

GIS Applications for the **Biologist/Ecologist**
for

*The Environmental
Industry*

Geographic Information Systems Applications; to the Environmental Industry

ArcView 9.3; March 24 & 25, 2012

Fully endorsed and supported by



EARTHQUEST
Biological Field



EARTHQUEST
(Canada) for the
Environment

Benefits of GIS Certification

The Geographic Information Systems (GIS) certification course is not offered through traditional college and university and must be taken through the

EARTHQUEST Biological Field School. Our GIS course is fully integrated with the requirements for working as a GIS Technician. It is a requirement for many jobs in natural resource management, ecology, conservation, environmental consulting, biology, botany, terrestrial monitoring, species at risk programs as well as provincial and municipal policy. It was developed by the Senior Instructor - Dave Jolly in response to the shortage in the environmental industry for well qualified GIS Technicians. This shortage is acknowledge by employers such as **Avalon Professional Consultants of Ontario**, who state:

"In my experience, graduates from EARTHQUEST Canada are well qualified to participate in consulting practices and the market is currently in short supply of well qualified individuals."

Skills acquired Instruction will include;

- Polygon delineation
- Creation of shape files using ArcCatalogue
- Editing sessions to construct polygon boundaries and output maps for reports
- Field practicums for how to capture GPS data
- Aerial photograph interpretation
- Ortho rectification and georeferencing techniques

Who should take GIS Certification?

This course is a requirement for many jobs in terrestrial and aquatic ecology.

Provincial and federal government agencies and organizations now require well qualified GIS Technicians in order to do jobs which were formerly simple Biologist/Ecologist positions. Although GIS is offered as a diploma or degree from traditional college/university, graduates of these programs do not know how to perform key GIS skills needed to do their jobs. Moreover, GIS is a minimum hiring standard for many employers, who will not hire candidates without it. EARTHQUEST is the first and only organization in Canada to offer GIS certification within a 2 day structure. Obtaining GIS certification should substantially increase your attractability to potential employers as well as increase your pay range. This course will benefit terrestrial, aquatic & wetland ecologists, planners, restoration ecologists, foresters, agronomists and resource planners. It is incorporates a considerable amount of biological data.

The goal of obtaining GIS certification is to facilitate the mapping process involved with studying and classifying natural terrestrial as well as aquatic/wetland sites. This includes the following field surveys;



Bird survey (all birds by sight and sound, including Ontario Species at Risk). You will learn basic bird field identification and survey skills, but not enough to qualify you for bird field jobs.



Plant survey (all vascular plants; trees, shrubs, wildflowers, ferns, grasses, sedges, rushes and club moss, including Ontario Species at Risk). You will learn some plant identification skills in this course, but it is not enough to qualify you for plant field jobs.

Upgrade your field bird & plant field ID skills

The EARTHQUEST Biological Field School now offers **Level 1 & 2 terrestrial FBT plant & Aquatic/wetland plant certification courses.**

These certification courses are specifically designed to greatly enhance your field identification and survey skills of vascular plants and birds in terrestrial systems (ie. deciduous and coniferous forests & swamps). The **Level 1 & 2 terrestrial FBT plant courses** focus on common vascular plants typically found in the 5 forest regions of Ontario while conducting Ecological Land Classification (ELC) methodology. The **Level 1 & 2 Aquatic/wetland FBT plant courses** focus on common aquatic/wetland plants. To learn more about these courses please consult;

<http://www.earthquestcanada.ca/Plantcourses.htm>
<http://www.earthquestcanada.ca/FBTCourses.htm>

The Instructor

Dave Jolly, B.Sc., Senior Instructor & President, EARTHQUEST Biological Field School, Senior Biologist/Consultant, EARTHQUEST Environmental Consultants

