



Instructionally Related Activities Report Form

SPONSOR: KIKI PATSCH

DEPARTMENT: ESRM

ACTIVITY TITLE: INTRODUCTION TO GIS ON SANTA ROSA

DATE (S) OF ACTIVITY: MARCH 11TH – 13TH, 2016

Please submit via email to the IRA Coordinator along with any supporting documentation at david.daniels@csuci.edu within 30 days after the activity. Thank you for your commitment to engaging our students!

A. ADDRESS THE FOLLOWING QUESTIONS:

- (1) PROVIDE A DESCRIPTION OF THE ACTIVITY;
 - (2) HOW DID THE ACTIVITY RELATE TO A COURSE(S) AND/OR LEARNING OBJECTIVES?
 - (3) WHAT DO YOU SEE AS THE STRENGTHS OF THE ACTIVITY?
 - (4) WHAT WOULD YOU SAY ARE/WERE THE ACTIVITY'S WEAKNESSES?
 - (5) HOW WOULD YOU IMPROVE THIS ACTIVITY FOR NEXT TIME?
 - (6) WHAT DID YOU LEARN FROM THE PROCESS?
 - (7) WHAT ARE STUDENT RESPONSES TO THE ACTIVITY? ATTACH STUDENT EVALUATIONS OR ASSESSMENTS (IN ACCORDANCE WITH FERPA RESTRICTIONS YOU MUST REMOVE ALL PERSONALLY IDENTIFIABLE STUDENT INFORMATION)
 - 8) GIVE A SUMMARY OF EXPENSES FOR THE ACTIVITY.
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B. ATTENDEE LIST- SUPPORTING DOCUMENT:

In addition to the report form, *in a separate document*, attach to your email a list of attendees complete with each student major and grade level. This for IRA Committee reference only and will not be published on the IRA website. Include your name and the title of your IRA activity on the document.

C. IMAGES FROM ACTIVITY:

Finally, attach to your email up to 6 images demonstrating student participation (under 2 MB total) with captions/titles. Please attach these photos in .JPEG format directly to email. Thank you!



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(1) PROVIDE A DESCRIPTION OF THE ACTIVITY:

STUDENTS ENROLLED IN INTRODUCTION TO GIS (ESRM 328) PARTICIPATED IN A 3 DAY, 2 NIGHT VISIT TO SANTA ROSA ISLAND UNDERGRADUATE RESEARCH STATION. THE SANTA ROSA ISLAND RESEARCH STATION (SRIRS). THE HISTORICAL PHOTO-POINT ANALYSIS PROJECT WAS CREATED FOR THIS CLASS TO MONITOR AND EVALUATE THE RECOVERY OF PLANT COMMUNITIES ON SANTA ROSA ISLAND IN THE ABSENCE OF HUMAN HABITATION AND RANCHING OPERATIONS, WHICH DECIMATED THE NATIVE PLANT COMMUNITIES. MONITORING RECOVERY IS A CRITICAL PART OF DETERMINING THE SUCCESS OF RESTORATION EFFORTS AND THE IMPLEMENTATION OF FUTURE MANAGEMENT DECISIONS. THIS STUDY WILL COMPARE HISTORIC IMAGERY WITH NEW PHOTOS TAKEN BIANNUALLY BY STUDENTS TO MONITOR THE CHANGE IN GROUND COVER AND VEGETATION OVER TIME.

(2) HOW DID THE ACTIVITY RELATE TO A COURSE(S) AND/OR LEARNING OBJECTIVES?

SANTA ROSA ISLAND PROVIDES A VALUABLE EXPERIENCE TO GIS STUDENTS AS THEY ARE ABLE TO USE INFORMATION GATHERED ON THE ISLAND (IN THE FIELD) AND PRODUCE A GEODATABASE AND GIS MAPS IN CLASS, WHICH WILL BE ADDED TO WITH SUBSEQUENT TRIPS BY MY STUDENTS AS WELL AS OTHERS VISITING THE ISLAND. ONE OF OUR IN CLASS LABS DEALS WITH LEARNING HOW TO IMPORT LAT/LONG POINTS FROM A GPS DEVICE INTO ARCMAP AND CREATE USEFUL MAPS. NOW INSTEAD OF RANDOM DATA, THEY HAVE THEIR OWN DATA TO IMPORT. THIS IS AN INVALUABLE SKILL FOR THE STUDENTS. IN ADDITION, THE ESRM STUDENTS BUILD A COMRADERY ON THE ISLAND THAT IS HARD TO REPLICATE ELSEWHERE. IN MY CLASS, I HAD FOUR TRANSFER STUDENTS. BEFORE THE TRIP, THESE STUDENTS DID NOT ENGAGE WITH THE OTHER STUDENTS, WERE QUIET, AND REALLY KEPT TO THEMSELVES. ONCE WE RETURNED FROM THE ISLAND, THESE SAME STUDENTS HAD FRIENDS, ASKED FOR HELP IN LAB, TALKED WITH OTHER STUDENTS AND MAJORS ABOUT ESRM AND CAPSTONE PROJECTS. AFTER THE TRIP, I FELT I HAD A MUCH MORE UNIFIED GROUP OF STUDENTS. IT WAS UNDOUBTEDLY LIFE CHANGING FOR MANY OF THE STUDENTS (SEE REFLECTIONS).

(3) WHAT DO YOU SEE AS THE STRENGTHS OF THE ACTIVITY?

THE SANTA ROSA ISLAND VISIT PROVIDED INCREDIBLE OPPORTUNITIES FOR EXPERIENTIAL LEARNING. THE STUDENTS WERE ABLE TO PARTICIPATE IN REAL RESEARCH ON THE ISLAND, BOTH OUR PROJECT, NATIONAL PARKS PROJECTS, AND OTHER CAPSTONE PROJECTS. THEY WERE ABLE TO SEE HOW INCORPORATING A GEOSPATIAL ELEMENT INTO THESE PROJECTS IS ESSENTIAL. THEY WERE ALSO ABLE TO SEE HOW THE WORK THEY DO SITTING IN THE COMPUTER LAB APPLIES TO FIELD WORK. IN ADDITION, DIALOGUE WITH CAUSE HANNA, KATHERYN MCEACHERN, AND OTHER ESRM CAPSTONE STUDENTS REALLY MOTIVATED THE STUDENTS TO START THINKING ABOUT THEIR OWN CAPSTONE PROJECTS. MOST OF THE STUDENTS WERE TRYING TO THINK OF WAYS THEY COULD GET BACK OUT TO THE ISLAND. IT WAS TRULY INSPIRATIONAL TO MOST OF THEM.



(4) WHAT WOULD YOU SAY ARE/WERE THE ACTIVITY'S WEAKNESSES?

SCHEDULING IS CONSTRAINED BY AVAILABILITY AND TIMING OF ISLAND PACKERS TRANSPORTATION TO THE ISLAND. MORE FREQUENT SERVICE WOULD BENEFIT PARTICIPANTS. ON-ISLAND TRAVEL IS LIMITED BY WALKING DISTANCE TO SITES, THUS OPPORTUNITY TO EXPLORE MORE DISTANT SITES IS LIMITED.

(5) HOW WOULD YOU IMPROVE THIS ACTIVITY FOR NEXT TIME?

THE ONLY THING I WOULD DO TO IMPROVE THIS EXPERIENCE IS TO BRING MORE FOOD. THOSE KIDS CAN EAT! OTHERWISE, THE TRIP WENT OFF WITHOUT A HITCH, THANKS TO THE EXCELLENT PLANNING BY CAUSE AND ROBYN.

(6) WHAT DID YOU LEARN FROM THE PROCESS?

FROM THIS EXPERIENCE, I TRULY LEARNED WHAT SANTA ROSA IS TRULY A MAGICAL PLACE. IMMERSION IN THIS LEARNING ENVIRONMENT ENCOURAGES STUDENTS TO MAKE CONNECTIONS BETWEEN WHAT WE ARE LEARNING IN CLASS AND REAL-WORLD FIELD WORK. BEING ABLE TO WALK THE TRAILS ON THE ISLAND AND KNOW HOW TO MAP THOSE SAME TRAILS IN GIS REALLY HELPED BRING HOME THE COURSE CONTENT. IN ADDITION, I LEARNED THE IMPORTANCE OF STUDENT COMRADERY AND BONDING. THE ATMOSPHERE OF MY COURSE BEFORE AND AFTER ROSA WAS REMARKABLE. MY STUDENTS FELT MORE COMFORTABLE NOT ONLY WITH ME, BUT WITH EACH OTHER. I ALSO THINK DISCONNECTING FROM THE MAINLAND WAS HEALTHY AND INSPIRING FOR THE STUDENTS. ALL IN ALL, I LEARNED THAT I WANT TO REPEAT THIS EXPERIENCE FOR MY STUDENTS AS OFTEN AS POSSIBLE; THEY GOT MORE OUT OF THIS FIELDTRIP THAN I BELIEVED POSSIBLE. THANK YOU FOR THIS OPPORTUNITY.

