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**NORTH AMERICAN
CROP CIRCLES
and
RELATED PHYSICAL TRACES
REPORTED IN 1992**

A Study Conducted by the North American Institute
for Crop Circle Research

Winnipeg, Manitoba
Canada

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This study was conducted by the North American Institute for Crop Circle Research in conjunction with Ufology Research of Manitoba. Research associates with NAICCR and UFOROM include:

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North American Crop Circles

and Related Physical Traces

Reported in 1992

Since 1990, NAICCR (North American Institute for Crop Circle Research) has been requesting and collecting information on UGMs (unusual ground markings) in North America. The 1990 and 1991 NAICCR reports were widely circulated, and have been reprinted in a number of books and publications around the world. The favourable response of the ufology and cerealogical community to NAICCR's efforts has encouraged the continued gathering of data for comparison and analysis.

One of the reasons NAICCR has been making UGM and crop circle data available to researchers is because no comparable reports are produced regarding UGMs in Britain. Various factions and cerealogists are said to maintain extensive databases on crop circles, but the data is normally not disseminated. True, several coffee-table books have been published with remarkable aerial photographs of unique formations, and cerealogy "alphabets" have been circulated which categorize the agriglyphs, but raw data including all possibly relevant parameters is hard to come by. In addition, there is the alleged "hoarding" of crop circle data by some researchers, and the selective winnowing of cases by others.

Since British data has been so elusive to some researchers, NAICCR associates have attempted to gather UGM data from the entire continent of North America, rather than focusing upon the British scene. This has been no small feat. The effective area of North American cerealogy is several times larger than that of Britain, so North American cerealogists have a much more difficult task than their counterparts across the ocean. "Stakeouts" of circle-prone areas are possible in England, but not in America.

The principle which guides the collection and dissemination of crop circle data by NAICCR is the open exchange of information for all those involved in the field. It has been suggested that the sharing of information and the co-operation between researchers is a vital aspect of both ufology and cerealogy.

In practice, although requests for information are frequently made, relatively few researchers and investigators respond by sending NAICCR the required data. Typically, local investigators send information to regional directors of their organizations, if they send their information to anyone at all. The quality and style of investigations tend to vary considerably, and therefore make comparative studies very

difficult. The need for standardization of investigative techniques is clearly an issue in UGM studies.

As a result, information about many UGMs comes by way of second-hand sources, newsletters, magazines, computer bulletin boards and media reports. Some reports of UGMs are nothing more than rumours, despite attempts to substantiate claims and alleged witnesses' accounts. For these reasons, the usefulness of the data is limited. However, it is the position of NAICCR that the collection and publication of this data are important in the development of the field. At the very least, researchers who perhaps read only a few publications can be apprised of the broader aspect of the phenomena, and the variety of the cases.

While it is admirable that many researchers have taken it upon themselves to study specific cases or aspects of UGMs, those who claim expertise or are portrayed as being very knowledgeable of the subject are sometimes poorly versed in the phenomenon. Indeed, some lack the necessary background to speak with authority on UGMs or related phenomena. This has resulted in some "experts" making unscientific or otherwise unsupported claims during media interviews, contributing to misconceptions about the facts of the phenomenon.

The situation is complicated further by the delineation of "camps" within the UGM field, whether they be vortex theorists, UFO adherents, skeptical refuseniks or ultraterrestrialists. These are additional reasons why an objective presentation of all the raw data from all sources is considered essential in order to gain a more complete understanding of the phenomena. It is the hope of NAICCR that the presentation of North American UGM data in this Report will encourage more co-operation and discussion among researchers at all levels, whether the reader is an armchair theorist, a field investigator or a debunker.

The general position of NAICCR is that no one theory is favourable over any other at the present time. This flies directly against the belief by many skeptics that "all crop circles are hoaxes", and also the belief by many ETH supporters that crop circles are definitely communications from aliens. The hoax issue is not trivial. Debates are raging between cerealists concerning the fraction of "genuine" formations that have been found.