- Experienced in classifying, describing and identifying terrestrial and aquatic/wetland systems of the five forest regions of Ontario utilizing GIS methodology and techniques
- Worked for Conservation Authorities, National Parks, environmental consulting firms, non-government organizations, the private sector and the Ontario Ministry of Natural Resources on field projects involving natural areas and inventory
- Possesses intimate knowledge of how to field identify over 133 families, 472 genera and 1800 species of vascular plants, including 90 Ontario Species at Risk (SARs)
- Able to field identify 168 families, 192 genera and 294 species of Ontario birds, 22 orders and over 200 families of insects, all Ontario reptile and amphibian species, including SARs.
- Work with and train staff from environmental consulting firms & Conservation Authorities in GIS methodology
- Since 2004 classified over 70 ecosite types using GIS mapping skills covering 5000 hectares of natural areas in southern Ontario

The Course

This field course is available over a 2 day intensive online period via Facebook. This schedule is advisable for anyone who can fit it

Ischedule and involves 2 - 3 hours per day of instruction. It provides more 1-1 instruction and is recommended to people who require a lot of individual attention who are practical hands-on learners. In order to maximize interaction among the instructor and students online sessions will have no more than a couple of students and one instructor. The course is based on online interactions, questions & answers via Facebook, but the course fee does not purchase of ArcView tutorial software (= approx. \$50.00 CAD for 6 month trial version). This is a basic GIS course designed to emphasize GIS Technician level skills. It is recommended that students have their own computer (lab top) and order a GIS ArcView tutorial to supplement the learning curve as you may follow instructions on your own computer. To obtain full certification students must present mapping work in the format of a summary of findings based on tutorials given by the instructor.

Course outline & Break down

Start time: 10:00 am on Saturday. The 2 day version will follow this schedule;

Day 1

Morning: Introduction to geomatics, course objectives and outline, history and rationale of GIS
Afternoon: How to obtain data.

Day 1

Morning: working with GIS, conversions, adding scale, georeferencing
Afternoon: Field work, use of manual GPS unit to capture data, transference into GIS software

Day 2

Morning: Creating shapefiles in ArcMap, converting Jpegs into TIFF files for editing
Afternoon: Field work, begin data collection

Day 2

Morning: Field work, making printable maps for reports
Afternoon: Field work, data summary, oral presentation

Registration Form

Participant information

Affiliation: _____
Name: _____
Address: _____
City: _____ Postal Code: _____
Telephone: _____ Fax: _____
Email: _____

Participant information

Course fee (if book before Mar. 1, 2012)	# of participants _____	Fees x \$800	Total + \$ _____
Early bird discount <small>For registration received with payment 7 days prior to registration deadline</small>	_____	x \$25.00	- \$ _____
I would like to register for;		Subtotal:	\$ _____
<input type="checkbox"/> 2 day course		GST (if appl.)	\$ _____
		Grant total	\$ _____

Course dates

March 24 & 25, 2012 (2 day)

Method of payment

- Certified cheque or money order(enclosed)
- Deposit through any TD/Canada Trust
- Email money transfer
- Pay pal

Payment

- Please make certified cheques payable to **EARTHQUEST**. Please write the name of the registrant on the face of the cheque. At this time we do accept Pay pal, if you wish to use a
- Payment should be emailed to;

Attention: GIS registration
EARTHQUEST Biological Field School

Cancellation policy

We maintain a strict policy with no exceptions. This certification course is 100% non-refundable and must be taken within 1 year of acceptance, but we may consider you for transference to another date.

- We also accept deposit through any TD/Canada Trust. Simply follow the instructions given at the following link;

<http://www.earthquestcanada.ca/Wirefunds.htm>

- Your GIS instruction course material will be provided upon payment receipt as a PDF downloaded from our website. Space is limited to a maximum of 3 students and there is no waiting list, so book early since this course does fill quickly. Please email your completed GIS registration form as a PDF document or Jpeg to the attention of **Dave Jolly** at; earthquestcanada@yahoo.com.