(7) WHAT ARE STUDENT RESPONSES TO THE ACTIVITY? ATTACH STUDENT EVALUATIONS OR ASSESSMENTS (IN ACCORDANCE WITH FERPA RESTRICTIONS YOU MUST REMOVE ALL PERSONALLY IDENTIFIABLE STUDENT INFORMATION)

SANTA ROSA STUDENT REFLECTIONS

STUDENT 1

BEFORE THIS TRIP I HAD NEVER BEEN TO CHANNEL ISLANDS; EVERY TIME I TOLD SOMEONE THEY WERE SURPRISED, SINCE I WAS NOT ONLY AN ESRM MAJOR BUT ALSO IN MY 4TH YEAR. I HADN'T BEEN IN A CLASS WHERE FUNDING WAS SUFFICIENT OR IT WASN'T PLANNED, NOR DID I HAVE OPPORTUNITY OUTSIDE DUE TO SCHEDULING ISSUES. SO, HAVING BEEN GIVEN THIS OPPORTUNITY IN MY GIS CLASS WAS AMAZING. AT FIRST I WAS APPREHENSIVE SINCE I KNEW THERE WOULD BE NO CELL SERVICE, AND IT WAS WITH A CLASS WHERE I BARELY KNEW ANYONE, BUT I'M STILL EXTREMELY GLAD THIS OPPORTUNITY WAS GIVEN. WHEN I FIRST WENT ON THE ISLAND I RECOGNIZED SOME FAMILIAR SPOTS, SUCH AS THE BOAT NEAR THE PIER THAT'S IN THE WOODEN FENCED AREA, AND THE TORREY PINE FOREST IN THE DISTANCE. BUT, THE EXPERIENCE WHEN FIRST



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GETTING ON THE ISLAND WAS ALSO ONE THAT WAS SORT OF MISERABLE, WITH THE HARD RAINS AND INTENSE WINDS. IT WAS ALSO INCREDIBLY INTERESTING TO HEAR ABOUT THE ENTIRE HISTORY OF THE ISLAND, AND HOW THE OLDEST HUMAN REMAINS WERE FOUND ON THE ISLAND. CHERRY CANYON HIKE WAS ALSO A RECOGNIZABLE POINT FOR ME, AND ALSO ONE OF MY FAVORITES TO NOT ONLY SEE THE MAIN LAND, BUT ALSO SANTA CRUZ ISLAND. ACTUALLY, I WOULD SAY THAT CARRINGTON POINT IS BY FAR MY FAVORITE PLACE TO BE ON THE ISLAND; ONCE YOU GET TO THE END OF THE HIKE, YOU'RE AT THE EDGE OF THE ISLAND AND SEE NOT ONLY SANTA CRUZ ISLAND IN DETAIL, BUT ALSO A TON OF LAZY, RELAXING SEA LIONS AND HARBOR SEALS. ALL IN ALL, MY EXPERIENCE ON THE ISLAND WAS DIFFERENT THAN I ORIGINALLY THOUGHT IT WOULD BE. I KNOW ITS CLICHÉ TO HAVE A "FINDING OF YOURSELF" IN NATURE WHEN YOU'RE SEPARATED FROM 18 MILLION PEOPLE, CELL SERVICE, AND THE ABILITY TO SHOWER, BUT I THINK I WAS ABLE TO FIGURE MYSELF OUT A LITTLE BETTER BEING AWAY FROM THE STRESS OF SO MANY THINGS GOING ON AT ONCE. IT WAS AN EXPERIENCE BEING ABLE TO MAKE FRIENDS AND TALK TO PEOPLE I'VE NEVER ONCE THOUGHT OF TALKING TO AS WELL, AND BEING ABLE TO CONNECT AS A GROUP AND FIND COMMON THINGS. I CAN SAY THAT FOR THIS TRIP I THOROUGHLY ENJOYED MYSELF AND WAS ABLE TO FIND MORE CONFIDENCE IN MYSELF AS A PERSON; I'M JUST SAD THAT I DIDN'T GET TO SEE ANY ISLAND FOXES!

STUDENT 2

SANTA ROSA ISLAND IS SUCH AN AMAZING PLACE. THE LANDSCAPES THAT DR. HANNA DESCRIBES AND ALL OF THE ECOLOGICAL FEATURES MAKE THIS PLACE ONE VERY CLOSE TO MY HEART. ALTHOUGH THIS WASN'T MY FIRST TRIP OUT, AND IT WON'T BE MY LAST, I LEARN SOMETHING NEW EACH TIME. BEING ABLE TO BE OUT ON THE ISLAND WITH MY FELLOW GIS STUDENTS WAS REALLY EDUCATIONAL AND DEFINITELY HELPED ME BETTER UNDERSTAND HOW USEFUL AND RELEVANT GIS IS. THIS TRIP WAS VERY IMPORTANT BECAUSE WE WERE ABLE TO COLLECT AND IMPORT OUR OWN DATA INTO ARCMAP AND PRODUCE A MAP FROM THAT DATA THAT WE COLLECTED ON THE ISLAND. WITH THE SKILLS WE'VE LEARNED IN CLASS, WE WERE ABLE TO BEGIN A LONGTERM HISTORICAL PHOTO PLOT PROJECT ON THE ISLAND THAT WILL HELP RESEARCHERS SEE THE CHANGE AFTER UNGULATES WERE REMOVED IN 2011.

OF COURSE WE CAN COLLECT GPS DATA ANYWHERE, BUT BEING ABLE TO GO OUT TO OUR LOCAL CHANNEL ISLANDS AND CONTRIBUTE TO THE RESTORATION OF SANTA ROSA MAKES LEARNING MORE IMPACTFUL AND MEMORABLE. THE RESEARCH STATION IS A UNIQUE WAY TO LEARN HANDS ON FIELD EXPERIENCE AND I AM VERY THANKFUL FOR THIS OPPORTUNITY.

STUDENT 3

THIS WEEKEND, I WENT TO SANTA ROSA ISLAND. I EXPERIENCED BREATHTAKING HIKES AND PUSHED THROUGH MY GREATEST EXPECTATIONS. BEFORE THIS WEEKEND, MY LONGEST HIKE LASTED TWO HOURS, ON THIS TRIP, HOWEVER, I HIKED FOR OVER SIX HOURS FROM OUR CAMP TO



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ONE OF THE EDGES OF THE ISLAND AND BACK. I FELT SUCH A SENSE OF ACCOMPLISHMENT. WHEN I SAW A MAP OF THE ISLAND, I SAW THAT MY VENTURE WAS ONLY A SMALL PART OF THE ISLAND, THE REST LIES WAITING TO BE EXPLORED. ON MY HIKE, I TOOK THE FIRST “HISTORICAL” PICTURES OF THE ISLAND FROM DIFFERENT GPS POINTS. IT IS CRAZY TO THINK THAT TWENTY YEARS FROM NOW SOMEONE WILL BE TAKING PICTURES AT THE SAME PLACES I TRAVELED THIS SATURDAY. I NEVER THOUGHT, AS A FRESHMAN, I WOULD BE ACCEPTED INTO MY SCHOOL’S COMMUNITY, AND TRUSTED TO CARRY OUT SUCH AN IMPORTANT MISSION. HOPEFULLY, IN THE YEARS TO COME, WE WILL SEE MORE OF A CHAPARRAL ENVIRONMENT, AS MY PART OF THE ISLAND WAS MOSTLY MEADOWS AND GRASSLANDS. BY LEARNING THE HISTORY OF THE ISLAND FROM CAUSE, I FOUND OUT THAT SANTA ROSA USED TO BE CALLED “THE GARDEN OF EDEN” FROM SAILORS BEFORE IT WAS DEVASTATED BY THE SHEEP HERDS GNAWING THE GRASS DOWN TO THE ROOTS, SO THAT THE GRASS WOULD NO LONGER GROW. THE SOIL WAS NO LONGER HELD DOWN BY THE ROOTS AND WAS WASHED INTO THE OCEAN DURING AN ISLAND STORM. THE FACT THAT THE ISLAND HAS RECUPERATED THIS MUCH HOLDS SO MUCH PROMISE FOR ITS FUTURE. I HOPE THAT MORE BUSHES AND TREES BEGIN TO GROW AND THE ISLAND REJUVENATES TO ITS PREVIOUS GLORY. SOME MORE HIGHLIGHTS OF MY ISLAND ADVENTURE ARE THE AWESOME ENDEMIC AND HUMAN INTRODUCED SPECIES THAT I SAW ON THE ISLAND. I SAW A FAMILY OF ABOUT NINE HORSES, HARBOR SEALS BEACHING ON CARRINGTON POINT, WHITE AND RED BIRDS, WILD CUCUMBER, MORNING GLORY, MY FIRST EVER CALIFORNIA POPPY, A BLUE FLOWER WITH EDIBLE ROOTS, SOUR GRASS (YELLOW FLOWERS WITH STEMS THAT TASTE LIKE LEMONS), SEA URCHINS AND CRABS ON THE BEACHES. I, UNFORTUNATELY, DID NOT GET TO SEE THE ISLAND FOX, BUT HOPE TO GET THE CHANCE TO GO ON ANOTHER FIELDTRIP AND SEE THE CUTE LITTLE ANIMALS. THIS EXPERIENCE MADE MY CLASSMATES AND I SO MUCH CLOSER. BEFORE THIS TRIP, I DID NOT KNOW ANYONE’S NAME IN MY CLASS EXCEPT FOR MY PROFESSOR. AFTER, I KNOW ALL OF THEIR NAMES AND HAVE DEVELOPED A FRIENDSHIP AND KINSHIP THAT I HOPE WILL CONTINUE NOW THAT WE ARE BACK ON THE MAINLAND. IF ANY FIELDTRIP DESERVES FUNDING IT WAS THIS ONE. I LEARNED SO MUCH ABOUT THE ISLAND AND MYSELF. I HOPE THAT IT CAN BE THE SAME FOR FUTURE CLASSES.

