my decision be. It was a tough decision to make, as I am fairly familiar with the basics of tiger behaviour, distribution and problems being an alumni of the Wildlife Institute of India (WII); and to make the decision tougher, the dates of this workshop coincided with my best friend's wedding. However, a year later, I can say without exaggeration that accepting that invitation and attending the workshop at Chennai changed my life entirely!

The Chennai Workshop

The Chennai workshop was an eye-opener, as from the inaugural session to the valediction, my diary was full of new ideas, methods and observations, of how Tom Naiman and Nalini Mohan, the two expert educators from the International Education Department of the Bronx Zoo conducted the workshop, supported effortlessly by the ZOO staff. The level of co-ordination and planning struck me prominently. Team effort, taking notes and comments of participants and a non-obtrusive methodology of teaching were other areas, which I realised were of immense importance while working with large, adult audiences.

T4T Workshops

Three training sessions later (the monsoon sessions in South India - PTR, KMTR & RMNH) as education interns in the T4T workshops and hours of discussion and interaction with Tom Naiman, Nalini Mohan, Sally Walker and the four other co-interns (Payal, Daniel, Gigi & Mridula), I realised, my teaching methodologies and planning process had taken a quantum leap. However, the invitation to travel overseas to the US to learn from and observe the education programmes of the WCS' Education Department was a high point in my life. And I'm grateful to Sally Walker, Tom Naiman and Nalini Mohan for considering me capable for the CV Starr Fellowship, as well as to Annette Berkovits and her team to make it "HAPPEN".

The US Visit

The visit of the CV Starr Fellows to New York City and various WCS' facilities (Bronx, Queens and Central Park Zoos and New York Aquarium) and education programmes was a unique experience of learning, interactions, analysis and imbibing of global philosophies in Zoo Education, Design and layout, planning, communication as well as Green marketing.

Tom and Nalini had worked out a packed but exciting schedule of visits to Museums, Zoos/Aquarium, sites displaying local conservation efforts, lecture sessions (on campus and at various other venues within New York City), group discussions, experiential learning programmes, lunch and sit-ons in departmental meetings, as well as private lunches/brunch and dinners. They also made personalised arrangements for city tours, visits to local beaches, parks and invitations to their homes to interact with their families and pets (other animals)! Tom and Nalini's vision and experience in planning was displayed by the free time allocated for shopping and visiting areas of personal interest, like the two weekends, which I utilised to visit my friends and relatives in Boston (Massachusetts State) and Edison (New Jersey State). And to top the goodies - they treated us to a show of the Broadway Musical "**Lion King**"!

The Learning Experience

Planning (which includes flexibility and contingencies), interactivity, variations and communication were the most prominent areas in this entire learning experience. There was not one session in the entire two weeks that was even vaguely similar (repetitive) to another. Even the visits to parts of the Bronx Zoo, which due to its size and vastness, were broken and spread over several days. The instruction included indoor class sessions (lead by Danielle and Ronald Griffith, Gabie, Bonnie), meetings with several departmental heads (Ann Robinson, Jeanine Silversmith, Robert Sikora, Donald Lisowy, Merryll Kafka, Joshua Ginsberg), combined with guided tours with specialist educators (Ron, Anthony Cogswell, Mark). The presentations made by the CV Starr Fellows to the Board of Governors/Trustees of the WCS although nerve racking during the preparatory stage, turned out stimulating, thanks to the personal guidance of Annette Berkovits, Tom Naiman & Nalini Mohan.