Networking Form

Please help us to meet your needs by filling out the following information:

My area(s) of expertise are: _____

I am taking this GIS certification course because I wish to use it for;

- Career development and upgrade
- Advanced skills
- Terrestrial studies
- Habitat restoration
- Watershed planning
- Development of policy and legislation
- Other

I would like more training in;

Liability and Waiver Release

This training is being conducted to meet the standards of the environmental industry in Canada and the USA. The Instructors, Teaching Assistants, EARTHQUEST (Canada) for the Environment, EARTHQUEST Environmental consultants and the EARTHQUEST Biological Field School are teaching an international field biology course, program or course and cannot be held responsible, liable, accused of anything resulting in the participants dissatisfaction, for the way in which this training is applied to the participants. Participants are responsible for their own health, safety, computers, equipment. This is an online course, and any and all equipment, course material, supplies, computers, rental facilities, etc. are provided as is. It is your responsibility to have your own computer and the ArcView 6 month trial version tutorial in order to participate. I _____ have read, understood and agree without duress, with all terms and conditions on the EARTHQUEST website at; <http://www.earthquestcanada.ca/Termsandconditions.htm> before paying and gaining acceptance.

I _____, hereinafter referred to as the "participant", agree that I will bring my own computer and this course is not a Ministry of Natural Resources (MNR) course, EARTHQUEST is exempt from registration from the Ministry of Training, Colleges and Universities and this course is included in the International Field Biology Training (FBT) Program, all payments are completely 100% non-refundable and to pay a 15% cancellation fee (33% interest rate) should I drop out, cancel, forfeit, delay or not participate and to indemnify and save EARTHQUEST (Canada) for the Environment, EARTHQUEST Environmental consultants and the EARTHQUEST Biological Field School and it's employees harmless from all claims arising in favour of any person, including contacting any other persons, agencies or organizations to ask for a refund or complain, myself, firm or corporation, on account of any dissatisfaction, personal injury (including death) or property damage to the extent resulting from my actions and participation in this Geographic Information System (GIS) certification course. If the participant does contact any other persons, agencies or organizations to ask for a refund or complain the participant acknowledges, understands and agrees that this may be taken as harassment and slander and subsequent charges relating to this may be laid. The participant acknowledges, understands and agrees to pay any legal fees resulting from such action.

Signature

Date

Terms and Conditions

Please read the following information carefully

How to Book

Request an interview. Once accepted forward your completed application form with your non-refundable deposit to secure placement in the program of your choice with EARTHQUEST (Canada).

Deposits

Deposits for primate Field Biology Training (FTB) programs in Canada or Central America are \$699.00 USD (United States dollars), \$575.00 USD for Ethnobotany or Rainforest Ecology programs, \$580.00 CAD (Canadian dollars) for the Biological Field School. If approved for financial assistance and you have obtained a loan or line of credit to cover course fees then the deposit amount is based on the number of courses taken. For example, if approved for 7 courses then the deposit is \$5600.00 CAD non-refundable. These are 100% non-refundable and may be used to hold your reservation for 7 days from program acceptance (or in some cases the interview date). All funds are processed by 12 Noon on the date submitted. The balance is due 60 days prior to program departure for international programs. Any and all payment of fees toward courses through the Biological Field School are 100% non-refundable in the event that the student cancels, postpones, delays or forfeits participation and are subject to application and cancellation fees if the student cancels, postpones, forfeits, drops out, or changes the format of their program, course or project in any format. Please make certified cheques or international money orders payable to EARTHQUEST (Canada). You may also wire transfer funds via a bank or Western Union to ensure faster service.

Cancellations

Part A of this cancellation policy does not apply to courses taken through the Biological Field School via correspondence or personal attendance. It does apply to field courses taken in Central America in partnership with the La Suerte Field Biological Field Station.

Part A

You acknowledge that should you decide to cancel your international program within 60 days prior to Expedition/Program departure then reimbursement of Expedition/Program costs shall be based on the following cancellation policy; If cancel 45-60 days prior to departure - 25% of Expedition/Project costs retained. If cancel 30-45 days prior to departure - 50% of Expedition/Project costs retained. If cancel 15-30 days prior to departure - 100% of Expedition/Program costs retained. The deposit payable to EARTHQUEST shall only be refunded if you find a replacement suitable to EARTHQUEST, if EARTHQUEST finds a replacement, or if the Expedition/Program is canceled by EARTHQUEST, and that the refund or non-refund of part of all of the balance of the total Expedition/Program costs shall be in accordance with the cancellation policies of the Expedition/Program, which you acknowledge that you have read and understand. You also acknowledge that EARTHQUEST shall not be held responsible for the refund of, or for arranging the refund of the round trip airfare, transportation, accommodations or food.