STUDENT 4

GOING TO SANTA ROSA ISLAND FOR THE WEEKEND WITH MY GIS CLASS WAS A VERY EXCITING AND INTERESTING WAY TO LEARN ABOUT GIS AND WAS FUN EXPERIENCE OVERALL. EVEN THE BOAT RIDES THERE AND BACK WERE A GREAT TIME AS WE GOT TO WATCH WHALES AND DOLPHINS SWIMMING AROUND THE BOAT, AND WE EVEN GOT TO GO INSIDE A VAST SEA CAVE FOR A FEW MINUTES. THE ISLAND ITSELF WAS VERY BEAUTIFUL, AND WHEN WE FIRST GOT THERE AND GOT SETTLED IN WE WERE GIVEN A TOUR OF THE ISLAND AND ITS HISTORICAL FEATURES. THE ISLAND HAS A LONG HISTORY OF OVERUSE, BUT IN RECENT YEARS HAS BEEN GOING THROUGH SOMEWHAT OF A RECOVERY, AND MANY RESEARCH PROJECTS ARE BEING DONE ON THE HABITATS AND LANDSCAPES THERE TO RECORD DATA FROM THIS RECOVERY STAGE. SOME OF THE PROJECTS



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INVOLVE MONITORING PLANT SPECIES AND THERE LOCATIONS, AND THAT IS WHAT I DID WHILE WAS ON THE ISLAND. I WENT WITH A SENIOR WHO WAS DOING HIS CAPSTONE PROJECT ON THE ISLAND, WHICH CONSISTED OF LOCATING AND RECORDING DATA FOR THE ISLAND OAK TREE, SPECIFICALLY THE ONES OUTSIDE OF THE OLD CANOPIES. WE DID SOME PRETTY STRENUOUS HIKING, GOT UP CLOSE AND PERSONAL WITH A LOT OF TREES, AND I GOT TO USE SOME DATA RECORDING DEVICES AND TOOLS AS WELL AS A VERY NICE GPS. AFTER WE DID A FEW DOZEN TREES, SETTING WAYPOINTS, COLLECTING AND RECORDING DATA FOR EACH ONE I BEGAN TO REALIZE THAT THIS IS HOW ATTRIBUTE TABLES ARE FORMED. IT WAS A COOL EXPERIENCE TO REALIZE THIS BECAUSE I ALWAYS OPEN ATTRIBUTE TABLES IN GIS AND SEE 4-6 THOUSAND ATTRIBUTES IN A TABLE AND I NEVER REALLY THINK ABOUT HOW THE DATA WAS COLLECTED. WE WORKED ALL DAY COUNTING TREES, AND ONLY GOT UP TO ABOUT 220, AND THAT MADE ME REALIZE THAT ATTRIBUTE TABLES ARE THE RESULT OF MANY HOURS OF DATA COLLECTION, GIVING ME MORE APPRECIATION AND RESPECT FOR THE COLLECTORS. THE DAYS WENT BY FAST ON THE ISLAND, AND BEFORE I KNEW IT WE WERE ON THE BOAT HEADING BACK. THIS TRIP WAS AN AWESOME EXPERIENCE FOR ME AND I THOUGHT IT WAS VERY RELEVANT TO THE GIS CLASS. IT WAS INTERESTING TO CONNECT THE FIELD WORK WITH WHAT YOU SEE ON THE COMPUTER SCREEN, AND I DEFINITELY GOT SOME INSPIRATION FOR WHERE I WANT TO DO MY CAPSTONE PROJECT. I'M HOPING I HAVE MORE EXPERIENCES LIKE THIS ONE IN THE FUTURE BECAUSE IT WAS A GOOD TIME AND AN INTERESTING WAY TO LEARN ABOUT FIELD WORK.

STUDENT 5

THIS WAS MY FIRST TRIP TO SANTA ROSA AND IT WON'T BE MY LAST! THE TRIP WAS VERY FUN, INSPIRATIONAL, A GOOD SOURCE OF STRESS RELIEF, AND EDUCATIONAL. I WAS ABLE TO EXPERIENCE NATURE AND GIS DATA COLLECTION IN A MORE UP FRONT AND PERSONAL WAY THEN JUST THOUGH WORDS THAT ARE LECTURED TO YOU IN A CLASSROOM. GATHERING OUR OWN DATA FOR GIS WAS VERY INTERESTING AND ECONOMICALLY BENEFICIAL FOR MY FUTURE. THOUGH CAPSTONE STUDENTS WE HAD OPPORTUNITIES TO LEARN ABOUT NEW ENVIRONMENTAL METHODS AND FIELDS OF STUDIES SO SOME WERE ABLE TO FIND CERTAIN INTERESTS IN THE ENVIRONMENTAL FIELD. I THINK FUTURE GIS CLASSES SHOULD GO, AFTER ALL IT'S AN OPPORTUNITY TO VISIT THE ISLAND AND TO LEARN WHILE IN THE FIELD. AND IT'S A WAY TO NOT ONLY MAKE CONNECTIONS WITH NATURE BUT WITH OTHERS AND OURSELVES.

STUDENT 6

THE CLASS TRIP TO SANTA ROSA ISLAND WITH MY GIS CLASS WAS ONE OF MY FAVORITE COLLEGE EXPERIENCES SO FAR. TO BE ABLE TO SEE BLUE WHALES, HUMPBACK WHALES, AND DOLPHINS ON THE WAY THERE WAS UNREAL. SEEING TWO ISLAND FOXES ON THE TORREY PINES TRAIL WAS SOMETHING I NEVER THOUGHT I'D BE ABLE TO EXPERIENCE. IT WAS A GREAT CHANCE TO GET TO KNOW SOME OF MY CLASS MATES AND OTHER STUDENTS IN MY MAJOR BETTER. HIKING WITH A



CLASS MATE SO FAR FROM OTHER PEOPLE REALLY GAVE YOU AN INCREDIBLE SENSE OF PLACE. THERE WERE CERTAIN TIMES IN OUR HIKE THAT WE WERE JUST IN AWE KNOWING THAT THERE WAS NOBODY ANYWHERE AROUND US AND IT GAVE ME SUCH A FEELING OF ATTACHMENT TO THE ISLAND. GOING TO THE PIER AT NIGHT AND LOOKING AT THE STARS AND ACTUALLY BEING ABLE TO SEE THEM WAS BREATHTAKING.

BEING ABLE TO UTILIZE GIS AND UNDERSTAND HOW TO USE COORDINATE SYSTEMS IN A FIELD TYPE EXPERIENCE GAVE ME A BETTER UNDERSTANDING AS TO WHY KNOWING GIS IS ESSENTIAL. I FEEL LIKE IT IS IMPORTANT TO GET FIELD WORK DONE WHILE STILL IN SCHOOL SO THAT I AM ABLE TO TELL WHAT I WOULD LIKE TO DO AS A CAREER SOMEDAY.