First of all, we must realize that the exact determination of this fraction is impossible, since we have no exact figure for the number of all UGMs in Britain. Are there 1000 recorded sites since 1980? 2000? 3000? Do the numbers reflect individual UGMs, or complete formations? Is a site with ten "grapeshot" circles counted as "ten" or "one"?

Second, cerealogists have gone on record as saying that hoaxers have become so proficient at their craft that there is now no way to tell a "genuine" circle from a "fake" one. The implications of such a statement should alarm researchers. If hoaxed circles look "genuine", then all circles could be hoaxes just as easily as all circles could be "real".

Third, claims of hoaxing are themselves not proof of hoaxing. Although skeptics would invoke Ockham's Razor and point out that hoaxing is the simplest explanation for crop circles, the problem is more complex than that. Aside from the Bower/Chorley demonstrations, comparatively few hoaxers have admitted their handiwork and have described their exact method used. This has resulted in many cerealogists adopting a "doubting Thomas" attitude; unless hoaxers are caught red-handed or come forward after the fact with detailed information about their hoax effort, the hoaxers are not to be believed.

In North America, though several individuals have claimed to have hoaxed crop circles, only a few have met the "doubting Thomas" criteria. The situation is much worse in Britain, given the larger number of sites. A common observation among cerealogists is that hoaxing cannot be a viable explanation because thousands of crop circle sites would require huge armies of hoaxers, all of whom were clever enough to make intricate formations without being seen, indeed, in some cases, under the watchful eyes of surveillance cameras.

But are the logistics of hoaxing really that impossible? Since many formations were discovered days or even weeks after they were likely created, they could have been done without any witnesses. By the time many were found, visitors might have trampled tell-tale signs of hoaxing. We do not have accurate figures available on the fraction of sites which were under observation, and which were also investigated prior to visitors. How many of the 1000 (or 2000) UGMs are considered highly reliable?

Let us assume that there is one determined and expert crop circle hoaxer in Britain. Let us also assume that he (or she) made one crop circle per night during a 100-day

farming season. This one person could have made all 1000 circles in Britain since 1980!

This is absurd, of course. The time requirements, personal cost, travelling, secrecy and other factors would make this scenario ridiculous. But let us assume that the variables were altered. Suppose there were ten hoaxers. Suppose that ten crop circles were made each night. Suppose that some circles were created by a mysterious natural or preternatural

phenomenon (!). The reader is left to speculate upon other scenarios. This exercise does not, by itself, imply that hoaxing is the most likely explanation for crop circles. However, it puts into perspective the problems of coming to terms with the phenomenon.

What of the other theories? What evidence is there to support the vortex or extraterrestrial theories? In the former, there do exist several dozen recorded cases of eyewitnesses to strong, spiralling downdraughts making circular patches in wheat or tall grasses. Both Ohtsuki and Meaden have presented physical arguments that simple crop circles could be made by wind vortices, and have hypothesized certain physical conditions that might be conducive to crop circle creation (sides of hills, winds, etc.). However, given the difficulty of weeding "genuine" circles from the dross in the data, the theory requires some refining. In addition, a "natural" mechanism would demand the creation of formations in great numbers around the world, not just confined to a small area in Britain. Perhaps, the NAICCR reports will serve to support the theory.

On the other hand, TIF (Theory of the Intelligent Force) seems supported by eyewitness accounts and videos of unusual lights or structured objects near crop circle sites. Some vortex theorists might say these are special cases of plasmas in action, but some TIF proponents insist that added factors such as weaving and complex patterns rule out a natural mechanism.

In terms of physical changes within crop circles, results are interesting, though not completely satisfying. Tests have shown no sites to have residual radioactivity, despite earlier heralded claims to the contrary. Spagyric analyses, dating back to the days of alchemy and not given much scientific weight today, attempted to show "crystallization" of plant cells from within crop circles. This evidence is not as credible as many would believe. We are left with the body of evidence produced

through analyses by Dr. W. Levengood of Pinelandia Biophysical Laboratories. His results, published in a series of reports, purport to show "changes" or otherwise significant abnormalities in samples taken from circle sites. The prospect of proving abnormalities within crop circles using these results is very exciting, though it would be preferable if other independent laboratories could confirm the effects.