Part B

All courses taken through the Biological Field School must be via personal attendance unless you are given **special permission** by your Instructor/Teacher in another format such as correspondence & are 100% non-refundable from the date that funds are received. Students will be charged a 15% (of the total tuition) cancellation fee (in addition to any and all 100% non-refundable costs paid), should they be suspended, cancel, forfeit, drop out, delay or change, in any way - courses, programs or projects. Interest rates shall apply to any fees charged, or for late payments. Students that miss, cancel or change a scheduled test will receive a fail for the test or course. Students requesting any switches/changes to their program, courses or projects must request this in writing, provide valid reasons, make an appointment to discuss it and receive permission from their Instructor/Teacher. Fees for any changes or extensions in how you wish to partake in the program, courses, or project will be applied. Please note, certificates are not awarded (as they are generally sent with transcripts) until all courses are successfully completed, the student is in good standing and has passed their program or course(s). This includes completion and passing any tests, assignments or tasks associated with course work.

Upon registration

You will receive immediate confirmation and acknowledgement of securing placement in the program. If you have applied to a FBT Program then you will be mailed, or emailed a FBSST, or FBT Course, which will be due no later than 30 days prior to departure or receipt for evaluation. Remember, you must pass the FBSST, or FBT Course before gaining full acceptance in the program. Failure to do so could expel you from the program. The complete Expedition/Project/Program/Course or briefing material will be mailed to you upon payment of the remaining balance and receipt of ALL application documents.

Expedition/Course/Project/Program Dates/Structure and Leader Changes

You acknowledge that EARTHQUEST and its staff have the right to change or alter itineraries, Expedition/Project/Course costs and prices, or plans without notice or prior approval for the safety or betterment of the Expedition, course, or project, its members and staff. This includes the need to update or revise courses. We will do everything possible to ensure Expeditions/Projects/Courses will operate with the leaders noted and the dates listed. If the student wishes to switch/change a course, project or program they must completely and fully fill out a request to switch/change application form and pay the fee.

Liability

You acknowledge that you have been informed by EARTHQUEST that for some parts of the aforementioned Expedition/Program/Course, no liability insurance is or can be carried by the operators of local transportation or facilities in the destination country, and that you take full responsibility for your health and safety during all portions of the Expedition/Program/Course. Before you participate in any Expedition/Project you will be required to complete a brief confidential personal data, health and liability/agreement form as well as a medical form. No one associated with the liability/agreement form or with the Program has made any representation or promise about the matters covered in the Agreement, apart from what is written in this agreement. In other words, this document contains the entire agreement between the Program participant and EARTHQUEST with respect to the matters covered by the agreement. By reading the terms and conditions presented here, understanding and agreeing to these terms and conditions you acknowledge that EARTHQUEST cannot be held responsible, liable or accused of anything resulting in your dissatisfaction with the Program, courses, our staff, affiliates, agents, partners or representatives. You acknowledge that you agree to waive and release all claims, demands or causes of action against EARTHQUEST and its agents and agree to indemnify them with regard to any financial obligations or liabilities that you may incur personally or any damage resulting from participation in the Program.

Responsibility

All students accepted into our programs or courses will have 1 year from the date they gain acceptance to complete all required program, course or project material for evaluation. Submission of required program, course, or project material or assignments for evaluation past deadline dates will not be accepted and will automatically receive a failing grade. If you are registered for a 12 month International FBT Program and decide to switch/change, shorten the length of your program, course, project, etc. to a 9 month International FBT Program, for example, at any time during your registered 12 month International FBT Program then you **must** receive permission and full approval from your Instructor/Teacher and pay a flat fee of \$200.00 CAD per course before being permitted to continue. This also applies if you wish to extend the length of your program, course or project. Any and all requests for switches/changes must be in writing; signed, dated and witnessed to be considered. If your program length is shortened or extended then you **must** ensure your Instructor/Teacher that you can complete any remaining