STUDENT 7

I HAD A GREAT TIME AT SANTA ROSE ISLAND. NOT ONLY DID I LEARN A GREAT DEAL ABOUT THE GEOGRAPHY, ECOLOGY, AND THE HISTORY ABOUT THE ISLAND, I OBTAINED A MUCH DEEPER UNDERSTANDING OF WHERE HUMANS ARE AS A SPECIES. I HAD REALIZED HOW INSIGNIFICANT AND SMALL WE ARE COMPARED TO THE PLANET. I ALSO REALIZED HOW DESTRUCTIVE HUMANS CAN BE WHEN WE WORK COLLECTIVELY. HOWEVER, THE SAME COULD BE SAME ABOUT SUSTAINABILITY. NO SINGLE MAN CAN DESTROY THE PLANET, BUT NO SINGLE MAN CAN SAVE THE PLANET, AND I TRULY BELIEVE WE CAN LIVE SUSTAINABLY IF WE WORK COLLECTIVELY. I ALSO OBTAINED FRIENDSHIP THROUGHOUT MY TIME AT SANTA ROSA ISLAND. BEFORE THIS TRIP, I HAD LITTLE TO FEW FRIENDS HERE AT CHANNEL ISLANDS BECAUSE I AM A NEW TRANSFER STUDENT. HOWEVER, THIS TRIP ENABLED ME TO CONNECT TO MY CLASSMATES AND COLLEAGUES, ESPECIALLY THE ONES IN MY MAJOR. THIS WILL HELP ME DOWN THE ROAD, NOT ONLY ACADEMICALLY, BUT MOTIVATIONALLY AND EMOTIONALLY. THE KNOWLEDGE I OBTAINED ON THIS TRIP SEEMED ENDLESS AS WELL. I WILL LOOK FORWARD TO VISITING, AND POSSIBLY STUDYING AT CHANNEL ISLANDS NATIONAL PARK, AT THE RESEARCH STATION, OR PERHAPS ELSEWHERE. I STRONGLY RECOMMEND THIS TRIP TO ANYONE, ESPECIALLY ENVIRONMENTAL SCIENCE AND RESOURCE MANAGEMENT MAJORS. IN CONCLUSION, IT IS HARD TO DESCRIBE WHAT YOU SEE, LEARN, OBTAINED, AND CONNECT WITH WHEN GOING AND STAYING ON AN ISOLATED ISLAND FOR AN EXTENDED PERIOD OF TIME. BUT TO PUT IT IN REASONABLE TERMS, IT WAS TRULY SPECTACULAR.

STUDENT 8

I AM VERY THANKFUL FOR BEING GIVEN THE OPPORTUNITY TO GO TO SANTA ROSA FOR THIS INTRODUCTION TO GIS CLASS. AS A CLASS, WE WERE ABLE TO WORK IN THE REAL WORD, WHICH ALWAYS HELPS ME MORE THAN A LECTURE. IN ADDITION, I RECEIVED VALUABLE TIME WITH AND INFORMATION FROM DR. CAUSE HANNA AND PROFESSOR PATSCH THAT IS HELPING ME FIGURE OUT MY FUTURE.

ON SANTA ROSA, WE WERE ASSIGNED SPECIFIC LOCATIONS WHERE CAUSE WANTED US TO TAKE PHOTOS. WE LEARNED HOW TO USE GPS, HISTORICAL PHOTOS, AND A COMPASS TO FIGURE



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OUT THE CORRECT LOCATIONS, WHICH PROVIDED VALUABLE KNOWLEDGE FOR REAL WORLD SITUATIONS. IT WAS VERY EXCITING TO LEARN HOW TO USE THESE THINGS, AS WELL AS BE A PART OF A LONG-TERM STUDY OF THE VEGETATION CHANGES THROUGHOUT SANTA ROSA. AS A STUDENT AT CSUCI, I CAN NOW SAY THAT I CONTRIBUTED TO A STUDY WHERE SOME REALLY INTERESTING AND GREAT RESULTS MIGHT COME FROM.

WHILE ON THE ISLAND, I WAS ABLE TO HAVE TIME TO TALK TO CAUSE INCREASE MY KNOWLEDGE OF THE ISLAND, AS WELL AS START THINKING OF POSSIBLE CAPSTONE IDEAS TO DO ON THE ISLAND. CAUSE IS A VALUABLE RESOURCE FOR STUDENTS, AND EVERY MOMENT WITH HIM IS BENEFICIAL FOR US IN SEVERAL WAY. HE IMPROVES OUR COMMUNICATION AND PRESENTING SKILLS, AND HE ENCOURAGES ME TO WANT TO BE A BETTER STUDENT FOR HIM. IN REGARDS TO PROFESSOR PATSCH, I WAS ABLE TO TALK TO HER ABOUT OPPORTUNITIES INVOLVING GIS THAT I CAN HELP HER WITH IN THE FUTURE. IT IS THIS KIND OF COMMUNICATION THAT ASSISTS ME IN POSSIBLE CAPSTONE IDEAS AND CAREER DIRECTIONS.

ON A FINAL NOTE, PROFESSOR PATSCH WAS VERY GENEROUS IN PURCHASING THE FOOD FOR OUR DINNERS. THIS EASED THE STRESSED OF STUDENTS NEEDING TO FIGURE OUT WHO IS BUYING WHAT ITEMS FOR DINNERS AND KEEPING THE STUDENTS' COSTS OF FOOD TO A MINIMUM.

STUDENT 9

THE TRIP WAS A PERFECT OPPORTUNITY FOR ME TO LEARN HOW TO APPLY THE USE OF GIS TO REAL LIFE. IT'S ONE THING TO USE GIVEN DATA TO MAKE A MAP BUT IT'S ANOTHER THING TO ACTUALLY GATHER THE DATA OURSELVES AND MAKE A MAP. THIS SKILL IS SO IMPORTANT BECAUSE MANY OF US ENVIRONMENTAL SCIENCE STUDENTS WILL BE USING GIS FOR OUR CAPSTONE PROJECTS AS WELL AS IN OUR CAREERS. PERSONALLY THIS TRIP HELPED OPEN MY EYES TO WHICH SPECIFIC ENVIRONMENTAL TOPICS APPEAL TO ME MOST AND ALSO GAVE ME IDEAS ON WHAT I WANT TO DO MY CAPSTONE PROJECT ON NEXT YEAR.

DURING THIS TRIP WE LEARNED HOW TO USE THE HAND HELD GPS DEVICES TO TAKE SPECIFIC POINTS AND ALSO MAP THE PERIMETER OF AN AREA. WE ALSO LEARNED HOW TO USE A COMPASS TO NAVIGATE. THREE OTHER STUDENTS AND I WENT ON A 20 MILE ROUND TRIP HIKE TO TWO LAGOONS ON THE ISLAND. WE WERE ASSISTING A STUDENT WITH HER CAPSTONE PROJECT REGARDING THE WATER QUALITY AND SALINITY LEVELS OF THE WATER IN THE LAGOONS. WE TESTED WATER AT TEN DIFFERENT POINTS ON BOTH LAGOONS AND TOOK A GPS POINT AT EACH SPOT. WE RECORDED DATA AND USED THE GPS TO MAP THE PERIMETER OF BOTH LAGOONS. I AM REALLY EXCITED TO USE THE DATA IN ARC GIS AND SEE OUR DATA COME TO LIFE. THESE SKILLS ARE REALLY IMPORTANT ESPECIALLY WHEN DEALING WITH BODIES OF WATER. I REALIZED THAT I WANT TO STUDY WATER AND POSSIBLY USE THE MUGU WETLANDS AS THE BASIS FOR MY CAPSTONE PROJECT. WITHOUT THIS TRIP I WOULDN'T HAVE LEARNED NEW FIELD TECHNIQUES OR KEYED INTO DIFFERENT SCIENCE TOPICS THAT APPEAL TO ME. THANK YOU VERY MUCH FOR THE



OPPORTUNITY TO GO ON THIS TRIP. I HOPE OTHER STUDENTS GET THE OPPORTUNITY TO TAKE THIS CLASS AND GO ON THIS TRIP.