Results of the 1992 Study

As of 31 January, 1993, there had been 93 UGMs (unusual ground markings) reported or otherwise communicated to UFOROM (Ufology Research of Manitoba) or NAICCR during the 1992 calendar year. These represented only 40 different sites or locations; some cases had multiple associated UGMs. The set of UGMs includes those features commonly called "crop circles" as well as features known as "saucer nests", "space cookies", "burn marks" and "landing traces".

The UGMs were classified in the following categories:

1. FC - Flattened Circle
2. FR - Flattened Ring
3. BC - Burned Circle
4. BR - Burned Ring
5. BF - Burned and Flattened
6. CR - Concentric Ring
7. VM - Vegetation Missing
8. VD - Vegetation Dead
9. YG - Yellowing of Grass
10. SG - Stunted Growth
11. EG - Enhanced Growth

12. DP - Depression

13. HO - Hole

14. OT - Other

The classification system is not mutually exclusive, and some sites may contain more than one category of UGM.

A problem in the statistical tabulation of UGM data is the lack of standardization in the counting of the UGMs. At some sites, only a single UGM is observed, while at others, there may be dozens. Some researchers have chosen to count each UGM separately, but many count features according to sites. A "quadruplet" may therefore be counted as "4" or "1", depending on the system used. A more complex feature such as an "agriglyph" poses additional problems: is a count of its component circles, triangles, etc., of real analytical value? The NAICCR data is presented with both counting schemes; researchers can adopt their own systems for interpretation.

It is interesting to note that the number of UGMs per year has remained about the same since 1990. This might suggest that UGMs are a continuing, constant phenomenon like their cousins, UFOs.

	1990	1991	1992
# UGMs	86	87	93
# Sites	45	37	40

UGMs per Year

Canada	%	USA	%	Total
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Total UGMs	47	50.5%	46	49.5%	93
# Sites	21	52.5%	19	47.5%	40

UGMs in North America in 1992

Of the 93 total UGMs found in North America, 47 (50.5%) were in Canada and 46 (49.5%) were in the United States. When the number of sites is examined, the distribution is essentially the same: 21 (52.5%) in Canada and 19 (47.5%) in the United States. When compared with previous years, the 1992 data suggests several things. First, the number of reported UGMs in North America is constant, averaging around 90 UGMs/year. Second, it would appear that the ratio of UGMs/sites is also constant, with a value near two. In other words, the typical UGM case involves at least two impressions/effects, and are more properly called formations.

If we assume that the mechanism for reporting North American UGM cases is relatively constant, this data does seem to show a "background" level of UGM activity, something that had been suspected by some researchers. More to the point, it suggests that the huge numbers of crop circle UGMs in Britain are an anomaly. Some would read this as a confirmation of widespread hoaxing and contamination of British UGM data. To others, this implies that the British hills and valleys are host to a truly unique phenomenon, incomparable to UGM activity elsewhere in the world. Indeed, the constancy of the American numbers seems to show that American and British UGM activity, specifically that of crop circles, are different effects with different causes. Why this is so is not completely clear at this time.

Distribution of UGMs in States and Provinces

State/Province	USA/CDN	# UGMs	Sites
Alberta	Canada	18	3
Arizona	USA	3	1
California	USA	2	1

Georgia	USA	2	1
Illinois	USA	8	4
Iowa	USA	1	1
Manitoba	Canada	20	11
Massachusetts	USA	1	1
Minnesota	USA	2	1
Missouri	USA	1	1
New Hampshire	USA	1	1
North Carolina	USA	1	1
Ohio	USA	2	2
Ontario	Canada	1	1
Pennsylvania	USA	12	1
Saskatchewan	Canada	8	6
South Dakota	USA	1	1
Tennessee	USA	9	2

As in previous years, there was an uneven distribution of UGMs throughout North America in 1992. Significant numbers of cases were reported in Manitoba and Saskatchewan, which had few UGMs reported in 1991. Illinois had the largest number of cases in 1992, as in previous years.