Courses within the timeframe that the course is operating. In other words, if you are approved to make the date change and switch into another program, course or project and the course(s) is scheduled to be completed within 90 days and you have 30 days left in the program, course or project you were permitted to switch into, then you will have until the end of the time remaining in the program you switched into to complete any and all courses (ie. within 30 days of the date you are approved to make the date change, not 90 days). Students who submit material after this deadline date will automatically receive a failing grade and participation in the program or course will be terminated. To make a switch/change in any course you must completely and fully fill out the **Request to switch/change application** form. Application forms that are filled out incorrectly will not be accepted and may be returned, thereby delaying your request. To download a Request to switch/change application form simply click on;

<http://www.earthquestcanada.ca/Requesttoswitchchangeapplicationform.pdf>

Students who do not show up for programs, courses, or projects for 1 week (3 in class/field sessions) or accumulate a total of 15 absences without proper notice, permission from their Instructor/Project Coordinator, or valid reasons are considered to have dropped out of their program, course, or project. You acknowledge that EARTHQUEST has the right to terminate your participation in the program, course or project, without refund (if there is blatant indiscretion on the part of the client(s). This includes use of profanity and foul language, drugs, alcohol, submission of required documents such as tests, exams, assignments, course material, lateness, absenteeism, your Agreement with EARTHQUEST, etc., disrespectful behaviour or correspondence, disrespecting the required duties and roles related to the Expedition/Program/Course, the staff, the team or any employees, partners or affiliates working with EARTHQUEST, etc. This includes not showing up, cancelling or forfeiting scheduled tests or field sessions/classes. If participation is terminated it is the client(s) responsibility to withdraw and return home at his/her own expense(s) without refund.

You acknowledge that EARTHQUEST and any employees, agents or affiliates of EARTHQUEST are not responsible for any damages, disappearances, injuries or loss, accidental or otherwise, which may occur or be caused during the course of the Expedition/Project/Course/Program to the destination of your choice.

You acknowledge that the minimum requirement to gain acceptance into the certification courses of the General FAT Program, which are exempt from registration by the Ontario Ministry of Training, Colleges and Universities (MTCU) is a post graduate degree/diploma and/or 3 - 5 years of experience. The minimum requirement to gain acceptance into the international FBT Programs is a High School diploma. To gain acceptance into any EARTHQUEST programs, projects or certification courses that are exempt from registration by MTCU you **must** provide the following documents; a copy of your degree/diploma from a recognized college/university, a copy of your transcript, a current resume, a completed application form, reference forms completed by three (3) elected referees. You acknowledge that you have provided these documents at the time of paying your 100% non-refundable tuition.

EARTHQUEST (Canada) for the Environment and its agents act only as agents for passengers/participants with respect to services provided passenger/participant by others including, but not limited to that service, on the express condition that EARTHQUEST and its agents are not liable for any failure in service, or injury, loss or damage, delay or inconvenience arising out of or in connection with any defect in any vehicle or any act, omission, accident, or error in providing such transportation, hotel, restaurant, or other service. If circumstances beyond EARTHQUESTs control require cancellations or modification of an Expedition/Program/Course before commencement, operator's sole responsibility is refund of payments subject to terms and conditions outlined herein. In case of accident occurring during the land portion of any Expedition/Program/Course, passengers/participants must submit any claim therefore only to the competent judicial authorities where such accident occurred, to be determined exclusively in accordance with the laws of such jurisdiction. By accepting the coupons and tickets and utilizing the service you agree that neither EARTHQUEST nor its agents nor any affiliated companies or representatives shall be liable for any loss, injury or damage to you or your belongings or otherwise in connection with any occurrences beyond their control including breakdown in equipment, strikes, theft, delay or cancellation or changes in itinerary or schedules, etc. Remember, that travel documents, as well as compliance with customs regulations and laws are your responsibility. The ground/tour operator and its agents reserve the right to refuse to accept or retain any person as a member of the Expedition/Program/Course/Project. The right is reserved to withdraw any or all Expeditions/Programs/Courses/Projects or project or portions thereof.

Payment of your non-refundable program, course, project cost is take as acknowledgement of and agreement to the above terms.