STUDENT 10

GOING TO SANTA ROSA ISLAND FOR ANY REASON IS AN AMAZING OPPORTUNITY, BUT TO BE ABLE TO GO AND DO GENUINE RESEARCH AND HELP MONITOR THE GROWTH OF THE ISLAND WAS AN EVEN GREATER OPPORTUNITY. ON OUR SECOND DAY (SATURDAY) ON THE ISLAND, I HAD THE FANTASTIC OPPORTUNITY TO TAKE A 20 MILE ROUND TRIP HIKE TO THE TWO LAGOONS ON THE EAST SIDE OF THE ISLAND. WHEN WE WERE THERE, WE WERE ABLE TO TAKE REFERENCE PICTURES OF THE LAGOON TO MONITOR THE GROWTH OF THE LAGOONS HABITAT. MY GROUP ALSO WAS ABLE TO USE A WATER PROBE TO TEST THE SALINITY, PH, AND DISSOLVED OXYGEN VARIABLES OF THE WATER. WHILE TAKING THESE MEASUREMENTS, WE TOOK GIS MAPPING POINTS AT EACH SPOT. THIS HANDS ON EXPERIENCE WITH THE POINTS USED FOR THE GIS MAPS I'M WORKING ON BROUGHT THE WORK I'M DOING IN CLASS TO LIFE. BEING ABLE TO HAVE A PHYSICAL CONNECTION TO THE POINTS MADE ME UNDERSTAND THE IMPORTANCE OF PROPER UTILIZATION OF THE INFORMATION GIVEN TO ME IN CLASS WHEN TAKING DATA INFORMATION. I KNOW THAT BECAUSE OF THIS OPPORTUNITY, I NOW HAVE A GREATER UNDERSTANDING OF THE INFORMATION GIVEN TO ME IN CLASS.

ONE AMAZING AND UNEXPECTED OUTCOME OF THIS EXPERIENCE WAS THE EMOTIONAL ATTACHMENT I MADE WITH THE ISLAND. THE HIKE I TOOK ON SATURDAY ALLOWED ME TO SEE THE LOCAL WILDLIFE OF THE ISLAND, INCLUDING THE INFAMOUS ISLAND FOX. PHYSICALLY SEEING A WILD ANIMAL THAT WAS ON THE BRINK OF EXTINCTION LESS THAN 10 YEARS AGO MADE ME APPRECIATE THE IMPORTANCE OF THE WORK DONE OF THE ISLAND. HAVING SEEN THE ISLAND FOX, AND WORKING ON THE GEOSPATIAL ANALYSIS FOR MY GIS CLASS HELPED ME REALIZE THAT I WANT TO WORK ON HELPING IMPROVE OUR UNDERSTANDING OF THE SUCCESSION OCCURRING ON THE ISLAND FOR THE REST OF MY COLLEGE CAREER. THIS TRIP HAS HELPED SHAPE A MAJOR PART OF MY COLLEGE EXPERIENCE AND I HOPE THAT OTHER STUDENTS THAT TAKE THIS CLASS WILL ALSO HAVE THE OPPORTUNITY TO EXPERIENCE ALL THAT I DID ON THIS ONE TRIP.

STUDENT 11

I HAVE SPENT SEVERAL DAYS ON SANTA ROSA ISLAND IN THE PAST WITH A FOCUS ON MULTIPLE OTHER ASPECTS OF MY EDUCATION. THIS TRIP ON FRIDAY MARCH 11, 2016 DEFINITELY ENHANCED MY LEARNING EXPERIENCE OF GIS. WE FOCUSED ON HOW TO EFFICIENTLY USE GPS UNITS FOR FIELD MAPPING. WE TOOK PART IN A NEW STUDY ABOUT ESTABLISHING GPS WAYPOINTS FOR PHOTO PLOTS TO OBSERVE AND QUANTIFY THE CHANGES IN VEGETATION AND LANDSCAPE WITHIN THE PICTURES.

THE TUTORIALS FOR GIS CLASS CERTAINLY ARE THE BEST WAY TO LEARN HOW TO USE THE COMPUTER PROGRAM, BUT BEING IN THE FIELD AND LOOKING DIRECTLY AT THE LANDSCAPE THAT YOU ARE STUDYING AND BUILDING MAPS ABOUT IN GIS HELPS PUT MANY THINGS INTO



PERSPECTIVE. THIS FIELD TRIP MADE ME REALIZE THAT THE ACCURACY OF MAP MAKING IS VERY IMPORTANT FOR REPLICATING FIELD METHODS IN ORDER TO GET GOOD DATA ABOUT WHAT WE ARE STUDYING. BEING IN THE PLACE THAT WE ARE STUDYING ALSO PUTS A SENSE OF RELEVANCE TO THE STUDY RELATED TO THE PLACE WE ARE IN. AFTER VISITING SANTA ROSA ISLAND IN THIS CAPACITY IT HAS BEEN MADE VERY CLEAR TO ME THAT GIS IS AN IMPORTANT ASPECT OF SCIENTIFIC RESEARCH IN GENERAL.

SAVE THE RAIN THAT POURED ON US FOR THE FIRST FEW HOURS ON THE ISLAND, THE TRIP WENT VERY SMOOTHLY. IT WAS AN EXCELLENT OPPORTUNITY TO VIEW THE ISLAND THROUGH A DIFFERENT LENS, SPECIFICALLY BEING THE PERSPECTIVE OF A GIS SPECIALIST. I GOT THE CHANCE TO EXPLORE A NEW PART OF THE ISLAND THAT I HADN'T VISITED BEFORE.

I FEEL LIKE IT IS VERY IMPORTANT FOR A STUDENT TO BE EXPOSED TO ALL OF LEVELS OF SCIENTIFIC RESEARCH, FROM THE PRODUCTION OF THE PROTOCOL TO "CRUNCHING THE NUMBERS" AND COMING TO CONCLUSIONS ABOUT THE DATA THAT HAS BEEN COLLECTED. BEING ON BLACK MOUNTAIN WITH A GPS UNIT AS A PART OF A CLASSMATES SAMPLING METHOD REALLY HIT HOME THE WHOLE POINT OF VISITING SANTA ROSA ISLAND FOR AN INTRODUCTORY GIS CLASS.

STUDENT 12

THE FIELD TRIP TO SANTA ROSA ISLAND WAS A VERY EDUCATIONAL AND OVERALL POSITIVE EXPERIENCE FOR ME. ON THIS TRIP, I GAINED KNOWLEDGE AND EXPERIENCE THAT WILL HELP ME IN CHOOSING THE DIRECTION I WILL BE GOING WITH MY ESRM DEGREE AND THE CAPACITY OF THE PROGRAM AND GENERAL FIELD RELATED TO MY MAJOR. THE TRIP WAS GEARED TOWARD INTRODUCING THE ISLAND'S MANY DIFFERENT AREAS AND PLANT AND ANIMAL LIFE ON THE FIRST DAY, ORGANISM AND ORGANISM COMMUNITY RESTORATION AND CONSERVANCY STRATEGIES AND TACTICS ON THE SECOND DAY, AND FINALLY LAND EXPLORATION AND TOOL AND DEVICE USE INCLUDING COMPASS AND GPS USE. ALL OF THIS WAS VERY USEFUL AND ARGUABLY CRUCIAL TO THE INFORMATION I HAVE BEEN LEARNING IN MY GIS CLASS.

THE FIRST DAY, WE HIKE AROUND THE ISLAND A LOT AND GOT FAMILIAR WITH THE VARIOUS PEAKS AND MOUNTAINS AND GENERALLY HOW TO NAVIGATE BY SIGHT AND PEAK NAMES AS WELL AS LEARNING ABOUT THE VARIOUS PLANTS THAT WERE STARTING TO BLOOM IN AT THIS TIME OF EARLY SPRING. WE ALSO SAW AND WERE TAUGHT ABOUT THE VAST WILDLIFE ON THE ISLAND AND THE HISTORY OF WILDLIFE (HISTORIC AND PRE-HISTORIC), NATIVES AND HUMAN INTRUSION OF THE ISLAND. WE ALSO WALKED ACROSS THE BEACH THROUGH SAND, ROCKS AND AN UPCOMING HIGH TIDE THAT WE HAD TO RACE THROUGH, ALL OF WHICH WAS A GREAT LEARNING EXPERIENCE AS FAR AS LEARNING TO DEAL WITH THE ELEMENTS INCLUDING STRONG WINDS, RAIN, COLD OCEAN WATER, STEEP HILLS AND MUCH MORE.