There was a strong, significant difference in the direction of swirl reported for crop circles. Of the cases for which swirl data was reported, 28 swirls were counterclockwise, and only one was clockwise. All swirled UGMs were in Canada.

Number of UGMs by Crop and Country

Crop	USA	Canada
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Alfalfa	5	
Barley		2
Corn	1	1
Grass	15	11
Ice	1	
Oats		3
Potatoes	1	
Wheat	21	30

The diversity of the crops affected by UGMs is evident in the above table. The public impression that crop circles appear exclusively in wheat is clearly wrong. Furthermore, the British label of "corn circles" is also a misnomer for North American cases, though this is due more to idiom than botany. Some researchers such as AUFOSG have noted this problem of crop identification, and have included the proper scientific names of affected UGM crop in their reports. If other groups adopt this system, it may alleviate some confusion.

The most marked change from 1991 is the increase in wheat formations in the United States. There were 21 in 1992, but only 1 in 1991. Otherwise, UGM activity was as varied as in previous years.

Number of UGMs by Crop (When Specified)

Alfalfa	5
Barley	2

Corn	2
Grass	26
Ice	1
Oats	3
Potatoes	1
Wheat	51
Not Specified	2

Number of UGMs by Type (When Specified)

	USA	Canada
Flattened Circle	33	15
Flattened Ring	2	20
Hole		1
Vegetation Dead	1	
Vegetation Missing	1	
Yellowed Grass	1	
Other	2	11
Not Specified	6	

In 1992, the average diameter of UGMs was 10.62 metres. In 1991, the average diameter of UGMs was 7.06 metres. The 1990 average was 10.7 metres.

The "UFO Connection" to UGMs and crop circles alleged by some researchers is not borne out by the 1992 data. UFOs were reported in conjunction with only 4 UGM sites, representing 10% of the cases. We can note that Ted Phillips' Catalog of Physical Traces Associated with UFO Sightings, published in the 1970's, had a similar fraction of cases. Many of the UGMs listed in his Catalog had no associated UFO activity. In other words, the overall characteristics of trace cases and UFO effects have not changed dramatically over the years; only our identification and naming the sites as "crop circles" instead of "physical traces" has evolved.

In 26 UGMs (28%) or at 8 sites (20%), winds were noted as a possible explanation. As many as 18 UGMs (19%) at 8 sites (20%) were given probable explanations. As can be seen in the annotated list of cases, cerealogists are rapidly gaining expertise in crop effects such as lodging and blights.

The characteristics of 1992 UGMs varied considerably. As many as 11 UGMS (12%) at 7 sites (17.5%) were described as possessing "corridors". No complex formation such as the Coalhurst structure of 1991 was discovered, though smaller oddities such as "dumbbells" and "Mars symbols" were noted in 1992.

The listing of UGM data does not include any indication of the investigations and conclusions reached by researchers regarding the cause or reason for the existence of the features. The limited information available for these analyses precluded any extensive discussion of the individual cases. Some information about the cases will be found in the annotated case list later in this report. Sources of information about the cases are provided, but researchers intending to use this data in their own studies are cautioned that NAICCR cannot vouch for the accuracy of reports.

The question of physical or physiological effects reported at UGM sites should also be addressed here. It has been claimed that electronic interference is sometimes experienced within or in the proximity of British crop circles. Convincing support for this claim is much debated, but such effects have been noted in many cases, usually as an indication that UFOs have been involved. Sometimes, vortex theorists imply that these effects may be related to plasma activity in the surrounding area.

In both 1991 and 1992, several North American UGM sites were claimed to have associated effects. Some sites were said to exhibit a positive effect when dowsed, while other sites produced eerie "energy", detected by sensitives. Unfortunately, these effects do not seem to be consistent, and are were not experienced by all witnesses or investigators at the same site.

It is hoped that research into UGMs will benefit from studies of the raw UGM data. Researchers are urged to examine the data presented and prepare their own interpretations in order to further develop their theories about the origins of UGMs or the specific category of crop circles.