Highlights

Since the entire trip was a combination of methods, I'm enlisting the characteristics and highpoints of the (most engrossing) sessions to provide an overview and insight into the merits of the Fellowship Programme:

Mommy & Me (Daddy & Me) (3-4yrs) - Mystery bags which help compare human parental care with how animal babies are brought up (metamorphosis, moulting, nest building, camouflage, grooming, nursing);

Gorilla Kindergarten (5-7yrs) - Gabie's (Educator) patience with perky kids like "Luke", while playing Animal Charades with picture cards displaying behaviours like sleeping, grooming, playing, dominance, nest making. Walk through crowded Congo (Bronx Zoo) with picture cards;

Fall Foliage Walk - Thomas Hurtubise (Curator - Education, Queen's Zoo) - Houses North American flora (Red Maple, Viburnum, Sumac, Ironwood) and fauna (Lynx, Bald Eagle, Bison, Cowbird, Roosevelt Elk) plus a walk-in Aviary having

"symbolistic signages" as Queen's Borough has people from 80 countries, speaking 160 languages & dialects;

National Programmes (Pablo Python, Voyage from the Sun, H.E.L.P, Elly Jelly, Wild Explorations) - Ann Robinson, Director (National Program) - "You are what you eat!" 'Reading' shouldn't be used as a medium to 'Educate', where language could be a problem, hence multi-disciplinary programmes using experiential learning, activities, visuals, symbols, signages, music, art are effective alternatives. Extensions (levels) are a MUST for gifted kids. Elementary school teachers fear 'science' and revitalisation of teachers is extremely important to the success of their programme;

Elly Jelly/Wild Explorations - Sarah Gruber (Senior Curriculum Developer) - "Literacy to teach Content, Content to teach Literacy." Elly Jelly filled an aquatic niche (information in a bubble), as there is extensive literature on terrestrial habitats". Huge manuals are restrictive, hence Elly Jelly has six smaller units;

Central Park Zoo - Bob Sikora (Curator, Education) - Most buildings (like the Arsenal) are heritage monuments so can't be extended upwards or outwards, only downwards, though that's expensive! Over 120 trained volunteers who have attended an 8weeks course which they PAY for;

Onsite and Offsite Theatre Programmes (IMTAL) - Jonathon & Nicole (Educators) - 70% Urban people have strong dislike & fear of wildlife and wild areas - Theatre Performances makes them look more closely at the animals and gives them a positive image. At Bronx & Central Park Zoos, New York Aquarium (planning for Prospect Park & Queen's Zoos) - Captain Cocoa (Saving Golden Lion Tamarins), Main Stage performances (12min, 5-9yrs), Children Zoo theatre (5min, 3-5yrs) with puppet/magic shows, sing-alongs. Pre-reading age group shows have NO conservation message, just knowing names, making friends! Roaming Troupe Programme to draw attention to Non-BIG species within the Zoo;

Animal Wraps (2-4yrs) - Bonnie (Educator) - Warm up by singing. Animal picture cards (Orangutan, Dolphin, Bears) - stand & move arms, make animal's sound! Talk about animals with fur & hair (mammals) - shedding (sheep), warmth (fox), camouflage (rabbit), protection/ defense (quill). Bring 'Live Animals' from behind Partition. Make a hedgehog with dough & Spaghetti;

Lecture at Columbia University - Dr. Richard Schroeder - "Environmental Justice and the Market in Tanzania's Wildlife Sector". Distributed (Justice) Remedy Approach v/s Procedural Justice. 4th World Geography of indigenous (tribal) people! "Trinkets & beads Justice". "Expectation Management" keeps their expectations low, so whatever you give them it seems MORE!

Bengali Express (Mono-Rail) - Richard (Driver-Guide) - A highly informative ride passing through the Kanha Meadows, South China (Formosan Sika deer), Cambodian Forest (Gaur, Brow-antlered deer), Karakoram Ranges (Himalayan Tahr), Thailand (Asian Elephants), besides displaying Machans and animals like Indo-Chinese tiger,

Indian One-horned Rhinoceros, Barking, Swamp, Hog & China-tufted deer, Sambar, Nilgai, Red Panda;

Education Programme on Reptiles & Amphibians (6-10yrs) - Anthony, Jen, Leslie (Educators) - Starting with comparing live Black Rat Snake and Fire-bellied Toad, the highly energetic group used Touch Boxes and Mystery Bags to observe characteristics of the Herpetiles;