THE SECOND DAY, I WENT WITH A GROUP LED BY A SENIOR ESRM MAJOR TO HELP HIM WITH HIS CAPSTONE PROJECT. HE WAS STUDYING THE SIZE, HEALTH AND LOCATION OF THE ISLAND



OAK TREES, SPECIFICALLY THE OUTLIERS, THAT HE HYPOTHESIZES ARE DISPERSED THROUGHOUT THE ISLAND AWAY FROM THE MAIN GROUPS DUE TO CERTAIN BIRDS THAT ARE KNOWN FOR EATING THE ACORNS THAT GROW ON THESE TREES AND THEREFORE DISPERSING THE SEEDS WITHIN THE ACORN AROUND THE ISLAND DURING FLIGHT. THE GROUP PARTICIPATED IN THE STRENUOUS HIKE, SOMETIMES ACROSS 75 DEGREE INCLINES, TO GATHER DATA ABOUT INDIVIDUAL TREES, INCLUDING HEIGHT CLASS, TRUNK NUMBER, DBH, ACORN GROWTH, AND PERCENTAGE DEAD. WE ALSO PARTICIPATED IN BIRD WATCHING TO FIND OUT WHAT BIRDS WERE HANGING AROUND THE AREA, SPECIFICALLY THE ACORN WOODPECKER AND THE COMMON RAVEN. ALL THIS WAS INFORMATIVE FOR OUR GUIDE ON HIS CAPSTONE PROJECT AND VERY INFORMATIVE FOR THE REST OF US AS WELL, AS THIS TAUGHT US A VERY USEFUL METHOD FOR DATA COLLECTION FOR THE PURPOSE OF STRATEGIZING FOR RESTORATION AND CONSERVANCY FOR THIS TREE THAT IS IMPORTANT TO THE ISLANDS ECOSYSTEM AND HISTORY.

THE LAST DAY, WE PLAYED A RACE STYLED GAME THAT FORCED US TO GET WELL ACQUAINTED WITH HOW TO USE A COMPASS AND GPS. WE LEARNED A LITTLE THE PREVIOUS DAY, MY GROUP HAD TO USE BOTH A GPS AND COMPASS TO LOCATE SOME OF THESE TREES AS WELL AS TAKE WAYPOINTS OF THE TREES LOCATED. WE USED THIS KNOWLEDGE AND GOT A LOT MORE HANDS ON EXPERIENCE DURING THE RACING GAME WHERE FOUR SEPARATE GROUPS HAD TO FIND CLUES PLACED OVER THE GENERAL CAMPING AREA AROUND THE RANCHING PART OF THE ISLAND WHERE THE BUNKER WAS THAT WE STAYED IN. THE FIRST GROUP TO FIND THE FINISH LINE GOT A PRIZE SO OUR DRIVE WAS GREAT AND OUR COMPASS AND GPS TRAINING WAS SELF-DRILLED IN.

OVER ALL THE TRIP WAS VERY SCHOLASTIC AND I KNOW WILL PROVE TO BE VITAL TO THE REST OF MY EDUCATION AND MY FUTURE CAREER. IT IS UNUSUAL TO HAVE AN OPPORTUNITY TO GET REAL FIELD WORK SO PACKED WITH HANDS ON LEARNING THAT IS SO FUNDAMENTAL TO THE ESRM FIELD. PROBABLY MOST IMPORTANTLY OF ALL, IT REALLY BOOSTED MY CONFIDENCE TO PERFORM WELL IN THE FIELD, IT BROKE THE ICE BETWEEN ALL THE STUDENTS, INCLUDING MYSELF, AND HELPED ME CREATE IMPORTANT CONNECTIONS INCLUDING A COMMUNITY OF FRIENDS, STUDY PARTNERS, AND LIKELY FUTURE WORKMATES THAT I WOULD NOT HAVE FOUND OTHERWISE.

8) GIVE A SUMMARY OF EXPENSES FOR THE ACTIVITY.

GRANT PROVIDED TRANSPORTATION EXPENSES TO SANTA ROSA ISLAND FOR 20 STUDENTS & 1 FACULTY.

B. ON SEPARATE DOCUMENT, PLEASE ATTACH ATTENDEE LIST (PERSONALLY IDENTIFIABLE INFO REMOVED)

SEE ATTACHED

C. PLEASE INCLUDE UP TO 6 IMAGES AS ATTACHMENTS TO YOUR EMAIL SUBMISSION

SEE ATTACHED



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Attendance Roster

Arbogast, Matthew Bernard
Arrue, Lisset Andrea
Ceja, Jose Alejandro
Coty, Aspen Nicole
Domingo, Magdalena Marie
Edwards, Mary Ann
Fay, Tara
Greenfield, Corey Anne
Hennigan, Kyle Steven
Lopez, Dulce Maria
McQuaid, Michael James
Palasik, Shelby Faye
Pascal, Madeline Rose
Shepherd, Amanda Rosaleen
Sullivan Jr, Timothy Vincent
Swann, Finnian C
Vella, Lee Anthony
Witteman, Jeffrey Michael

IRA #750: Introduction to GIS on Santa Rosa Island:

Santa Rosa Student Reflections

Student 1

Before this trip I had never been to Channel Islands; every time I told someone they were surprised, since I was not only an ESRM major but also in my 4th year. I hadn't been in a class where funding was sufficient or it wasn't planned, nor did I have opportunity outside due to scheduling issues. So, having been given this opportunity in my GIS class was amazing. At first I was apprehensive since I knew there would be no cell service, and it was with a class where I barely knew anyone, but I'm still extremely glad this opportunity was given. When I first went on the island I recognized some familiar spots, such as the boat near the pier that's in the wooden fenced area, and the torrey pine forest in the distance. But, the experience when first getting on the island was also one that was sort of miserable, with the hard rains and intense winds. It was also incredibly interesting to hear about the entire history of the island, and how the oldest human remains were found on the island. Cherry canyon hike was also a recognizable point for me, and also one of my favorites to not only see the main land, but also Santa Cruz Island. Actually, I would say that Carrington point is by far my favorite place to be on the island; once you get to the end of the hike, you're at the edge of the island and see not only Santa Cruz Island in detail, but also a ton of lazy, relaxing sea lions and harbor seals. All in all, my experience on the Island was different than I originally thought it would be. I know its cliché to have a "finding of yourself" in nature when you're separated from 18 million people, cell service, and the ability



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to shower, but I think I was able to figure myself out a little better being away from the stress of so many things going on at once. It was an experience being able to make friends and talk to people I've never once thought of talking to as well, and being able to connect as a group and find common things. I can say that for this trip I thoroughly enjoyed myself and was able to find more confidence in myself as a person; I'm just sad that I didn't get to see any island foxes!

Student 2

Santa Rosa Island is such an amazing place. The landscapes that Dr. Hanna describes and all of the ecological features make this place one very close to my heart. Although this wasn't my first trip out, and it won't be my last, I learn something new each time. Being able to be out on the island with my fellow GIS students was really educational and definitely helped me better understand how useful and relevant GIS is. This trip was very important because we were able to collect and import our own data into ArcMap and produce a map from that data that we collected on the island. With the skills we've learned in class, we were able to begin a longterm historical photo plot project on the island that will help researchers see the change after ungulates were removed in 2011.

Of course we can collect GPS data anywhere, but being able to go out to our local Channel Islands and contribute to the restoration of Santa Rosa makes learning more impactful and memorable. The research station is a unique way to learn hands on field experience and I am very thankful for this opportunity.

Student 3

This weekend, I went to Santa Rosa Island. I experienced breathtaking hikes and pushed through my greatest expectations. Before this weekend, my longest hike lasted two hours, on this trip, however, I hiked for over six hours from our camp to one of the edges of the island and back. I felt such a sense of accomplishment. When I saw a map of the island, I saw that my venture was only a small part of the island, the rest lies waiting to be explored. On my hike, I took the first "historical" pictures of the island from different GPS points. It is crazy to think that twenty years from now someone will be taking pictures at the same places I traveled this Saturday. I never thought, as a freshman, I would be accepted into my school's community, and trusted to carry out such an important mission. Hopefully, in the years to come, we will see more of a chaparral environment, as my part of the island was mostly meadows and grasslands. BY learning the history of the island from Cause, I found out that Santa Rosa used to be called "the Garden of Eden" from sailors before it was devastated by the sheep herds gnawing the grass down to the roots, so that the grass would no longer grow. The soil was no longer held down by the roots and was washed into the ocean during an island storm. The fact that the island has recuperated this much holds so much promise for its future. I hope that more bushes and trees begin to grow and the island rejuvenates to its previous glory. Some more highlights of my island adventure are the awesome endemic and human introduced species that I saw on the island. I saw a family of about nine horses, harbor seals beaching on Carrington point, white and red birds, wild cucumber,



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morning glory, my first ever California poppy, a blue flower with edible roots, sour grass (yellow flowers with stems that taste like lemons), sea urchins and crabs on the beaches. I, unfortunately, did not get to see the island fox, but hope to get the chance to go on another fieldtrip and see the cute little animals. This experience made my classmates and I so much closer. Before this trip, I did not know anyone's name in my class except for my professor. After, I know all of their names and have developed a friendship and kinship that I hope will continue now that we are back on the mainland. If any fieldtrip deserves funding it was this one. I learned so much about the island and myself. I hope that it can be the same for future classes.

Student 4

Going to Santa Rosa Island for the weekend with my GIS class was a very exciting and interesting way to learn about GIS and was fun experience overall. Even the boat rides there and back were a great time as we got to watch whales and dolphins swimming around the boat, and we even got to go inside a vast sea cave for a few minutes. The island itself was very beautiful, and when we first got there and got settled in we were given a tour of the island and its historical features. The island has a long history of overuse, but in recent years has been going through somewhat of a recovery, and many research projects are being done on the habitats and landscapes there to record data from this recovery stage. Some of the projects involve monitoring plant species and their locations, and that is what I did while was on the island. I went with a senior who was doing his capstone project on the island, which consisted of locating and recording data for the island oak tree, specifically the ones outside of the old canopies. We did some pretty strenuous hiking, got up close and personal with a lot of trees, and I got to use some data recording devices and tools as well as a very nice GPS. After we did a few dozen trees, setting waypoints, collecting and recording data for each one I began to realize that this is how attribute tables are formed. It was a cool experience to realize this because I always open attribute tables in GIS and see 4-6 thousand attributes in a table and I never really think about how the data was collected. We worked all day counting trees, and only got up to about 220, and that made me realize that attribute tables are the result of many hours of data collection, giving me more appreciation and respect for the collectors. The days went by fast on the island, and before I knew it we were on the boat heading back. This trip was an awesome experience for me and I thought it was very relevant to the GIS class. It was interesting to connect the field work with what you see on the computer screen, and I definitely got some inspiration for where I want to do my capstone project. I'm hoping I have more experiences like this one in the future because it was a good time and an interesting way to learn about field work.

Student 5

This was my first trip to Santa Rosa and it won't be my last! The trip was very fun, inspirational, a good source of stress relief, and educational. I was able to experience nature and GIS data collection in a more up front and personal way than just through words that are lectured



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to you in a classroom. Gathering our own data for GIS was very interesting and economically beneficial for my future. Though capstone students we had opportunities to learn about new environmental methods and fields of studies so some were able to find certain interests in the environmental field. I think future GIS classes should go, after all it's an opportunity to visit the island and to learn while in the field. And it's a way to not only make connections with nature but with others and ourselves.

Student 6

The class trip to Santa Rosa Island with my GIS class was one of my favorite college experiences so far. To be able to see blue whales, humpback whales, and dolphins on the way there was unreal. Seeing two island foxes on the Torrey Pines trail was something I never thought I'd be able to experience. It was a great chance to get to know some of my class mates and other students in my major better. Hiking with a class mate so far from other people really gave you an incredible sense of place. There were certain times in our hike that we were just in awe knowing that there was nobody anywhere around us and it gave me such a feeling of attachment to the island. Going to the pier at night and looking at the stars and actually being able to see them was breathtaking.

Being able to utilize GIS and understand how to use coordinate systems in a field type experience gave me a better understanding as to why knowing GIS is essential. I feel like it is important to get field work done while still in school so that I am able to tell what I would like to do as a career someday.

Student 7

I had a great time at Santa Rosa Island. Not only did I learn a great deal about the geography, ecology, and the history about the island, I obtained a much deeper understanding of where humans are as a species. I had realized how insignificant and small we are compared to the planet. I also realized how destructive humans can be when we work collectively. However, the same could be same about sustainability. No single man can destroy the planet, but no single man can save the planet, and I truly believe we can live sustainably if we work collectively. I also obtained friendship throughout my time at Santa Rosa Island. Before this trip, I had little to few friends here at Channel Islands because I am a new transfer student. However, this trip enabled me to connect to my classmates and colleagues, especially the ones in my major. This will help me down the road, not only academically, but motivationally and emotionally. The knowledge I obtained on this trip seemed endless as well. I will look forward to visiting, and possibly studying at Channel Islands National Park, at the research station, or perhaps elsewhere. I strongly recommend this trip to anyone, especially environmental science and resource management majors. In conclusion, it is hard to describe what you see, learn, obtained, and connect with when going and staying on an isolated island for an extended period of time. But to put it in reasonable terms, it was truly spectacular.



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Student 8

I am very thankful for being given the opportunity to go to Santa Rosa for this Introduction to GIS class. As a class, we were able to work in the real world, which always helps me more than a lecture. In addition, I received valuable time with and information from Dr. Cause Hanna and Professor Patsch that is helping me figure out my future.

On Santa Rosa, we were assigned specific locations where Cause wanted us to take photos. We learned how to use GPS, historical photos, and a compass to figure out the correct locations, which provided valuable knowledge for real world situations. It was very exciting to learn how to use these things, as well as be a part of a long-term study of the vegetation changes throughout Santa Rosa. As a student at CSUCI, I can now say that I contributed to a study where some really interesting and great results might come from.

While on the island, I was able to have time to talk to Cause increase my knowledge of the island, as well as start thinking of possible capstone ideas to do on the island. Cause is a valuable resource for students, and every moment with him is beneficial for us in several way. He improves our communication and presenting skills, and he encourages me to want to be a better student for him. In regards to Professor Patsch, I was able to talk to her about opportunities involving GIS that I can help her with in the future. It is this kind of communication that assists me in possible capstone ideas and career directions.

On a final note, Professor Patsch was very generous in purchasing the food for our dinners. This eased the stressed of students needing to figure out who is buying what items for dinners and keeping the students' costs of food to a minimum.

Student 9

The trip was a perfect opportunity for me to learn how to apply the use of GIS to real life. It's one thing to use given data to make a map but it's another thing to actually gather the data ourselves and make a map. This skill is so important because many of us environmental science students will be using GIS for our capstone projects as well as in our careers. Personally this trip helped open my eyes to which specific environmental topics appeal to me most and also gave me ideas on what I want to do my capstone project on next year.

During this trip we learned how to use the hand held GPS devices to take specific points and also map the perimeter of an area. We also learned how to use a compass to navigate. Three other students and I went on a 20 mile round trip hike to two lagoons on the island. We were assisting a student with her capstone project regarding the water quality and salinity levels of the water in the lagoons. We tested water at ten different points on both lagoons and took a GPS point at each spot. We recorded data and used the GPS to map the perimeter of both lagoons. I



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am really excited to use the data in Arc GIS and see our data come to life. These skills are really important especially when dealing with bodies of water. I realized that I want to study water and possibly use the Mugu Wetlands as the basis for my capstone project. Without this trip I wouldn't have learned new field techniques or keyed into different science topics that appeal to me. Thank you very much for the opportunity to go on this trip. I hope other students get the opportunity to take this class and go on this trip.

Student 10

Going to Santa Rosa Island for any reason is an amazing opportunity, but to be able to go and do genuine research and help monitor the growth of the island was an even greater opportunity. On our second day (Saturday) on the island, I had the fantastic opportunity to take a 20 mile round trip hike to the two lagoons on the east side of the island. When we were there, we were able to take reference pictures of the lagoon to monitor the growth of the lagoons habitat. My group also was able to use a water probe to test the salinity, pH, and dissolved oxygen variables of the water. While taking these measurements, we took GIS mapping points at each spot. This hands on experience with the points used for the GIS maps I'm working on brought the work I'm doing in class to life. Being able to have a physical connection to the points made me understand the importance of proper utilization of the information given to me in class when taking data information. I know that because of this opportunity, I now have a greater understanding of the information given to me in class.

One amazing and unexpected outcome of this experience was the emotional attachment I made with the island. The hike I took on Saturday allowed me to see the local wildlife of the island, including the infamous Island Fox. Physically seeing a wild animal that was on the brink of extinction less than 10 years ago made me appreciate the importance of the work done of the island. Having seen the Island Fox, and working on the geospatial analysis for my GIS class helped me realize that I want to work on helping improve our understanding of the succession occurring on the island for the rest of my college career. This trip has helped shape a major part of my college experience and I hope that other students that take this class will also have the opportunity to experience all that I did on this one trip.

Student 11

I have spent several days on Santa Rosa Island in the past with a focus on multiple other aspects of my education. This trip on Friday March 11, 2016 definitely enhanced my learning experience of GIS. We focused on how to efficiently use GPS units for field mapping. We took part in a new study about establishing GPS waypoints for photo plots to observe and quantify the changes in vegetation and landscape within the pictures.



The tutorials for GIS class certainly are the best way to learn how to use the computer program, but being in the field and looking directly at the landscape that you are studying and building maps about in GIS helps put many things into perspective. This field trip made me realize that the accuracy of map making is very important for replicating field methods in order to get good data about what we are studying. Being in the place that we are studying also puts a sense of relevance to the study related to the place we are in. After visiting Santa Rosa Island in this capacity it has been made very clear to me that GIS is an important aspect of scientific research in general.