After School Learning Program - Ronald Griffith & Danielle (Senior Educators) - "In EVERY category of Science there are exceptions to the rule!" Programme oriented for children from under-serviced schools, hence food & snacks are always served. There WILL BE a TEST, take notes, although notes ARE & WILL BE given, review next session before the test. Mammalian classification on the basis of a) Reproductive Strategies (Monotremes, Marsupials, Placentals), b) Dentition or Nutrition (incisors-clipping, canine-tearing/ripping, premolars & molars - grinding/shearing-carnasials), c) Movement (Plantigrade or Flat feet, Digitigrade or Elongated feet, Unguligrade or Toes/Hooves). Enlarged brain has led to extra parental care. Migration of jawbones of reptiles to form ear ossicles in mammals. Typical features of mammals (Vivipary, placental attachment, mammae, advanced parental care, hair/fur, enlarged brain, no cloaca, various glands, endothermic, external pinnae, single dentary bone, heterodontous teeth, 3 ear ossicles, 7 cervical vertebrae, 4-chambered heart);

Rainforest (Congo Class) - Anthony Cogswell (Elementary Instructor) - Prepared Classroom with drawings on white board, hanging paper cuttings and mystery partition! Begin with quick revision of last session on 'Grasslands'. Close eyes - imagine you are walking through a rainforest - spray a little water through a spray bottle! Read out a letter from Dan (a former WCS educator, currently doing research on nesting material of Gorillas) with assignments for students to segregate items from levels (storeys) of the forest from floor, to understorey to canopy. Use measuring tape to compare rainfalls in desert or New York with rainforest (50inches v/s 300inches). Observation of Live Brazilian Rainbow Boa Constrictor. Adaptation Board - outing, outdoor activity, competition with 3 boards and 3 teams.

Lunch Lecture - Carolina Murcia (WCS Field Researcher) - "Can ecosystems be restored? Humpty Dumpty revisited in the Colombian Andes" - The Otun Watershed - a dangerous area to work in with regular kidnapping and violence! Challenge of conserving areas of high biological diversity with high population pressures. Mixed restoration strategy of natural regeneration, monocultural and mixed plantations of native and exotic tree species. Native Alders associated with Nitrogen fixation (Actinomycetes), fast growing. Areas of research - Litterfall, Forest dynamics, snags (limiting factors), wood volume, species diversity (pollinators, seed dispersors, herbivores);

American Museum of Natural History (AMNH) - Centre for Biodiversity & Conservation - Network for Conservation Educators & Practitioners are looking for partners in other countries in fields of Applied Demography, Project Evaluation and Habitat Fragmentation;

New York Aquarium - Merryl Kafka (Curator, Education) - Merryl joined in 1969 as a Volunteer and hasn't left since then, now the Curator! New York's coastline is 720 miles and has lost 60% wetlands to urbanisation. Nearly 70% global atmospheric Oxygen comes from Sea plants wrongly called Sea WEEDS! Observed Coastal profile, Biomagnification, Detrital cycles, violation patterns (Department of Environmental Conservation - DEC), Volunteers' training or Docent Programme;

JHS117 Class 7th - Bob Haibig (Mathematics teacher) - Start with addition-subtraction of integers moving to Number Lines (using masking tape). Class Group assignment presentations on Probability assessed on a) Mathematical Concepts, b) Oral Presentation, c) Visual Presentation, d) Originality/Creativity;

Lunch Lecture - Dr. Vardis Tsontos - "Marine Information Systems, GIS & Web-based Mapping Technologies within the context of the Census of Marine Life Programme - Explained types of data (Bathymetric, climatological, relative distribution & abundance of selected fish species) and the methods of collation, concept of transboundary stocks for marine protected areas, increased accessibility to multivariate oceanographic data;

National Programs (Populations, Habitat Boxes, Inquiry Workshop) - Mark Eisenhenmen (Teacher Trainer) - "Birth Control = Abortion" is yet the equation in mindsets of many American regions. Parenting Game, Film on Zero Population Growth, Inquiry Learning (Habitat Boxes), Creative Writing, Assessment techniques were undertaken. Inquiry learning is an essential for developing a scientific process. Four stations with skulls (real & exact look-alike plastic ones) - Station 1: Aves, Reptiles, Mammals - on arrangement of jaw bones; Station 2: Insectivores/Omnivores - Mixed Dental Formula; Station 3: Herbaceous feeders - Diastema, flat incisors; Station 4: Carnivores - Carnassial teeth, sagittal crest, open oculars, huge canines;