Save the rain that poured on us for the first few hours on the island, the trip went very smoothly. It was an excellent opportunity to view the island through a different lens, specifically being the perspective of a GIS specialist. I got the chance to explore a new part of the island that I hadn't visited before.

I feel like it is very important for a student to be exposed to all of levels of scientific research, from the production of the protocol to "crunching the numbers" and coming to conclusions about the data that has been collected. Being on Black Mountain with a GPS unit as a part of a classmates sampling method really hit home the whole point of visiting Santa Rosa Island for an Introductory GIS class.

Student 12

The field trip to Santa Rosa Island was a very educational and overall positive experience for me. On this trip, I gained knowledge and experience that will help me in choosing the direction I will be going with my ESRM degree and the capacity of the program and general field related to my major. The trip was geared toward introducing the island's many different areas and plant and animal life on the first day, organism and organism community restoration and conservancy strategies and tactics on the second day, and finally land exploration and tool and device use including compass and GPS use. All of this was very useful and arguably crucial to the information I have been learning in my GIS class.

The first day, we hiked around the island a lot and got familiar with the various peaks and mountains and generally how to navigate by sight and peak names as well as learning about the various plants that were starting to bloom in at this time of early spring. We also saw and were taught about the vast wildlife on the island and the history of wildlife (historic and pre-historic), natives and human intrusion of the island. We also walked across the beach through sand, rocks and an upcoming high tide that we had to race through, all of which was a great learning experience as far as learning to deal with the elements including strong winds, rain, cold ocean water, steep hills and much more.

The second day, I went with a group led by a senior ESRM major to help him with his capstone project. He was studying the size, health and location of the Island Oak Trees,



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specifically the outliers, that he hypothesizes are dispersed throughout the island away from the main groups due to certain birds that are known for eating the acorns that grow on these trees and therefore dispersing the seeds within the acorn around the island during flight. The group participated in the strenuous hike, sometimes across 75 degree inclines, to gather data about individual trees, including height class, trunk number, DBH, acorn growth, and percentage dead. We also participated in bird watching to find out what birds were hanging around the area, specifically the Acorn Woodpecker and the Common Raven. All this was informative for our guide on his capstone project and very informative for the rest of us as well, as this taught us a very useful method for data collection for the purpose of strategizing for restoration and conservancy for this tree that is important to the islands ecosystem and history.

The last day, we played a race styled game that forced us to get well acquainted with how to use a compass and GPS. We learned a little the previous day, my group had to use both a GPS and compass to locate some of these trees as well as take waypoints of the trees located. We used this knowledge and got a lot more hands on experience during the racing game where four separate groups had to find clues placed over the general camping area around the ranching part of the island where the bunker was that we stayed in. The first group to find the finish line got a prize so our drive was great and our compass and GPS training was self-drilled in.

Over all the trip was very scholastic and I know will prove to be vital to the rest of my education and my future career. It is unusual to have an opportunity to get real field work so packed with hands on learning that is so fundamental to the ESRM field. Probably most importantly of all, it really boosted my confidence to perform well in the field, it broke the ice between all the students, including myself, and helped me create important connections including a community of friends, study partners, and likely future workmates that I would not have found otherwise.



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Getting ready to head out to Santa Rosa Islands. ESRM 328 Spring 2016 March 11, 2016



Students learning out to use gps units to locate historic photo point sites. ESRM 328 Spring 2016 March 12, 2016



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Winners of the Navigation Scavenger Hunt. ESRM 328 Spring 2016. March 13, 2016



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Making our way back to the research station. ESRM 328 Spring 2016. March 11, 2016



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ESRM 328 Spring 2016. Taking Photo-points for the historic imagery project. March 12, 2016



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ESRM 328: Spring 2016. Heading home after a fantastic weekend. March 13, 2016



Historic photo-point analysis of vegetation cover on Santa Rosa Island

Matt Arbogast, Alex Ceja, Corey Greenfield, Shelby Palasik, Finnian Swann, Dr. Kiki Patsch, Dr. Cause Hanna
Environmental Science & Resource Management Program
California State University Channel Islands



PURPOSE

The Santa Rosa Island Research Station (SRIRS) historical photo-point analysis project was created to monitor and evaluate the recovery of plant communities on Santa Rosa Island in the absence of human habitation and ranching operations, which decimated the native plant communities. Monitoring recovery is a critical part of determining the success of restoration efforts and the implementation of future management decisions. This study will compare historic imagery with new photos taken bi-annually by students to monitor the change in ground cover and vegetation over time.

Lobo Canyon Riparian Habitat



1995 → 2016

IMPORTANCE

Thanks to its simple set of methods, this project serves as an exceptional first-hand introduction to conservation, field methods, research, and the scientific method for students of any age or skill-level. It also serves as a strong bonding experience for classmates who work together in teams to gather data; setting the foundation for future island research projects on Santa Rosa. Students are given a rare chance to see how their contribution affects the project, and can take pride in being an integral part of something far larger than themselves.



Spring 2016 Introduction to GIS class
The first contributors to the project.

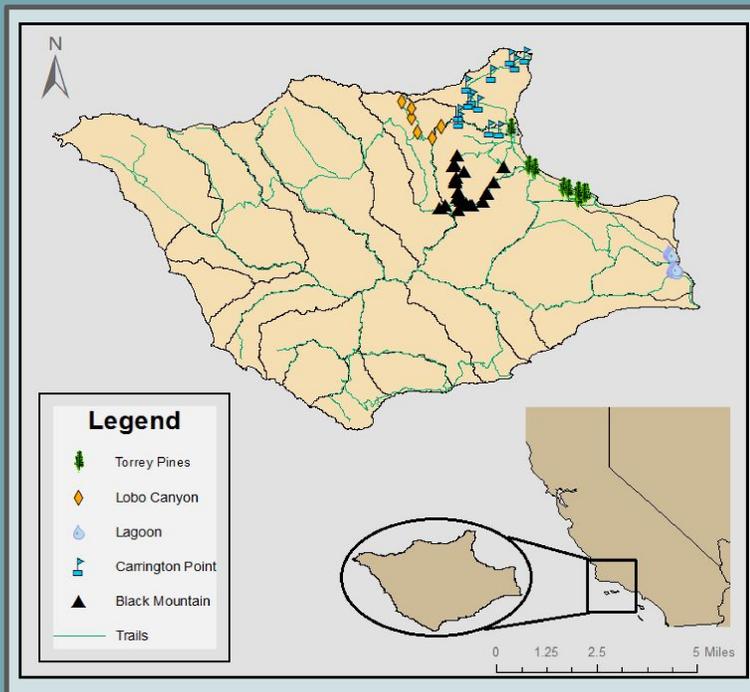
Upper Windmill Canyon



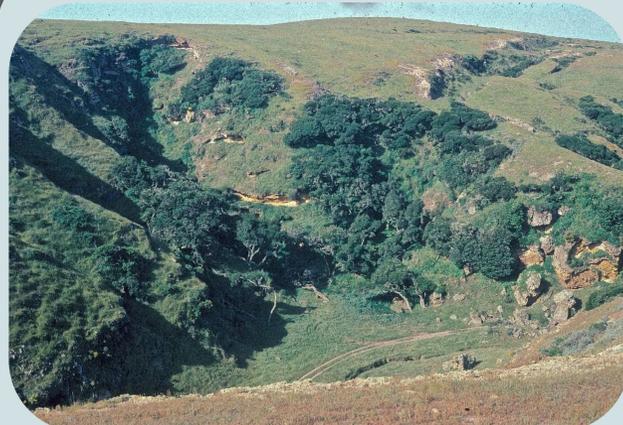
1942 → 2016

METHODS

- Using handheld GPS units, students record the coordinates of old and new sites of interest for monitoring recovery.
- At each coordinate point, a reference photo is taken and information like date, time, coordinates, and declination of a nearby landmark are recorded.
- Subsequent photos taken at these sites will be compared to the reference photos to assess changes in vegetation and land cover.
- GPS points and images are added to a GIS database of Santa Rosa Island for future students, faculty, and Channel Islands National Parks research.



Lobo Canyon Parking Site



1993 → 2016



Dr. Hanna instructs students on GPS use

ACKNOWLEDGEMENTS

This project is made possible by the generous support of students through the Instructionally Related Activities (IRA) fund. Special thanks to Dr. Cause Hanna, Dr. Kiki Patsch and the staff of the SRIRS.



Finn checks his compass



Maggie and Lee create a photo-point