Grants/Fund-Raising - Lee Livney - Send Cold proposals to a foundation/funding agency you don't have a connection with. Identification of funding source involves: a) Identifying Foundation, b) Finding Linkages within your own Trustees/Staff, c) Not necessary to have a compelling programme, d) Read guidelines carefully as your project should fit "perfectly", e) Details and neatness counts (avoid typos & calculation errors, good layout with suitable references). Scale down the project if it seems unsustainable. Look for multiple funders - it establishes 'Credibility'!

WCS Wide (International Heads Meeting) - One of the BEST SESSIONS - Brevity without loss of details was the highlight here. Each regional head updated the congregation about the recent socio-political and research developments in their eco-region peppering the presentations with humour and charm. The discussion highlighted the NEGATIVE IMAGE of an ENVIRONMENTALIST, as compared to the POSITIVE IMAGE of a SCIENTIST - which can be used in campaigns!

WCS Education Department - Donald Lisowy (Curator Education, Bronx Zoo) - Onsite programmes include pre-school, 3-4yr olds (annually nearly 40000kids),

Adolescents, Adults, Girls (teens), FOZs (Friends of Zoo), Volunteers & Distance Learning, Biofact carts, guided tours, mini-talks, Public Ads & Outreach programmes for underrepresented groups (minorities, women,). More focus on early age learning rather than adult (non-literate) groups. Volunteers could get involved in interpretation/education, non-animal departments, attending phone-calls, office/computer work, mailing/follow-ups, making newsletters, posters (making & distribution);

Weekly Senior Staff Meeting - Annette Berkovits (Senior VP Education) - Brings about interfacing and interactions. Highest income through payments for education programmes (\$1.4m annually) - compare with Indian Zoos! Programmes - Bronx River Watch (Training volunteers given bio-facts related to local wildlife & Ecology), cross-fertilisation of ideas, Breakfast programme (Tiger Mountain exhibit), Halloween Festival, Guest Speakers, Small Surveys within zoos about age-based visitorship;

Rocking the Boat - Jim - To teach teens the dying art of boat-making while doing scientific studies on the Bronx River's decay, restoration work by plantation of grasses and monitoring habitat recovery!

Friends of the Zoos (FOZ) - Guests at the FOZ Annual Meeting and observers of the FOZ's 8-weeks' training modules (including structuring of Zoos/Aquarium, Species Survival Plan-SSP, History of Zoos/WCS, History of Volunteering);

Hunting & Wildlife Trade Programme - Liz Benett - International Dept which runs in Crates (Asia - Ullas Karanth, Africa, Latin America, North America, Marine), Cross Cutting Programmes (Living landscapes, Big Cat Studies, Hunting & Wildlife trade), Enforcement and Education;

Distance Learning Programme - Erin - MOST impressive programme managed single-handedly right from marketing to servicing and administration! Talk about Gorilla habitat degradation for students all over the country via Webcam - Software - Screen - Micophone. **Saving Wildlife** = Discover Animal Needs + Involve Local People + Protect Wild Places! Interpretation & Design - Johnny Fraser - Excellent session on design, layouts and visualisation for non-literate crowds. Design = Concept, Prototyping, Ergonomics & local prejudice (Country-wise bias about the concept of WILD)! Interactive exhibits provide value building, Instinctive Education/Experience & Information. Layout is designed considering the visitor wants to see animal FIRST and then Education! Vandal-proofing and passive approach important constraints.

Reflections in Dolphin Mind Mirror - Dr. Diana Reiss - Impressive and intriguing lecture in FOZ annual meeting about correlation between intelligence (v/s instinct) and mirror self recognition (MSR) in several mammal species, focusing on Bottle-nosed Dolphins.

"In the end, we will conserve only what we love, we will love only what we understand, we will understand only what we are taught."

- Baba Dioum